Filed pursuant to Rule 424(b)(4)
Registration No. 333-256644

PROSPECTUS

6,666,665 Shares

Common Stock

We are offering 6,666,665 shares of our common stock. This is our initial public offering, and no public market currently exists for our common stock. The initial public offering price is $16.00 per share.

Our common stock has been approved for listing on the Nasdaq Global Select Market under the symbol “DNAY.”

We are an “emerging growth company” and “smaller reporting company” as defined under the federal securities laws and, as such, have elected to comply with certain reduced reporting requirements.

Investing in our common stock involves a high degree of risk. Please read “Risk Factors” beginning on page 14 of this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

	PER SHARE	TOTAL
Public Offering Price	$16.00	$106,666,640
Underwriting Discounts and Commissions[(1)]	$1.12	$7,466,665
Proceeds to Codex DNA, Inc., before expenses	$14.88	$99,199,975

(1) See the section titled “Underwriting” for a description of the compensation payable to the underwriters.

Delivery of the shares of common stock is expected to be made on or about June 22, 2021. We have granted the underwriters an option for a period of 30 days to purchase an additional 999,999 shares of our common stock. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable by us will be $8,586,664, and the total proceeds to us, before expenses, will be $114,079,960.

Jefferies **Cowen** **KeyBanc Capital Markets**

Prospectus dated June 17, 2021

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Through and including July 12, 2021 (the 25th day after the date of this prospectus), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

Neither we nor the underwriters have authorized anyone to provide you any information or make any representations other than that contained in this prospectus or in any free writing prospectus prepared by or on behalf of us or to which we have referred you. We and the underwriters take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We and the underwriters are not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus is accurate only as of the date on the front cover of this prospectus. Our business, financial condition, results of operations and prospects may have changed since that date.

For investors outside of the United States: we have not, and the underwriters have not, done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than the United States. Persons outside of the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the shares of common stock and the distribution of this prospectus outside of the United States.

PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus and is qualified in its entirety by the more detailed information and financial statements included elsewhere in this prospectus. This summary does not contain all of the information you should consider before investing in our common stock. You should carefully read this entire prospectus, including the information under the sections titled "Risk Factors," "Special Note Regarding Forward-Looking Statements," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes included elsewhere in this prospectus before making an investment decision. Unless the context requires otherwise, references in this prospectus to "we," "us," "our," "our company," "Codex DNA," or "the Company" refer to Codex DNA, Inc. and its subsidiaries.

Overview

We believe that we are a leading synthetic biology company focused on enabling researchers to rapidly, accurately and reproducibly build or "write" high-quality synthetic DNA and mRNA that is ready to use in many downstream synthetic biology enabled markets. Our synthetic biology solution addresses the bottlenecks across the multi-step process of building DNA and mRNA, as well as the significant limitations of existing solutions that prevent the rapid building of virtually error-free DNA and mRNA at a useable scale. A key part of our solution is our BioXp system, an end-to-end automated workstation that fits on the benchtop and is broadly accessible due to its ease-of-use and hands-free automation. We believe our BioXp system can democratize synthetic biology by simplifying the process of building DNA and mRNA, thereby accelerating the discovery, development and production of novel high-value products, including antibody-based biologics, mRNA-based vaccines and therapeutics and precision medicines.

We developed our synthetic biology solution to address the significant unmet need in the market for an approach that can automate, integrate, optimize and standardize the process for building synthetic DNA and mRNA. We commercially launched our current synthetic biology solution in September 2019, which now includes the BioXp 3250 system, BioXp kits with associated cloud-based application scripts, and benchtop reagent kits. Since the introduction of our solution through June 1, 2021, we have launched eight BioXp kits, three benchtop reagent kits, and several other synthetic biology products, including 12 SARS-CoV-2 full-length genomes and RNA controls as well as our Vmax X2 cells. We have placed approximately 160 BioXp systems globally. We target customers in the fields of personalized medicine, biologics drug discovery, vaccine development, genome editing and cell and gene therapy. As of June 1, 2021, our customer base was composed of over 300 customers and included 15 of the 25 largest biopharmaceutical companies in the world ranked by 2020 revenue, excluding affiliates of those companies. Our customer base also includes leading academic research institutions, government institutions, contract research organizations (CROs) and synthetic biology companies.

Background on Synthetic Biology

Synthetic biology is a well-established and rapidly expanding field of science that involves the engineering of biological components such as genes, mRNA, proteins, viruses and living cells starting from a digital DNA sequence, enabling the construction of those macromolecules and organisms with new and improved biological functions. The application of synthetic biology is constantly expanding, and new end markets are emerging, driven by continued innovation, a growing understanding of biology and access to novel research tools. For example, in healthcare, synthetic biology is being used to discover, develop and produce novel DNA-, mRNA-, and protein-based therapeutics and vaccines (e.g., antibody-based biologics, mRNA-based COVID-19 vaccines and personalized cancer therapeutics). In agriculture, synthetic biology is being utilized to improve crop yields and create novel food sources (e.g., plant-based meat products). Similarly, in technology, synthetic biology may lead to the ability to store and retrieve digital data using DNA. Finally, in consumer markets, synthetic biology is being employed in a variety of applications. For example, synthetic biology is used to construct clothes from renewable, bio-based sources, to develop biofuels and renewable energy from engineered microbes, and to produce plastics from biodegradable polymers.

Synthetic biology is enabled by numerous technologies that facilitate the *design-build-test* paradigm of new or modified biological components. Any inefficiency across these three phases can create a bottleneck hindering the rapid iteration within product development. In the build phase, the process of writing synthetic DNA or mRNA for an improved biological function is characterized by multiple, complex processes that involve numerous time-consuming and technical steps, including DNA synthesis, DNA assembly, DNA cloning, and DNA scale-up in *E. coli* with

multiple DNA purification steps in between. If the final product is mRNA, the process continues with additional technical steps including mRNA synthesis, mRNA modifications at each end and multiple mRNA purification steps.

In its January 2020 report, BCC Research estimated that the global synthetic biology market was $5.3 billion in 2019 and projected that market to grow at a compound annual growth rate (CAGR) of 29%, reaching an estimated market size of $18.9 billion by 2024. Of this $5.3 billion market, BCC Research estimated that enabling technologies, such as our workflow solutions, represented an approximate $2.6 billion market opportunity in 2019. Additionally, within this market, Transparency Market Research estimated that the *in-vitro* transcription template market (mRNA production) was $118 million in 2020 and is growing at a CAGR of 19.8%.

Key Limitations in Writing Synthetic DNA and mRNA

Despite these substantial advancements, including the accumulation of a large number of functional discoveries resulting from the wide-spread adoption of DNA sequencing instruments, the profound potential of synthetic biology has been hampered by the complexity within, and among, the multi-step process of writing synthetic DNA and mRNA, as well as significant limitations of existing solutions that prevent the rapid building of virtually error-free DNA and mRNA at a useable scale. Both limitations ultimately affect speed and quality of product delivery.

Currently, the process of writing synthetic DNA or mRNA for an improved biological function is carried out in laboratories by highly skilled researchers using multiple kits, each designed to perform one or more of the technical steps. Depending on the length and complexity of the desired synthetic DNA or mRNA product, the process may involve hundreds of manual steps, require numerous different kits and take days, weeks or months to complete. As an alternative solution, many, but not all, of these steps can be outsourced to a molecular biology CRO for completion, shifting those challenges from the end user to the CRO. However, outsourcing poses additional limitations, including lack of workflow control, unpredictable timelines and security issues.

Whether experiments are performed in-house or through a CRO, existing solutions for building synthetic DNA and mRNA have deficiencies. For example:

- inconsistent levels of fidelity of DNA and mRNA fragments reducing overall yields of usable material;
- inability to construct stretches of DNA and mRNA sequence that have particular features;
- inability to construct DNA and mRNA sequences above a certain size; and
- inability to produce the end product in sufficient quantities for downstream applications.

These limitations produce bottlenecks across the build phase, which have significantly hindered the ability of the synthetic biology paradigm to deliver on its full potential. This inefficiency has created a significant unmet need in the market for an approach that can automate, integrate, optimize and standardize the process, and thereby enhance the speed, predictability and reproducibility of the *design-build-test* paradigm.

The Codex DNA Solution

Our synthetic biology solution, which leverages our industry-standard Gibson Assembly method, is aimed at addressing the bottlenecks across the build phase in order to accelerate the *design-build-test* paradigm. Key to our solution is our BioXp system, an end-to-end automated system for synthetic biology that fits on the benchtop and is broadly accessible due to its ease-of-use and hands-free automation. We have developed and commercialized the current version of the BioXp system, the BioXp 3250 system. We believe our BioXp system can democratize synthetic biology by making the build phase broadly accessible in terms of simplicity, accelerating applications and workflows, and greatly facilitating development of novel high-value products across a wide range of synthetic biology enabled markets. Our BioXp system empowers users to rapidly, accurately and reproducibly create high quality synthetic DNA and mRNA that is ready for use in many downstream synthetic biology workflows.

Our synthetic biology solution is comprised of:

- *The BioXp system*: which we believe is the first commercially available push-button, walkaway, end-to-end automated workstation, which requires only a few minutes of set up time, that empowers researchers to translate a digital DNA sequence to endpoint-ready synthetic DNA in as few as 8 hours and mRNA in less than 24 hours, exclusive of shipment time, using a benchtop instrument that is run by sophisticated onboard software;

- *The BioXp portal*: a user-friendly online portal that offers an intuitive guided workflow and design tools for building new DNA sequences and assembling them into vector(s) of choice using Gibson Assembly on the BioXp system;
- *The BioXp kits*: contain all the necessary building blocks and reagents, including our proprietary Gibson Assembly branded reagents, for specific synthetic biology workflow applications;
- *Cloud-based scripts*: product-specific and pre-validated scripts that optimize and simplify the use of the BioXp kits on the BioXp system (e.g., the BioXp system automatically scans barcodes from reagent plates to download scripts, enabling hands-free operation);
- *Benchtop reagents*: contain all the reagents necessary to proceed with a specific synthetic biology workflow on the benchtop using products generated on the BioXp system, providing additional flexibility to the customer and furthering our end-to-end solution; and
- *Biofoundry Services*: enable a customer to order and receive any of the BioXp system endpoint-ready products, such as genes, clones, cell-free amplified DNA and variant libraries.

Our solution is designed to offer the following benefits:

- *Consolidation of the build phase within a single end-to-end automated system:* We provide researchers all the hardware, software, materials and methodologies required to rapidly and accurately design and build large quantities of synthetic DNA and mRNA, with BioXp kits for synthetically produced protein under development. Our BioXp system reduces the turnaround time for such workflows to days or hours. Moreover, researchers no longer require multiple vendors to complete such workflows, eliminating related bottlenecks and security concerns.
- *Increased speed and scale*: Our BioXp system has the capacity to parallel process as many as 32 samples at once within an 8- to 24-hour period, depending on the BioXp kit being used. It also has the capacity to generate high quality and diverse libraries with short lead times, allowing innovation to be maintained in-house.
- *Capacity to construct a wide array of product formats*: Our BioXp system was designed such that future applications would not require hardware upgrades but only software upgrades that could be installed remotely. This feature has facilitated new product development efforts to enhance current product specifications and to develop new kits that extend beyond the production of synthetic DNA. For example, since the BioXp system was launched, new scripts have been developed to produce larger gene products, cell-free amplification of cloned DNA, and production of synthetic mRNA. Likewise, new scripts are currently being developed to enhance the mRNA product offering and develop protein synthesis BioXp kits. This capability provides substantial time-to-product and workflow control advantages for customers and gives them the flexibility to select the workflows that meet their unique needs.
- *Ability to construct larger and more complex DNA and mRNA sequences*: Our BioXp system uses proprietary protocols developed for robust DNA synthesis, assembly, and cloning enabling the construction of genes, mRNA, and clones across a wide range of sizes and complexity.
- *Industry-leading quality and performance*: Our BioXp system uses a proprietary two-step error correction process to generate virtually error-free synthetic genes every time. When compared to certain of our competitors, we have observed a 2.74 fold increase in sequence precision.
- *Enhanced productivity*: Our BioXp system creates finished DNA products in as few as eight hours. In addition, it includes protocols for the cell-free amplification of cloned DNA, obviating the need to use *E. coli*, reducing the time to product by days or even weeks. Altogether, we believe that this could represent at least a 20-fold productivity increase through accelerated iterations of the *design-build-test* paradigm. Ultimately, product development cycles are accelerated because the desired biological results are identified more quickly.
- *Protection of proprietary vectors*: Our BioXp system permits our customers to maintain their proprietary vectors on site, protecting their intellectual property throughout their entire development lifecycle.

The metrics described above were calculated using averages derived from publicly available information and quotes received for comparable product offerings by some of our competitors, some of which included shipping times, and averages from our workflows.

Our Growth Strategy

Our goal is to establish our solution, including our BioXp family of systems, as the industry standard for building synthetic DNA, mRNA and protein, and to democratize synthetic biology, thus accelerating its applications and workflows across a wide range of industries. To achieve this objective, we intend to:

- drive new customer adoption of our BioXp systems;
- maximize the utilization of BioXp system by developing additional BioXp kits for our customers' workflows;
- continue to expand into other attractive markets for synthetic biology that are currently under-served;
- develop and commercialize new, disruptive BioXp systems to further increase utilization, expand breadth of applications, and accelerate product development cycles;
- continue to innovate across our synthetic biology product portfolio;
- establish strategic partnerships leveraging our core competencies and validating our technology; and
- continue to attract leading scientists to work at our company.

Our Products

We have developed and commercialized products that include BioXp systems, BioXp kits for generating a wide array of synthetic DNA and mRNA formats, and benchtop reagents that complement the automated synthetic biology workflow applications and workflow solutions.

Our BioXp 3250 system was launched in September 2020, replacing a legacy BioXp 3200 system. We believe that it is the first commercially available fully automated benchtop instrument that enables numerous synthetic biology workflows by providing a turn-key, end-to-end solution for generating synthetic DNA and mRNA starting from DNA sequence. Through a combination of increased throughput and scale and reduced hands-on time, we estimate that the BioXp 3250 system offers the potential to significantly enhance productivity several fold, accelerating the development of critical new products in enabled markets. The BioXp 3250 system accelerates the *design-build-test* phases of the customer's product development cycle by enabling rapid, automated synthesis of genes, clones, variant libraries and mRNA. Unlike traditional approaches that can take days, weeks or months, the BioXp 3250 system achieves these workflows in a single run, which can be completed in 8 to 24 hours.

Our BioXp kits contain all the requisite Gibson Assembly branded reagents and allow our BioXp system to perform the steps required to produce various DNA and mRNA products designed for a range of synthetic biology

applications. BioXp kits are designed to be backwards compatible with legacy systems and forward compatible with systems under development. Since the introduction of our solution through June 1, 2021, we have launched eight BioXp kits.

We also offer benchtop reagents that are synergistic with our BioXp system and BioXp kits to accelerate the build phase of the *design-build-test* synthetic biology paradigm. Since the introduction of our solution through June 1, 2021, we have launched three benchtop reagent kits.

As part of our continuing effort to improve the processes of synthetic biology, we are currently developing next-generation BioXp systems and BioXp kits with an aim to radically transform rapid demand-response workflows in synthetic biology by consolidating supply chains and enabling global distributed manufacturing for both discovery and clinical applications. Our ultimate goal is to build what we describe as the Digital-to-Biological Converter (DBC). The DBC's approach would begin not with oligonucleotides, which can take days to procure, but with DNA sequence data. The system we envision would take data and produce synthetic genes, or even convert those automatically into mRNA or protein. This would enable the "sequence-in, vaccines-out" concept that could replace the months-long manufacturing processes required today with a process that can be carried out in a matter of days.

We label and sell our products for research use only (RUO) and expect to sell them to academic institutions, life sciences and research laboratories that conduct research, and pharmaceutical and biotechnology companies for non-diagnostic and non-clinical purposes. Our RUO products are not intended or promoted for use in clinical practice in the diagnosis of disease or other conditions, and they are labeled for research use only. Accordingly, we believe our products, as we currently intend to market them, are not subject to regulation by FDA. Although FDA regulations require that RUO products be labeled with "For Research Use Only. Not for use in diagnostic procedures," the regulations do not subject such products to the FDA's jurisdiction or the broader pre- and post-market controls for medical devices.

We are an early-stage synthetic biology technology company, and we have incurred significant losses since separating from Synthetic Genomics, Inc. (SGI) and beginning to operate as a stand-alone entity in March 2019, and expect to continue incurring losses in the future. We incurred net losses of $8.3 million for the period from March 8, 2019 through December 31, 2019 and $18.0 million for the year ended December 31, 2020. We incurred net losses of $3.9 million and $7.4 million in the three months ended March 31, 2020 and 2021, respectively. As of March 31, 2021, we had an accumulated deficit of $33.8 million. These losses and accumulated deficit were primarily due to the substantial investments we have made to develop, commercialize and market our technology and products. Other risks with respect to our business are listed in the "Risks Associated with Our Business" on page 6 and in the "Risk Factors" section beginning on page 14.

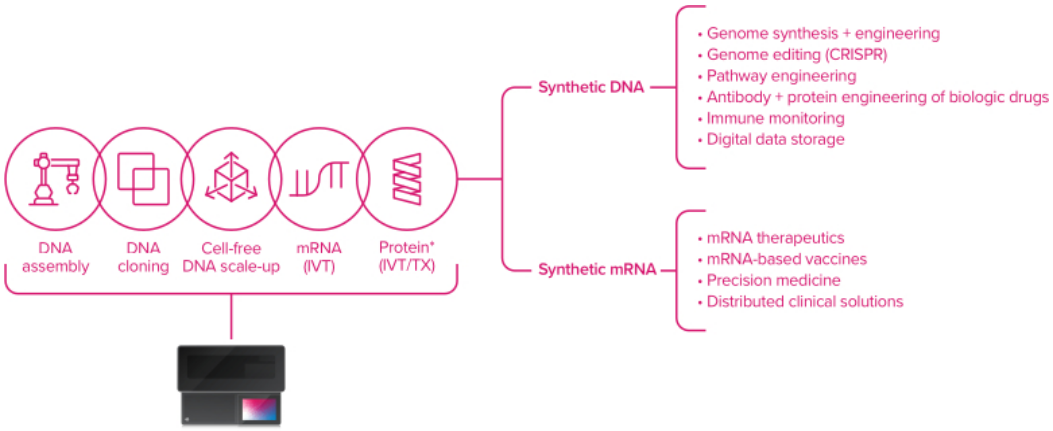
Our Biofoundry Services

We use our BioXp 3250 system, BioXp kits and benchtop reagents to perform biofoundry services for customers. Typically, these customers have not yet purchased our BioXp system or they have custom requirements. We apply sophisticated security protocols to these services designed to protect our customers' intellectual property rights, which is a key concern for customers. These services enable a customer to order and receive any of the BioXp system endpoint-ready products, such as genes, clones, cell-free amplified DNA and variant libraries. Importantly, our biofoundry services are strategically used in a consultative partner approach through our pilot program, allowing customers to see specific proof points prior to potentially purchasing a BioXp system.

Workflow Solutions for Synthetic Biology Enabled Markets

Our current and future BioXp systems are intended to address the needs of the synthetic biology customer across discovery and pre-clinical development by providing an unmatched capability to synthesize high-quality DNA in as few as 8 hours and mRNA in less than 24 hours, exclusive of shipment times. With future system releases and extensions, we plan to address the continuum of research needs across the central dogma of molecular biology by enabling cell-free production of high-quality synthetic DNA, mRNA and protein for the discovery, development and

manufacturing of enabled products across a wide range of markets. The graphic below demonstrates our solution for DNA and mRNA enabled workflows.



*Future product offering

Risks Associated with Our Business

Our business is subject to numerous risks and uncertainties that you should consider before investing in our company. These risks are described more fully in the section titled “Risk Factors” in this prospectus. These risks include, but are not limited to, the following:

- we are an early-stage synthetic biology technology company with a history of net losses, which we expect to continue, and we may not be able to generate meaningful revenues or achieve and sustain profitability in the future;
- we have a limited operating history, which may make it difficult to evaluate the prospects for our future viability and predict our future performance;
- our operating results may fluctuate significantly in the future, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or any guidance we may provide;
- we may not be able to achieve or maintain satisfactory pricing and margins for our products;
- the size of the markets for our products may be smaller than estimated, and new market opportunities may not develop as quickly as we expect, or at all, thus limiting our ability to successfully meet our anticipated revenue projections;
- we have limited experience in sales and marketing of our products;
- we may need to raise additional capital to fund our operations, which may be unavailable to us or, even if consummated, may cause dilution or place significant restrictions on our ability to operate;
- we rely on a single contract manufacturer to manufacture and supply our instruments and single source suppliers for certain components of our instruments and raw materials. If this manufacturer or these suppliers should fail or not perform satisfactorily, our ability to commercialize and supply our products would be adversely affected; and
- if we are unable to obtain and maintain sufficient intellectual property protection for our products and technology, or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our products and build a strong brand identity may be impaired.

Corporate Information

We were formed in Delaware as a corporation on March 24, 2011 under the name Synthetic Genomics Solutions, Inc., as a wholly owned subsidiary of SGI. On February 26, 2013, we changed our name to SGI-DNA, Inc., and on March 31, 2020 we changed our name to Codex DNA, Inc. Our principal executive offices are located at 9535

Waples Street, Suite 100, San Diego, CA 92121-2993. Our telephone number at that address is (858) 228-4115. Our website address is www.codexdna.com. Information contained on our website is not incorporated by reference into this prospectus and should not be considered part of this prospectus.

We use the Codex DNA logo, BioXp, Gibson Assembly, RapidAMP, Vmax and other marks as trademarks in the United States and other countries. This prospectus contains references to our trademarks and service marks and to those belonging to other entities. Solely for convenience, trademarks and trade names referred to in this prospectus, including logos, artwork and other visual displays, may appear without the TM or ® symbol, but such references are not intended to indicate in any way that we will not assert, to the fullest extent possible under applicable law, our rights or the rights of the applicable licensor to these trademarks and trade names. We do not intend our use or display of other entities' trade names, trademarks or service marks to imply a relationship with, or endorsement or sponsorship of us by, any other entity.

Implications of Being an Emerging Growth Company and a Smaller Reporting Company

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, as amended (the JOBS Act). We will remain an emerging growth company until the earliest to occur of: (i) the last day of the fiscal year in which we have more than $1.07 billion in total annual gross revenue; (ii) the date we qualify as a "large accelerated filer" under the rules of the Securities and Exchange Commission (the SEC) with at least $700 million of equity securities held by non-affiliates; (iii) the date on which we have issued more than $1.0 billion in non-convertible debt securities during the prior three-year period; and (iv) the last day of the fiscal year ending after the fifth anniversary of our initial public offering.

An emerging growth company may take advantage of relief from certain reporting requirements and other burdens that are otherwise applicable generally to public companies. These provisions include:

- presenting only two years of audited financial statements and only two years of selected financial data;
- an exemption from compliance with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended (the Sarbanes-Oxley Act);
- reduced disclosure about our executive compensation arrangements in our periodic reports, proxy statements, and registration statements; and
- exemptions from the requirements of holding non-binding advisory votes on executive compensation or golden parachute arrangements.

As a result of this status, we have taken advantage of reduced reporting requirements in this prospectus and may elect to take advantage of other reduced reporting requirements in our future filings with the SEC. In particular, in this prospectus, we have provided only two periods of audited financial statements (the period March 8, 2019 through December 31, 2019 and the year ended December 31, 2020), with correspondingly reduced "Selected Financial Data" and "Management's Discussion and Analysis of Financial Conditions and Results of Operations" disclosure, and have not included all of the executive compensation related information that would be required if we were not an emerging growth company.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards, delaying the adoption of these accounting standards until they would apply to private companies. We have elected to avail ourselves of this exemption from new or revised accounting standards, and, therefore, we will not be subject to the same new or revised accounting standards at the same time as other public companies that are not emerging growth companies or those that have opted out of using such extended transition period, which may make comparison of our financial statements with such other public companies more difficult. We may take advantage of these reporting exemptions until we no longer qualify as an emerging growth company, or, with respect to adoption of certain new or revised accounting standards, until we irrevocably elect to opt out of using the extended transition period. As a result, our financial statements may not be comparable to companies that comply with new or revised accounting standards as of public company effective dates.

We are also a "smaller reporting company" as defined in the Securities Exchange Act of 1934, as amended (the Exchange Act). We may continue to be a smaller reporting company even after we are no longer an emerging growth company. We may take advantage of certain of the scaled disclosures available to smaller reporting companies and will be able to take advantage of these scaled disclosures for so long as our voting and non-voting common stock

held by non-affiliates is less than $250 million measured on the last business day of our second fiscal quarter, or our annual revenue is less than $100 million during the most recently completed fiscal year for which audited financial statements are available and our voting and non-voting common stock held by non-affiliates is less than $700 million.

THE OFFERING

The following summary contains basic information about the offering and our common stock and is not intended to be complete. It does not contain all the information that may be important to you. For a more complete description of our common stock, see "Description of Capital Stock."

Issuer	Codex DNA, Inc.
Common stock offered by us	6,666,665 shares.
Option to purchase additional shares	We have granted the underwriters an option for a period of 30 days to purchase up to 999,999 additional shares of our common stock.
Common stock to be outstanding immediately after this offering	28,228,934 shares (or 29,228,933 shares if the underwriters exercise their option to purchase additional shares in full).
Use of proceeds	We estimate that the net proceeds from this offering will be approximately $97.0 million, or $111.8 million if the underwriters exercise in full their option to purchase additional shares of common stock, based on an initial public offering price of $16.00 per share, and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us. We currently intend to use the net proceeds from this offering, together with our existing cash and available borrowings for general corporate purposes, including working capital, and funding our research and development and sales and marketing activities. We may use a portion of the net proceeds to expand our current business through strategic acquisitions or in-licenses of complimentary companies or technologies; however, we currently do not have any agreements or commitments to complete any such transactions and are not involved in negotiations regarding such transactions. We also may use a portion of the net proceeds to repay debt under our Loan and Security Agreement with Silicon Valley Bank. This debt bears interest at a per annum rate equal to the greater of (a) 4.0% above the prime rate and (b) 7.25%, and matures on January 1, 2024. See the section titled "Use of Proceeds" for more information.
Risk factors	See the section titled "Risk Factors" on page 14 for a discussion of factors you should carefully consider before deciding to invest in shares of our common stock.
Nasdaq Global Select Market (Nasdaq) trading symbol	"DNAY"

The number of shares of our common stock to be outstanding after this offering is based on 21,562,269 shares of our common stock outstanding as of March 31, 2021 (after giving effect to the automatic conversion of all of our outstanding convertible preferred stock and the automatic exercise of all of our outstanding warrants issued to SGI

into an aggregate of 16,315,096 shares of common stock immediately prior to the completion of this offering), and excludes:

- 484,630 shares of common stock issuable upon the exercise of options granted under our 2019 Stock Plan, as amended (the 2019 Plan) outstanding as of March 31, 2021, with a weighted-average exercise price of $0.59 per share;
- 662,108 shares of common stock issuable upon the exercise of options granted under our 2021 Equity Incentive Plan (the 2021 Plan) outstanding as of March 31, 2021, with an exercise price of $4.38 per share;
- 1,150,655 shares of common stock issuable upon the exercise of options granted under the 2021 Plan after March 31, 2021, with weighted average exercise price of $6.58 per share;
- 62,406 shares of common stock issuable upon the exercise of warrants to purchase shares issued to SVB Financial Group with an initial exercise price of $3.61 per share; and
- 4,621,202 shares of common stock reserved for future issuance under our equity compensation plans, consisting of:
  - 771,202 shares of common stock reserved for future issuance under our 2021 Plan as of March 31, 2021, which shares will be added to the shares to be reserved for future issuance under our 2021 Stock Incentive Plan (the 2021 SIP);
  - 3,500,000 shares of common stock reserved for future issuance under our 2021 SIP, which became effective in connection with this offering, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan; and
  - 350,000 shares of common stock reserved for future issuance under our 2021 Employee Stock Purchase Plan (the ESPP), which became effective in connection with this offering, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan.

Unless otherwise indicated, this prospectus assumes or gives effect to the following:

- a 3-for-1 reverse split of our capital stock and instruments convertible into our capital stock effected on June 11, 2021 with all share, option, warrant and per share information for all periods presented in this prospectus adjusted to reflect such reverse split;
- no exercise of outstanding options;
- no exercise by the underwriters of their option to purchase additional shares of common stock from us in this offering;
- the automatic conversion of all outstanding shares of our convertible preferred stock as of March 31, 2021, into an aggregate of 15,079,329 shares of our common stock immediately prior to the completion of this offering;
- the automatic exercise of all outstanding warrants issued to SGI into an aggregate of 1,235,767 shares of our common stock immediately prior to the completion of this offering; and
- the filing and effectiveness of our amended and restated certificate of incorporation and the adoption of our amended and restated bylaws, each of which will occur immediately prior to the completion of this offering.

SUMMARY CONSOLIDATED FINANCIAL DATA

The following tables set forth our summary consolidated financial data for the periods indicated. Pursuant to the authority of the SEC under Rules 3-06 and 3-13 of Regulation S-X under the Securities Act of 1933, as amended (the Securities Act), we have substituted audited consolidated financial statements for the period from March 8, 2019 through December 31, 2019 in place of audited consolidated financial statements for the fiscal year ended December 31, 2019. We have derived the consolidated statement of operations data for the period from March 8, 2019 through December 31, 2019 and the year ended December 31, 2020, and the consolidated balance sheet data as of December 31, 2020, from our audited consolidated financial statements included elsewhere in this prospectus. Because of the different length of time for which financial information is presented in the period ended December 31, 2019 compared to that presented for the year ended December 31, 2020, our financial results for those periods are not comparable. We have derived the statement of operations data for the three months ended March 31, 2020 and 2021, and the balance sheet data as of March 31, 2021 from our unaudited interim financial statements and related notes included elsewhere in this prospectus. Our unaudited interim financial statements were prepared in accordance with generally accepted accounting principles in the United States (GAAP), on the same basis as our audited financial statements and include, in the opinion of management, all adjustments, consisting of normal recurring adjustments, that are necessary for the fair presentation of the financial information set forth in those financial statements. Our historical results are not necessarily indicative of the results that should be expected for any future period, and our interim results are not necessarily indicative of our results for the full fiscal year. You should read the following summary consolidated financial data together with the more detailed information contained in “Selected Consolidated Financial Data,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and our consolidated financial statements and the related notes included elsewhere in this prospectus.

	Period from March 8, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020	Three Months Ended March 31, 2020	Three Months Ended March 31, 2021
Statement of Operations and Comprehensive Loss Data (in thousands):				
Revenue:				
Product sales	$ 3,555	$ 5,131	$ 1,048	$ 1,799
Royalties	1,250	1,445	339	528
	4,805	6,576	1,387	2,327
Cost of revenue	2,677	2,951	574	1,025
Gross profit	2,128	3,625	813	1,302
Operating expenses:				
Research and development	3,318	8,925	1,963	2,878
Sales and marketing	1,878	6,931	1,299	2,275
General and administrative	3,908	4,130	1,146	2,413
Total operating expenses	9,104	19,986	4,408	7,566
Loss from operations	(6,976)	(16,361)	(3,595)	(6,264)
Other income (expense):				
Interest expense	(1,490)	(690)	(192)	(241)
Change in fair value of derivative liabilities	62	(880)	(93)	(296)
Loss on extinguishment of debt	—	—	—	(618)
Other income (expense), net	102	(74)	—	(19)
Loss before provision for income taxes	(8,302)	(18,005)	(3,880)	(7,438)
Provision for income taxes	—	(5)	—	(4)
Net loss and comprehensive loss	(8,302)	(18,010)	(3,880)	(7,442)
Net loss attributable to common stockholders	$ (8,302)	$ (18,010)	$ (3,880)	$ (7,442)
Net loss per share attributable to common stockholders—basic and diluted	$ (1.66)	$ (3.60)	$ (0.78)	$ (1.43)
Weighted average common stock outstanding—basic and diluted	5,000,000	5,001,538	5,000,000	5,193,098
Pro forma net loss per share attributable to common stockholders—basic and diluted (unaudited)[1]		$ (0.82)		$ (0.34)
Pro forma weighted average common stock outstanding—basic and diluted (unaudited)[1]		21,316,634		21,508,194

(1) The unaudited pro forma basic and diluted weighted-average shares of common stock outstanding used in the calculation of unaudited pro forma basic and diluted net loss per share attributable to common stockholders for the year ended December 31, 2020 and the quarter ended March 31, 2021 have been prepared to give effect to (i) the automatic conversion of all outstanding shares of our convertible preferred stock into 15,079,329 shares of our common stock immediately prior to the closing of this offering and (ii) the automatic exercise of all outstanding warrants issued to SGI into an aggregate of 1,235,767 shares of our common stock immediately prior to the closing of this offering, as if this offering had occurred on the

later of the beginning of each period or the issuance date of the convertible preferred stock or warrants issued to SGI.

	As of March 31, 2021		
	Actual	Pro Forma[1]	Pro Forma as Adjusted[2]
Balance Sheet Data (in thousands):			
Cash	$ 17,834	$ 17,639	$ 115,434
Working capital[3]	16,313	16,118	113,913
Total assets	31,318	31,123	128,918
Long-term debt, net of discount, including current portion	14,372	14,372	14,372
Derivative liabilities	2,403	303	303
Convertible preferred stock	38,914	—	—
Total stockholders' equity (deficit)	(32,701)	8,118	105,086

(1) The pro forma column in the balance sheet data table above reflects (i) the automatic conversion of all shares of our convertible preferred stock into 15,079,329 shares of common stock and (ii) the automatic exercise of all outstanding warrants issued to SGI into an aggregate of 1,235,767 shares of our common stock immediately prior to the completion of this offering, as if such conversion and exercise had occurred on March 31, 2021.

(2) The pro forma as adjusted column in the balance sheet data table above gives effect to (i) the pro forma adjustments set forth above and (ii) the receipt of $97.0 million in net proceeds from the sale and issuance by us of shares of our common stock in this offering, based upon the initial public offering price of $16.00 per share, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

(3) We define working capital as current assets less current liabilities. See our financial statements included elsewhere in this prospectus for further details regarding our current assets and current liabilities.

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the risks described below, as well as the other information in this prospectus, including our consolidated financial statements and the related notes and the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" in this prospectus, before deciding whether to invest in our common stock. The occurrence of any of the events or developments described below could harm our business, financial condition, results of operations and prospects. In such an event, the market price of our common stock could decline, and you may lose all or part of your investment. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations and the market price of our common stock.

Risks Related to Our Business

We are an early-stage synthetic biology technology company with a history of net losses, which we expect to continue, and we may not be able to generate meaningful revenues or achieve and sustain profitability in the future.

We are an early-stage synthetic biology technology company, and we have incurred significant losses since separating from Synthetic Genomics, Inc. (SGI) and beginning to operate as a stand-alone entity in March 2019, and expect to continue incurring losses in the future. We incurred net losses of $8.3 million for the period from March 8, 2019 through December 31, 2019 and $18.0 million for the year ended December 31, 2020. We incurred net losses of $3.9 million and $7.4 million in the three months ended March 31, 2020 and 2021, respectively. As of March 31, 2021, we had an accumulated deficit of $33.8 million. These losses and accumulated deficit were primarily due to the substantial investments we have made to develop, commercialize and market our technology and products. Over the next several years, we expect to continue to devote a significant portion of our resources towards the continued development and commercialization of our synthetic biology products. These efforts may prove more costly than we currently anticipate. In addition, as a public company, we will incur significant legal, accounting, administrative, insurance and other expenses that we did not incur as a private company. Accordingly, we cannot assure you that we will achieve profitability in the future or that, if we do become profitable, we will remain profitable.

We have a limited operating history, which may make it difficult to evaluate the prospects for our future viability and predict our future performance.

Our prospects must be considered in light of the uncertainties, risks, expenses, and difficulties frequently encountered by companies in their early stages of operations. For example, our management team has had a limited time working together and many of our key employees are new to our company. Predictions about our future success or viability are highly uncertain and may not be as accurate as they could be if we had a longer operating history or a longer history of successfully developing and commercializing products.

In addition, as a business with a limited operating history, we may encounter unforeseen expenses, difficulties, complications, delays and other known and unknown obstacles. We have encountered in the past, and will encounter in the future, risks and uncertainties frequently experienced by growing companies with limited operating histories in emerging and rapidly changing industries. If our assumptions regarding these risks and uncertainties, which we use to plan and operate our business, are incorrect or change, or if we do not address these risks successfully, our results of operations could differ materially from our expectations, and our business, financial condition and results of operations could be adversely affected.

Our operating results may fluctuate significantly in the future, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or any guidance we may provide.

Our quarterly and annual operating results may fluctuate significantly, which makes it difficult for us to predict our future operating results. These fluctuations may occur due to a variety of factors, many of which are outside of our control, including, but not limited to:

- the level of demand for our commercialized products, which may vary significantly from period to period;

- our ability to drive adoption of our products in our target markets and our ability to expand into any future target markets, including internationally;
- the prices at which we will be able to sell our products;
- the volume and mix of our sales between our BioXp systems, BioXp kits, benchtop reagents, other products and biofoundry services, or changes in the manufacturing or sales costs related to our products;
- the length of time of the sales cycle for purchases of, or royalties on, our products, including lead time needed to procure critical raw materials from suppliers and finished goods from our third-party contract suppliers and manufacturers;
- the extent to which we succeed in developing and commercializing new products;
- potential shortages, or increases in costs, of our product components or raw materials, or other disruptions to our supply chain;
- the timing and cost of, and level of investment in, research and development and commercialization activities relating to our products, which may change from time to time;
- our ability to successfully manage relationships with customers, third-party distributors and suppliers of our products;
- the timing and amount of expenditures that we may incur to develop, commercialize or acquire additional products and technologies;
- changes in governmental funding sources;
- cyclical changes to the research and development budgets within the pharmaceutical, biotechnology and industrial segments of synthetic biology;
- seasonal spending patterns of our customers;
- the expenses needed to attract and retain skilled personnel;
- future accounting pronouncements or changes in our accounting policies;
- the outcome of any litigation or governmental investigations involving us, our industry or both;
- higher than anticipated service, replacement and warranty costs;
- the costs associated with being a public company;
- changes in the regulatory environment;
- the impact of the COVID-19 pandemic on the economy, investment in synthetic biology and research industries, our business operations, and resources and operations of our customers, suppliers, and distributors; and
- general industry, economic and market conditions and other factors, including factors unrelated to our operating performance or the operating performance of our competitors.

The cumulative effects of the factors discussed above could result in large fluctuations and unpredictability in our quarterly and annual operating results. As a result, comparing our operating results on a period-to-period basis may not be meaningful. Investors should not rely on our past results as an indication of our future performance.

This variability and unpredictability could also result in our failing to meet the expectations of industry or financial analysts or investors for any period of time. If our operating results fall below the expectations of analysts or investors or below any guidance we may provide, or if the guidance we provide is below the expectations of analysts or investors, it could cause the market price of our common stock to decline.

We may not be able to achieve or maintain satisfactory pricing and margins for our products.

The synthetic biology industry has a history of price competition, and we can give no assurance that we will be able to achieve satisfactory prices for our products or maintain prices at the levels we have historically achieved. If we are forced to lower the price we charge for our products, our gross margins will decrease, which will adversely affect our ability to invest in and grow our business. We believe that we will continue to be subject to significant pricing pressure, which may limit our ability to maintain or increase our prices.

Our cost of goods is dependent upon the pricing we are able to negotiate with our suppliers of raw materials, instruments and components. In particular, we have experienced price increases for certain raw materials, such as oligonucleotides, and expect these raw materials to continue to be in high demand. We do not have long term supply

contracts for any of our raw materials. If our costs increase and we are unable to offset such increases with a proportionate increase in our prices, our margins would erode, which would harm our business and results of operations.

We may need to raise additional capital to fund our operations, which may be unavailable to us or, even if consummated, may cause dilution or place significant restrictions on our ability to operate.

Based on our current plans, we believe that our current cash, available borrowings, the net proceeds from this offering and anticipated cash flow from operations will be sufficient to meet our anticipated cash requirements for at least twelve months from the date of this prospectus. As a result, we have disclosed that there is substantial doubt about our ability to continue as a going concern. If our available cash resources, net proceeds from this offering and anticipated cash flow from operations are insufficient to satisfy our liquidity requirements, including because of lower demand for our products or the realization of other risks described in this prospectus, we may be required to raise additional capital prior to such time through issuances of equity or convertible debt securities, or seek debt financing or other form of third-party funding. Following the offering, we believe our cash and additional borrowings available under our Loan and Security Agreement with Silicon Valley Bank (SVB), dated as of March 4, 2021 (the 2021 Loan Agreement), will be sufficient to meet our capital requirements and fund our operations for at least the next 12 months following this offering. However, we have based these estimates on assumptions that may prove to be incorrect, and we could spend our available financial resources much faster than we currently expect.

We may seek to raise additional capital in the future to expand our business, to pursue strategic investments, to take advantage of financing opportunities or for other reasons, including:

- increasing our sales and marketing and other commercialization efforts to drive market adoption of our products;
- funding development and marketing efforts of our current or any future products;
- expanding our technologies into additional markets;
- acquiring, licensing or investing in technologies and other intellectual property rights;
- acquiring or investing in complementary businesses or assets; and
- financing capital expenditures and general and administrative expenses.

Our present and future funding requirements will depend on many factors, including:

- our rate of progress in increasing penetration of our target markets with current and new products, and the cost of the sales and marketing activities associated with establishing adoption of our products;
- our rate of progress in, and cost of research and development activities associated with, products in research and development; and
- the effect of competing technological and market developments.

If we are unable to obtain adequate financing or financing on terms satisfactory to us when needed, our ability to continue to pursue our business objectives and to respond to business opportunities, challenges, or unforeseen circumstances could be significantly limited, and could have a material adverse effect on our business, financial condition, results of operations and prospects.

The various ways we could raise additional capital carry potential risks. If we raise funds by issuing equity securities, dilution to our stockholders would result. If we raise funds by issuing debt securities, those debt securities would have rights, preferences and privileges senior to those of holders of our common stock. The terms of debt securities issued or borrowings pursuant to a credit agreement could impose significant restrictions on our operations. If we raise funds through collaborations or licensing arrangements, we might be required to relinquish significant rights to our technologies or products or grant licenses on terms that are not favorable to us.

Our Loan and Security Agreement with Silicon Valley Bank contains restrictive covenants that limit our operations.

Pursuant to the terms of the 2021 Loan Agreement, we have borrowed $15.0 million and may become eligible to borrow up to an additional $5.0 million, at SVB's sole option. If we are not in compliance with the financial covenants of the 2021 Loan Agreement, it is unlikely that SVB will offer to extend the additional $5.0 million of debt financing.

The 2021 Loan Agreement contains various restrictive covenants and other restrictions, including, among other things:

- a minimum revenue covenant;
- on our ability to transfer all or part of our business or property, except for inventory in the ordinary course of business, surplus or obsolete equipment, permitted liens, transfers of cash permitted by the agreement or transfers involving less than $250,000 in any fiscal year;
- on our ability to change our business or move our offices;
- on our ability to liquidate or dissolve or merge or consolidate with another entity, or acquire another entity;
- on our ability to incur debt or encumber our assets; and
- on our ability to pay dividends or make investments, other than permitted investments.

These restrictions may restrict our current and future operations, particularly our ability to respond to certain changes in our business or industry or take future actions. See the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources” for additional information.

Our ability to meet these restrictive covenants can be impacted by events beyond our control. The 2021 Loan Agreement provides that our breach or failure to satisfy certain covenants constitutes an event of default. Upon the occurrence of an event of default, our lenders could elect to declare all amounts outstanding under the 2021 Loan Agreement to be immediately due and payable. If the outstanding debt under the 2021 Loan Agreement was to be accelerated, we may not have sufficient cash on hand to repay it, which would have an immediate adverse effect on our business and operating results. This could potentially cause us to cease operations and result in a complete loss of your investment in our common stock.

We depend on our key personnel and other highly qualified personnel, and if we are unable to recruit, train and retain our personnel, we may not achieve our goals.

Our future success depends upon our ability to recruit, train, retain and motivate key personnel. Our senior management team, including Todd R. Nelson, Ph.D., our President and Chief Executive Officer; Daniel Gibson, Ph.D., our Chief Technology Officer; Jennifer I. McNealey, our Chief Financial Officer; Timothy E. Cloutier, our Senior Vice President, Commercial Operations; and Laurence Warden, our Vice President of Engineering and Instrumentation, is critical to our vision, strategic direction, product development and commercialization efforts. We have entered into at-will employment agreements with each of Dr. Nelson, Dr. Gibson, Ms. McNealey, Dr. Cloutier and Mr. Warden, and such agreements may be terminated by either party at any time without cause. The departure of one or more of our executives officers, senior management team members or other key employees could be disruptive to our business unless we are able to hire qualified successors. We do not maintain “key man” life insurance on our senior management team.

Our continued growth depends, in part, on attracting, retaining and motivating qualified personnel, including highly trained sales personnel with the necessary scientific background and ability to understand our systems at a technical level to effectively identify and sell to potential new customers. New hires require significant training and, in most cases, take significant time before they achieve full productivity. Our failure to successfully integrate these key personnel into our business could adversely affect our business. In addition, competition for qualified personnel is intense, particularly in the San Diego area, where our operations are headquartered. We compete for qualified scientific and information technology personnel with other life science and information technology companies as well as academic institutions and research institutions.

We do not maintain fixed-term employment contracts with any of our employees. As a result, our employees could leave our company with little or no prior notice and would be free to work for a competitor. Due to the complex and technical nature of our products and technology and the dynamic market in which we compete, any failure to attract, train, retain and motivate qualified personnel could materially harm our business, results of operations, financial condition and prospects.

If we do not sustain or successfully manage our anticipated growth, our business and prospects will be harmed.

Our anticipated growth will place significant strains on our management, operational and manufacturing systems and processes, sales and marketing team, financial systems and internal controls and other aspects of our business. As of June 1, 2021, we had 101 employees in the United States and seven full-time employees internationally. We expect that we will need to hire additional accounting, finance and other personnel in connection with our becoming, and our efforts to comply with the requirements of being, a public company. Once public, our management and other personnel will need to devote a substantial amount of time towards maintaining compliance with these requirements and effectively manage these growth activities. We may face challenges integrating, developing and motivating our rapidly growing employee base. To effectively manage our growth, we must continue to improve our operational and manufacturing systems and processes, our financial systems and internal controls and other aspects of our business and continue to effectively expand, train and manage our personnel. Our ability to successfully manage our expected growth is uncertain given the fact that we have only been in operation as a stand-alone company since March 2019. As our organization continues to grow, we will be required to implement more complex organizational management structures, and we may find it increasingly difficult to maintain the benefits of our corporate culture, including our ability to quickly develop and launch new and innovative products. If we do not successfully manage our anticipated growth, our business, results of operations, financial condition and prospects will be harmed.

A significant portion of our revenue in the near term will be generated from the sale of our current products.

While we anticipate that a substantial contributor to our growth will come from new product introductions, we expect that we will generate in the near term, a significant portion of our revenue from the sale of our BioXp systems and the increased sale of BioXp kits and benchtop reagents to our current customers. There can be no assurance that our current customers will increase their BioXp kit and benchtop reagent purchases. There can also be no assurance that we will be able to design other products that will meet the expectations of our customers or that any of our future products will become commercially viable. As technologies change in the future for synthetic biology research tools, we will be expected to upgrade or adapt our products in order to maintain the latest technology.

While concentrating our research and development and commercialization efforts on our synthetic biology solution, we may forego other opportunities that may provide greater revenue or be more profitable. If our research and product development efforts do not result in additional commercially viable products within the anticipated timelines, or at all, our business and results of operations will be adversely affected. Any delay or failure by us to develop and release our new products or product enhancements would have a substantial adverse effect on our business and results of operations.

If we fail to introduce compelling new products, our revenues and our prospects could be harmed.

Our ability to attract new customers and increase revenue from existing customers will depend in large part on our ability to introduce compelling new products and pursue new market opportunities that develop as a result of technological and scientific advances. The success of any enhancement to our existing commercialized products or introduction of new products depends on several factors, including timely completion and delivery, cost-effective development and manufacturing, competitive pricing, adequate quality testing, integration with existing technologies, appropriately timed and staged introduction and overall market acceptance. Any new product that we develop may not be introduced in a timely or cost-effective manner, may contain defects, errors, vulnerabilities or bugs, or may not achieve the market acceptance necessary to generate significant revenue.

The typical development cycle of new synthetic biology products can be lengthy and complicated, and may require new scientific discoveries or advancements, considerable resources and complex technology and engineering. Such developments may involve external suppliers and service providers, making the management of development projects complex and subject to risks and uncertainties regarding timing, timely delivery of required components or services and satisfactory technical performance of such components or assembled products. If we do not achieve the required technical specifications or successfully manage new product development processes, or if development work is not performed according to schedule, then the development of such new technologies or products may be adversely impacted.

In addition, there is extensive competition in the synthetic biology industry, which is characterized by rapid and significant technological changes, frequent new product introductions and enhancements and evolving industry

demands and standards. Our future success will depend on our ability to maintain a competitive position, including technologically superior and less expensive products compared to those of our competitors. Technological development by others may result in our technologies, as well as products developed using our technologies, becoming obsolete. If we are unable to successfully develop new products, compete with alternative products, or otherwise gain and maintain market acceptance, our business, results of operations and financial condition could be harmed.

Rapidly changing technology in synthetic biology could make the products we are developing obsolete unless we continue to develop and manufacture new and improved products and pursue new market opportunities.

Our industry is characterized by rapid and significant technological changes, frequent new product introductions and enhancements and evolving industry standards. The preferences and needs of our customers may change over time. Our future success will depend on our ability to continually improve the products we are developing, to develop and introduce new products that address the evolving needs of our customers on a timely and cost-effective basis, and to pursue new market opportunities that develop as a result of technological and scientific advances. These new market opportunities may be outside the scope of our proven expertise or in areas which have unproven market demand, and the utility and value of new products developed by us may not be accepted in the markets served by the new products. Our inability to gain market acceptance of new products could harm our future operating results. Our future success also depends on our ability to manufacture these new and improved products to meet customer demand in a timely and cost-effective manner, including our ability to resolve manufacturing issues that may arise as we commence production of these complex products. Unanticipated difficulties or delays in replacing existing products with new products we introduce or in manufacturing improved or new products in sufficient quantities to meet customer demand could diminish future demand for our products and harm our future operating results.

We may acquire other companies or technologies, which could divert our management's attention, result in additional dilution to our stockholders, disrupt our operations and harm our operating results.

We may in the future seek to acquire or invest in businesses, applications or technologies that we believe could complement or expand our current or future products, enhance our technical capabilities or otherwise offer growth opportunities. The pursuit of potential acquisitions may divert the attention of management and cause us to incur various costs and expenses in identifying, investigating and pursuing suitable acquisitions, whether or not they are consummated. We may not be able to identify desirable acquisition targets or be successful in entering into an agreement with any particular target or obtain the expected benefits of any acquisition or investment.

To date, the growth of our operations has been organic, and we have limited experience in acquiring other businesses or technologies. We may not be able to successfully integrate acquired personnel, operations and technologies, or effectively manage the combined business following an acquisition. Acquisitions could also result in dilutive issuances of equity securities, the use of our available cash, or the incurrence of debt, which could harm our operating results. In addition, if an acquired business fails to meet our expectations, our operating results, business and financial condition may suffer.

If we experience a significant disruption in our information technology systems or breaches of data security, our business could be adversely affected.

We rely, and will continue to rely, on multiple information technology systems to operate the systems that allow our company to function, including cloud-based and on-premises information technology systems. We rely extensively on information technology systems to facilitate our principal company activities, including to operate the cloud-based platform on which the services offered to our customers rely. In addition, we also use information technology systems for a variety of key business functions, including to keep financial records, facilitate our research and development initiatives, manage our manufacturing operations, maintain quality control, fulfill customer orders, maintain corporate records, communicate with staff and external parties, and operate other critical functions.

Like all companies that rely on information technology systems, our information technology systems and those of our vendors and partners are potentially vulnerable to failures of confidentiality, integrity, and availability. Such failures could include, for example, malicious intrusion, corruption of data, and disruptive events, including but not limited to natural disasters and catastrophes. Such failures, if they occur, could compromise company, vendor or partner systems and employee, company, vendor, or partner data. A wide range of cyber attacks, including cyber intrusions, denial of service, and other malicious internet-based activity, such as social engineering and phishing scams,

continue to increase. Cloud-based platform providers of services have been and are expected to continue to be targeted by a variety of threat actors, including sophisticated nation-state and nation-state-supported actors. Such threat actors use attack methods that change frequently, are increasingly complex and sophisticated, including social engineering and phishing scams, and can originate from a wide variety of sources, including insider threats or external actors. In addition to traditional computer “hackers,” malicious code, such as viruses and worms, employee theft or misuse, denial-of-service attacks and sophisticated nation-state and nation-state supported actors now engage in attacks, including advanced persistent threat intrusions. In addition, we have not finalized our information technology and data security policies and procedures and therefore, our information technology systems may be more susceptible to such failures and attacks than if such security policies and procedures were finalized. Despite our efforts to create security barriers to such threats, it is virtually impossible for us to entirely mitigate these risks and there is no guarantee that our efforts are or will be adequate to safeguard against all such threats. Moreover, despite our current and future efforts, it is possible that we may not be able to anticipate, detect, appropriately react and respond to, or implement effective preventative measures against, all cybersecurity incidents. Such cybersecurity incidents can be difficult to detect and any delay in identifying such incidents may lead to increased harm and legal exposure of the type described below.

If our security measures, or those of our vendors and partners, are compromised for any reason, including negligence, error, or malfeasance, our principal company activities could cease to function, or be significantly degraded, until such cybersecurity incidents are remediated. Further, our business could be harmed, our reputation could be damaged, and we could become subject to regulatory inquiries or litigation, all of which could result in significant liability. In addition, if we were to experience a prolonged system disruption in our information technology systems or those of certain of our vendors and partners, it could negatively impact our ability to serve our customers, which could adversely impact our business, financial condition, results of operations and prospects. If operations at our facilities were disrupted and could not be promptly restored, such disruption could cause a material disruption in our business, financial condition, results of operations, and prospects. Moreover, there could be public announcements regarding any cybersecurity incidents and, if securities analysts or investors perceive these announcements to be negative, it could, among other things, have a material adverse effect on our business, reputation, financial condition, results of operations and prospects.

Our information technology systems, and those of our vendors and partners, are potentially vulnerable to cybersecurity incidents such as data security breaches, which could lead to the loss and exposure of information, including personal, sensitive, and confidential data, to unauthorized persons, resulting in a data security breach. Any such data security breaches could, among other things, lead to the loss of trade secrets or other intellectual property, or could lead to the exposure of personal information, including sensitive personal information, of our employees, customers and others, any of which could have a material adverse effect on our business, reputation, financial condition, results of operations and prospects. In addition, any such data security breaches could result in legal claims or proceedings, regulatory inquiries, investigations, or actions, and other types of liability under laws that protect the privacy and security of personal information, including federal, state and foreign data protection, privacy, data security, and consumer protection regulations, violations of which could result in significant penalties and fines. Additionally, the introduction and passage of new privacy laws, including but not limited to the California Privacy Rights Act (CPRA), which was approved by California voters in the election on November 3, 2020 and will modify the California Consumer Privacy Act (CCPA), creates further uncertainty and may require us to incur additional costs and expenses in an effort to comply. In addition, U.S. and international laws and regulations that have been applied to protect user privacy (including laws regarding unfair and deceptive practices in the U.S. and GDPR in the EU) may be subject to evolving interpretations or applications. This area of law is continuing to evolve and is subject to significant uncertainty, which may require us to incur additional costs and expenses in order to comply. Furthermore, responding to a legal claim or proceeding or a regulatory inquiry, investigation, or action, regardless of its merit, could be costly, divert management’s attention and harm our reputation.

The cost of protecting against, investigating, mitigating and responding to cybersecurity incidents and data security breaches, and complying with applicable breach notification obligations to individuals, regulators, vendors, partners, and others can be significant. As threats related to cybersecurity incidents and data security breaches continue to evolve, we may be required to expend significant additional resources to continue to modify or enhance our protective measures or to detect, appropriately react to, and respond to such cybersecurity incidents and data security breaches. The inability to implement, maintain and upgrade adequate safeguards could have a material adverse effect on our business, financial condition, results of operations and prospects. Should such disruptions occur, our current insurance policies may not be adequate to compensate us for the potential costs and other losses

arising from such disruptions, failures, or security breaches and it is possible that an insurer could deny coverage on any future claim. In addition, such insurance may not be available to us in the future on economically reasonable terms or at all. The successful assertion of one or more large claims against us that exceed available insurance coverage, or the occurrence of changes in our insurance policies, including premium increases or the imposition of large deductible or co-insurance requirements, could have a material adverse effect on our business, financial condition, results of operations and prospects.

A customer may unintentionally misuse our products or a bad actor may intentionally use our products with intent to create harm and, in either case, third parties may seek to hold us liable for the resulting harm.

All orders for our products that we receive are processed through a security filter. We verify that the shipping addresses of our customers are valid, screen the customer versus known agent lists and comply in all material respects with the know your customer rules. Despite these precautions it is possible that one of our customers may unintentionally misuse our products or a bad actor may attempt to misuse our products to create harm. If misuse of our products were to occur, the terms and conditions of our invoices may be insufficient to protect us from liability. Any indemnification that our customers are required to provide to us may be insufficient to cover the costs and damages resulting from the misuse of our products. Further, any product liability insurance we may obtain could specifically exclude bad acts of our customers from coverage or coverage limits may be insufficient to protect us from the amount of the liability we could incur. Any unintentional or intentional misuse of our products could result in liability or require us to expend costs to defend ourselves, may not be covered by insurance and may have a material and adverse effect on our business or results of operations.

Our recurring losses from operations have raised substantial doubt regarding our ability to continue as a going concern.

As shown in the financial statements included in this prospectus, we have had recurring losses from operations and, as a result, our independent registered public accounting firm has expressed substantial doubt concerning our ability to continue as a going concern and has included an explanatory paragraph in its report on our financial statement as of and for the year ended December 31, 2020 with respect to this uncertainty. Future reports on our financial statements may also include an explanatory paragraph with respect to our ability to continue as a going concern. We have incurred significant losses since our inception and have never generated profit, and it is possible we will never generate profit. There is no assurance that other financing will be available when needed to allow us to continue as a going concern. The perception that we may not be able to continue as a going concern may cause others to choose not to deal with us due to concerns about our ability to meet our contractual obligations. If we are unable to continue as a going concern, you could lose all or part of your investment.

Risks Related to Supply, Manufacturing and Distribution of Our Products

We rely on a single contract manufacturer to manufacture and supply our instruments and single source suppliers for certain components of our instruments and raw materials. If this manufacturer or these suppliers should fail or not perform satisfactorily, our ability to commercialize and supply our products would be adversely affected.

We do not own or operate, and currently do not plan to own or operate, facilities for manufacturing our BioXp systems. We rely and expect to continue to rely on third parties for the production and packaging of our instruments. We rely on a single contract manufacturer, D&K Engineering, Inc. (D&K), located in San Diego, to manufacture and supply our BioXp systems. Since our contract with D&K does not commit it to carry inventory or make available any particular quantities of instruments outside of accepted purchase orders, D&K may give other customers' needs higher priority than ours, and we may not be able to obtain adequate supplies in a timely manner or on commercially reasonable terms. We do not have a long-term supply agreement with D&K. Instead, we typically issue purchase orders for our BioXp systems on a six-month rolling basis and we currently maintain less than 30 days of inventory of BioXp systems. Our purchase orders with D&K are terminable without cause upon sixty days' notice in writing to the other party.

Our reliance on a third party for the manufacture of our instruments increases the risk that we will not have sufficient quantities of our instruments or will not be able to obtain such quantities at an acceptable cost or quality, which could delay, prevent or impair commercialization of our instruments. In the event it becomes necessary to utilize a different contract manufacturer for our BioXp systems, we would experience additional costs, delays and difficulties as a result of having to identify and enter into an agreement with a new manufacturer. We would also have to

prepare such new manufacturer to meet the technical and logistical requirements associated with manufacturing our instruments, and our business could suffer as a result.

In addition, certain of the components used in our instruments are sourced from limited or single-source suppliers. If we were to lose such suppliers, there can be no assurance that we will be able to identify or enter into agreements with alternative suppliers on a timely basis on acceptable terms, if at all. An interruption in our ability to sell and deliver instruments to customers could occur if we encounter delays or difficulties in securing these components, or if the quality of the components supplied do not meet our specifications, or if we cannot then obtain an acceptable substitute. If any of these events occur, our business, results of operations, financial condition and prospects could be harmed.

We also rely on third parties for certain components of our BioXp kits and benchtop reagents, including the nucleotides we use in our BioXp kits, which are primarily sourced from Integrated DNA Technologies, Inc. (IDT), a division of Danaher Corporation. Recently, supply issues with IDT have caused us to rely on an alternative supplier for these components and raw materials. We cannot guarantee that we will be able to source these materials at similar quantities and on similar terms if our preferred suppliers were to become unable or unwilling to fulfill our requirements.

Our reliance on third party manufacturers subjects us to risks associated with their businesses and operations. This dependence on others may harm our ability to develop and commercialize our products on a timely and competitive basis. Any such failure may result in decreased product sales and lower product revenue, which would harm our business. For example, even if we have agreements with third parties, they may not perform their obligations to us and they may be unable or unwilling to establish or increase production capacity commensurate with our needs. Disputes may also arise between us and our suppliers that result in the delay or termination of commercialization or that result in costly litigation or arbitration that diverts management's attention and resources. Also, third party manufacturers are subject to their own operational and financial risks that are outside of our control, and potentially their control also, that may cause them to suffer liquidity or operational problems and that could interfere with their business operations. For example, our suppliers have also been impacted by the COVID-19 pandemic and some of our raw materials and components originate in China. We have also experienced supply delays for critical hardware, instrumentation and supplies that we use for product development, as these other components and supplies are otherwise diverted to COVID-19-related testing and other uses.

We have limited experience producing and supplying our products. We may be unable to consistently manufacture or source our products to the necessary specifications or in quantities necessary to meet demand on a timely basis and at acceptable performance and cost levels.

Our BioXp systems, BioXp kits and benchtop reagents comprise an integrated solution with many different components that work together. As such, a quality defect in a single component can compromise the performance of the entire system. In order to successfully generate revenue from this product line, we need to supply our customers with products that meet their expectations for quality and functionality in accordance with established specifications on a timely basis. Our instruments are manufactured by D&K using complex processes, sophisticated equipment and strict adherence to specifications and quality systems procedures. Given the complexity of this instrumentation, individual units may occasionally require additional installation and service prior to becoming available for customer use.

As we continue to scale commercially and develop new products, and as our products incorporate increasingly sophisticated technology, it will become more difficult to ensure our products are produced in the necessary quantities while maintaining quality. There is no assurance that we or our third-party manufacturers will be able to continue to manufacture our products so that our technology consistently achieves the product specifications and produces results with acceptable quality. In addition, our BioXp kits and benchtop reagents have a limited shelf life, after which their performance is not ensured and many of our products must be shipped and stored at controlled temperatures. Shipment of BioXp kits and benchtop reagents that exceed their shelf life or shipment of defective products to customers may result in recalls and warranty replacements, which would increase our costs and may damage our reputation, and depending upon current inventory levels and the availability and lead time for additional inventory, could lead to availability issues. Any future design issues, unforeseen manufacturing problems, such as contamination of our or our manufacturers' facilities, equipment malfunctions, aging components, quality issues with components and materials sourced from third-party suppliers, or failures to strictly follow procedures or meet

specifications, may have a material adverse effect on our brand, business, reputation, results of operations and financial condition and could result in us or our third-party manufacturers losing International Organization for Standardization (ISO) or quality management certifications. If our third-party manufacturers fail to maintain ISO quality management certifications, our customers might choose not to purchase products from us.

In addition, as we scale our commercial operations, we will also need to make corresponding improvements to other operational functions, such as our customer support, service and billing systems, compliance programs and internal quality assurance programs. We cannot assure you that any increases in scale, related improvements and quality assurance will be successfully implemented or that appropriate personnel will be available. As we develop additional products, we may need to bring new equipment on-line, implement new systems, technology, controls and procedures and hire personnel with different qualifications.

An inability to manufacture products and components that consistently meet specifications, in necessary quantities, at commercially acceptable costs and without significant delays, may have a material adverse effect on our business, results of operations, financial condition and prospects.

We must continue to secure and maintain sufficient and stable supplies of components and raw materials.

Certain disruptions in supply of, and changes in the competitive environment for, components and raw materials integral to the manufacturing of our products may adversely affect our profitability. We use a broad range of materials and supplies in our products. A significant disruption in the supply of these materials could decrease production and shipping levels, materially increase our operating costs and materially and adversely affect our revenues and profit margins. Shortages of materials or interruptions in transportation systems, labor strikes, work stoppages, war, acts of terrorism or other interruptions to or difficulties in the employment of labor or transportation in the markets in which we purchase materials, components and supplies for the production of our products, in each case, may adversely affect our ability to maintain production of our products and achieve profitability. Unforeseen discontinuation or unavailability of certain components, such as enzymes or nucleotides, each of which we currently primarily source from single supplier, could cause backorders as we modify our product specifications to accommodate replacement components. If we were to experience a significant or prolonged shortage of critical components from any of our suppliers and could not procure the components from other sources, we would be unable to manufacture our products and ship them to our customers in a timely fashion, or at all, which would adversely affect our sales, margins and customer relations.

Our products could have defects or errors, giving rise to claims against us, adversely affecting market adoption and negatively impacting our business, financial condition, and results of operations.

Our products utilize novel and complex technology related to writing synthetic DNA and mRNA and may develop or contain undetected defects or errors. We cannot assure you that material performance problems, defects, or errors will not arise, and as we commercialize our products, these risks may increase. We provide warranties at the point of sale that our products will meet performance expectations and will be free from defects. We also provide extended warranties at an additional cost to the customer. The costs incurred in correcting any defects or errors may be substantial and could adversely affect our operating margins.

In manufacturing our products, we depend upon third parties for the supply of our instruments and various components, many of which require a significant degree of technical expertise to produce. If our suppliers fail to make our products or their components to specification or provide defective products to us, and our quality control tests and procedures fail to detect such errors or defects, or if we or our suppliers use defective materials or workmanship in the manufacturing process, the reliability and performance of our products will be compromised.

If our products contain defects, we may experience:

- a failure to achieve market acceptance for our products;
- loss of customer orders and delay in order fulfillment;
- damage to our reputation;
- increased warranty and customer service and support costs due to product repair or replacement;
- product recalls or replacements;
- inability to attract new customers;

- diversion of resources from our manufacturing and research and development departments into our service department; and
- legal claims against us, including product liability claims, which could be costly and time consuming to defend and result in substantial damages.

If we become subject to product liability claims, we may be required to pay damages out of our cash reserves.

Our business exposes us to potential product liability claims that are inherent in the production, marketing and sale of biotechnological and genetic products. We do not currently have product liability insurance and any product liability claim, or recall of one of our products, would have to be paid out of our cash reserves.

Shipping is a critical part of our business. Any changes in our shipping arrangements or damages or losses sustained during shipping could adversely affect our business, financial condition, results of operations and prospects.

We currently rely on commercial carriers for our shipping. If we are not able to negotiate acceptable pricing and other terms with these carriers, or if they experience performance problems or other difficulties, it could negatively impact our operating results and our customers' experience. If a product is damaged in transit, it may result in a substantial delay in the fulfillment of the customer's order, and depending on the type and extent of the damage and whether the incident is covered by insurance, it may result in a substantial financial loss to us. If our products are not delivered in a timely fashion or are damaged or lost during the delivery process, our customers could become dissatisfied and cease using our products or services, which would adversely affect our business, financial condition, results of operations and prospects.

Our business depends on our ability to quickly and reliably deliver our products and in particular, our BioXp kits and benchtop reagents, to our customers. Certain of these products are perishable and must be kept below certain temperatures and, therefore, we ship these products on dry ice and only ship such products on certain days of the week to reach customers without spoilage. Disruptions in the delivery of these products, whether due to labor disruptions, bad weather, natural disasters, terrorist acts or threats or for other reasons could result in our customers receiving products that are not fit for use, and if used, could result in inaccurate results or ruined experiments. While we work with customers to replace any products that are impacted by delivery disruptions, our reputation and our business may be adversely impacted even if we replace products free of charge. In addition, if we are unable to continue to obtain expedited delivery services on commercially reasonable terms, our operating results may be adversely affected.

In addition, should our commercial carriers encounter difficulties in delivering our products to customers, particularly at the end of any financial quarter, it could adversely impact our ability to recognize revenue for those products in that period and accordingly adversely affect our financial results for that period.

Risks Related to Our Sales, Marketing and Customer Support

We have limited experience in sales and marketing of our products.

We have limited experience in sales and marketing our products. Our ability to achieve profitability depends on our being able to attract customers for our products. To meet our sales objectives, we must expand our sales, marketing, distribution and customer service and support capabilities with personnel with the appropriate technical expertise. In undertaking expansion efforts, we will face a number of risks relating to:

- our ability to attract, retain and manage the sales, marketing and customer service and support personnel necessary to commercialize and gain market acceptance for our technology;
- the time and cost of maintaining specialized sales, marketing and customer service and support personnel; and
- the relative success of our sales, marketing and customer service and support personnel.

We currently enlist, and may in the future seek to enlist one or more third parties to assist with sales, distribution and customer service and support. There is no guarantee that we will be successful in attracting effective sales and distribution partners or that we will be able to enter into such arrangements on favorable terms. If our sales and marketing efforts, or those of any third-party sales and distribution partners, are not successful, our products may not gain market acceptance, which could materially impact our business operations.

A substantial proportion of our sales are through distributors, and we do not control their efforts to sell our products. If our relationships with these third-party distributors deteriorate, or if these third-party distributors fail to sell our products or engage in activities that harm our reputation, our financial results may be negatively affected.

Our current sales model includes direct sales in North America and parts of Europe, and relationships with third party distributors in other parts of Europe and various countries in the Middle East, Africa and Asia Pacific regions. We believe that our reliance on distributors improves the economics of our business, as we do not carry the high fixed costs of a direct sales force in many of the countries in which our products are sold. If we are unable to maintain or enter into such distribution arrangements on acceptable terms, or at all, we may not be able to successfully commercialize our products in certain countries.

Furthermore, distributors can choose the level of effort that they apply to selling our products relative to others in their portfolio. The selection, training, and compensation of distributors' sales personnel are within their control rather than our own and may vary significantly in quality from distributor to distributor. They may experience their own financial difficulties, or distribution relationships may be terminated or allowed to expire, which could increase the cost of or impede commercialization of our products in applicable countries. Disputes may also arise between us and our distributors that result in the delay or termination of commercialization or that result in costly litigation or arbitration that diverts management's attention and resources. Distributors may not properly maintain or defend our intellectual property rights or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our proprietary information or expose us to potential litigation. Distributors could move forward with competing products developed either independently or in collaboration with others, including our competitors.

In addition, although our contract terms require our distributors to comply with all applicable laws regarding the sale of our products, including regulatory labelling, protection of personal data, U.S. export regulations and the U.S. Foreign Corrupt Practices Act (FCPA), we may not be able to ensure proper compliance. If our distributors fail to effectively market and sell our products in full compliance with applicable laws and regulations, our results of operations and business may suffer.

The size of the markets for our products may be smaller than estimated, and new market opportunities may not develop as quickly as we expect, or at all, thus limiting our ability to successfully meet our anticipated revenue projections.

The market for synthetic biology technologies and products is evolving, making it difficult to predict with any accuracy the size of the markets for our current and future products, including our BioXp systems, BioXp kits and benchtop reagents. Our estimates of the total addressable market for our current and future products are based on a number of internal and third-party estimates and assumptions. In particular, our estimates are based on our expectations that researchers in the market for certain synthetic biology research tools and technologies will view our products as competitive alternatives to, or better options than, existing tools and technologies. We also expect researchers will recognize the ability of our products to complement, enhance and enable new applications of their current tools and technologies. Underlying each of these expectations are a number of estimates and assumptions that may be incorrect, including the assumptions that government or other sources of funding will continue to be available to synthetic biology researchers at times and in amounts necessary to allow them to purchase our products and that researchers have an unmet need for performing synthetic biology applications. As a result, the sizes of the annual total addressable market for new markets and new products are even more difficult to predict. The synthetic biology market may develop more slowly or differently than we expect. While we believe our assumptions and the data underlying our estimates of the total addressable market for our products are reasonable, these assumptions and estimates may not be correct and the conditions supporting our assumptions or estimates, or those underlying the third-party data we have used, may change over time, thereby reducing the accuracy of our estimates. As a result, our estimates of the total addressable market for our products may be incorrect.

The future growth of the market for our current and future products depends on many factors beyond our control. For example, in 2020, 11% of our revenue was from products specifically targeting research and development efforts related to COVID-19 vaccines and therapeutic products. As effective COVID-19 vaccines or treatments are developed, approved and rolled out to protect against and treat the COVID-19 virus, demand for these products and biofoundry services may decline, the size of our market opportunity for such products may be impacted and our revenue may be significantly and adversely affected as a result.

We expect that our products will be subject to the market forces and adoption curves common to other new technologies. The market for synthetic biology technologies and products is in its early stages of development. Sales of new products into new market opportunities may take years to develop and mature and we cannot be certain that these market opportunities will develop as we expect. If the markets for our current and future products are smaller than estimated or do not develop as we expect, our growth may be limited and our business, financial condition and operational results of operations could be adversely affected.

Our success depends on broad scientific and market acceptance of our products, which we may fail to achieve.

Our ability to achieve and maintain scientific and commercial market acceptance of our products will depend on a number of factors. If widespread adoption of our products takes longer than anticipated, we will continue to experience operating losses.

The success of life sciences products is due, in large part, to recognition and acceptance by the scientific community, their adoption of these products in the applicable field of research and the growth, prevalence and costs of competing products. Such recognition and acceptance of our products may not occur in the near term, or at all. New synthetic biology technology, including our own, may not be adopted until the consistency and accuracy of such technology has been proven.

Other factors in achieving commercial market acceptance of our products include:

- our ability to market and increase awareness of the capabilities of our products;
- our customers' willingness to adopt new products and workflows;
- whether early adopters and key opinion leaders (KOLs) publish research involving the use of our products;
- our products' ease-of-use and whether it reliably provides advantages over alternative technologies;
- the rate of adoption of our products and services by academic institutions, laboratories, biopharmaceutical companies and others;
- the prices we charge for our products;
- our ability to develop new products and workflows;
- whether competitors commercialize products that perform similar functions as our products; and
- the impact of our investments in product innovation and commercial growth.

We cannot assure you that we will be successful in addressing each of these criteria or other criteria that might affect the market acceptance of any products we commercialize. If we are unsuccessful in achieving and maintaining scientific and market acceptance of our products, our business, financial condition and results of operations would be adversely affected.

The synthetic biology technology market is highly competitive. If we fail to compete effectively, our business and results of operation will suffer.

We face significant competition in the synthetic biology technology market. We currently compete with synthetic biology technology companies and the companies that are supplying components, products and services that serve customers engaged in synthetic biology research. These companies include Thermo Fisher Scientific Inc.; Danaher Corporation; CureVac N.V.; GENEWIZ Group, which was acquired by Brooks Automation, Inc.; GenScript Biotech Corporation; DNA Script SAS; Integrated DNA Technologies, Inc.; Molecular Assemblies, Inc.; Nuclera Nucleics Ltd; Nutcracker Therapeutics, Inc.; Twist Bioscience Corporation; Aldevron, LLC; TriLink BioTechnologies, Inc. and others.

Some of our current competitors are large, publicly-traded companies, or are divisions of large publicly-traded companies, and may enjoy a number of competitive advantages over us, including:

- greater name and brand recognition;
- greater financial and human resources;
- broader product lines;
- larger sales forces and more established distributor networks;

- substantial intellectual property portfolios;
- larger and more established customer bases and relationships; and
- better established, larger scale and lower cost manufacturing capabilities.

We cannot assure investors that our products will compete favorably or that we will be successful in the face of increasing competition from products and technologies introduced by our existing or future competitors or companies entering our markets. In addition, we cannot assure investors that our competitors do not have or will not develop products or technologies that currently or in the future will enable them to produce competitive products with greater capabilities or at lower costs than ours. Any failure to compete effectively could materially and adversely affect our business, financial condition and operating results.

Our revenue, results of operations and cash flows would be adversely affected by the loss of a significant customer.

We have derived, and we may continue to derive, a significant portion of our revenues from a limited number of large customers. We estimate that our twenty largest customers accounted for 85% and 60% of our revenue for the period March 8, 2019 through December 31, 2019 and the year ended December 31, 2020, respectively. The loss of key customers, or the reduction in the amount of product ordered by them may adversely affect our revenue, results of operations, cash flows and reputation in the marketplace.

One customer, New England Biolabs, Inc., accounted for 21% of our revenue for the year ended December 31, 2020, based on royalties paid under a Confidential Settlement Agreement. This royalty will expire upon the earlier of the expiration of all licensed patents or the entry of a final judgment declaring the licensed patents invalid or unenforceable. Also under the terms of the Confidential Settlement Agreement, NEB has only agreed to continue to offer the royalty-bearing products for sale through September 30, 2025, after which time it may stop selling the royalty bearing products upon sixty days' notice.

We generally do not have long-term contracts with our customers requiring them to purchase any specified quantities of products from us.

We generally do not have long-term contracts with our customers requiring them to purchase any specified quantities of products from us. Without such contracts, our customers are not obligated to order our products. We cannot accurately predict our customers' decisions to reduce or cease purchasing our products. Additionally, even where we enter into contracts with our customers, there is no guarantee that such agreements will be negotiated on terms that are commercially favorable to us in the long term. If many of our customers were to substantially reduce their purchase volume or cease ordering products from us, this could materially and adversely affect our financial performance.

Our business will depend significantly on research and development spending by the pharmaceutical, biotechnology and industrial agricultural customers, as well as academic institutions and other research institutions. Any reduction in spending could limit demand for our products and adversely affect our business, results of operations, financial condition and prospects.

We expect that substantially all of our sales revenue in the near term will be generated from sales to pharmaceutical, biotechnology and industrial agricultural customers, as well as academic institutions and other research institutions. Much of these customers' funding is dependent on annual research and development budgets and in the case of academic and other research institutions will be, in turn, provided by various state, federal and international government agencies. As a result, the demand for our products will depend upon the research and development budgets of these customers, which are impacted by factors beyond our control, such as:

- research and development budgets within the pharmaceutical, biotechnology, agricultural and other industries;
- government funding of research and development;
- changes to programs that provide funding to research laboratories and institutions, including changes in the amount of funds allocated to different areas of research or changes that have the effect of increasing the length of the funding process;
- macroeconomic conditions and the political climate;
- potential changes in the regulatory environment;

- differences in budgetary cycles, especially government- or grant-funded customers, whose cycles often coincide with government fiscal year ends;
- market-driven pressures to consolidate operations and reduce costs; and
- scientific and market acceptance of relatively new synthetic biology products.

In addition, various state, federal and international agencies that provide grants and other funding may be subject to stringent budgetary constraints that could result in spending reductions, reduced grant making, reduced allocations or budget cutbacks, which could jeopardize the ability of funding organizations or the organizations to whom they provide funding, to purchase our products. For example, congressional appropriations to the National Institutes of Health (NIH), have generally increased year-over-year for the last 19 years, and reached a new high in 2020, but the NIH also experiences occasional year-over-year decreases in appropriations, including as recently as 2013. In addition, funding for life science research has increased more slowly during the past several years compared to previous years and has actually declined in some countries. There is no guarantee that NIH appropriations will not decrease in the future, and a decrease may be more likely under the current administration, whose annual budget proposals have repeatedly decreased NIH appropriations. A decrease in the amount of, or delay in the approval of, appropriations to NIH or other similar United States or international organizations, such as the Medical Research Council in the United Kingdom, could result in fewer grants benefiting synthetic biology research. These reductions or delays could also result in a decrease in the aggregate amount of grants awarded for synthetic biology research or the redirection of existing funding to other projects or priorities, any of which in turn could cause our customers and potential customers to reduce or delay purchases of our products. Our operating results may fluctuate substantially due to any such reductions and delays. Any decrease in our customers' budgets or expenditures, or in the size, scope or frequency of their capital or operating expenditures, could materially and adversely affect our business, results of operations, financial condition and prospects.

Our success depends on our ability to service and support our products directly or in collaboration with our strategic partners.

To the extent that we or our strategic partners fail to maintain a high quality level of service and support for our products, there is a risk that the perceived quality of our products will be diminished in the marketplace. Likewise, we may fail to provide the level, quantity or quality of service expected by the marketplace. This could result in slower adoption rates and lower than anticipated utilization of our products, which could have a material adverse effect on our business, financial condition and results of operations.

Risks Related to the COVID-19 Pandemic and Other Natural Disasters

The COVID-19 pandemic and efforts to reduce its spread have adversely impacted, and are expected to continue to adversely impact, our business and operations.

The COVID-19 pandemic has had, and is expected to continue to have, an adverse impact on our operations, particularly as a result of preventive and precautionary measures that we, other businesses and governments are taking. Governmental mandates related to COVID-19 have impacted, and we expect similar infectious diseases or public health crises may continue to impact, our personnel and personnel at third-party manufacturers in the United States and other countries. Such mandates have impacted and likely will continue to impact the availability and cost of materials, which disrupts or delays our receipt of components and supplies from the third parties we rely on to, among other things, manufacture our BioXp systems, BioXp kits and benchtop reagents or source and timely receive parts and components from third parties. For instance, there are standing "stay-at-home" orders in California, and specifically San Diego County where our headquarters is located, that require businesses to implement certain social distancing protocols and other health and safety measures, which may affect productivity and morale. An extended implementation of these governmental mandates could further impact our ability to operate effectively and conduct ongoing research and development or other activities. The COVID-19 pandemic has also had an adverse effect on our ability to attract, recruit, interview and hire at the pace we would typically expect to support our rapidly expanding operations. To the extent that any governmental authority imposes additional regulatory requirements or changes existing laws, regulations and policies that apply to our business and operations, such as additional workplace safety measures, our product development plans may be delayed, and we may incur further costs in bringing our business and operations into compliance with changing or new laws, regulations and policies.

Our ability to drive the adoption of our products will depend upon our ability to attend trade shows and conferences, visit customer sites, the ability of our customers to access laboratories, install our products and train their personnel

on our products and conduct research in the face of the COVID-19 pandemic. Additionally, the research and development budgets of these customers, the ability of such customers to receive funding for research, and the ability of such customers to receive instrument installations and visitors to their facilities and to travel to our facilities, other laboratories and industry events, will become increasingly important to the adoption of our products. All of these considerations are impacted by factors beyond our control, such as:

- reductions in capacity or shutdowns of laboratories and other institutions as well as other impacts stemming from the COVID-19 pandemic, such as reduced or delayed spending on instruments or reagents as a result of such shutdowns and delays before re-opened laboratories and institutions resume previous levels of research activities that require new purchases of our products;
- decreases in government funding of research and development; and
- changes to programs that provide funding to research laboratories and institutions, including changes in the amount of funds allocated to different areas of research, changes that have the effect of increasing the length of the funding process or the impact of the COVID-19 pandemic on our customers and potential customers and their funding sources.

The ultimate impact of the COVID-19 pandemic is highly uncertain and subject to sudden change. This impact could have a material, adverse impact on our liquidity, capital resources, operations and business and those of the third parties on which we rely, and could worsen over time. The extent to which the COVID-19 pandemic impacts our results will depend on future developments, which are highly uncertain and cannot be predicted, including new information which may emerge concerning the severity of COVID-19 and the actions to contain COVID-19 or treat its impact, among others. While we do not yet know the full extent of potential impacts on our business, any of these occurrences could significantly harm our business, results of operations and financial condition.

Unfavorable U.S. or global economic conditions as a result of the COVID-19 pandemic, or otherwise, could adversely affect our ability to raise capital and our business, results of operations and financial condition.

While the potential economic impact brought by, and the duration of, the COVID-19 pandemic is difficult to assess or predict, the COVID-19 pandemic has resulted in, and may continue to result in, extreme volatility and disruptions in the capital and credit markets, reducing our ability to raise additional capital through equity, equity-linked or debt financings, which could negatively impact our short-term and long-term liquidity and our ability to operate in accordance with our operating plan, or at all. Additionally, our results of operations could be adversely affected by general conditions in the global economy and financial markets. A severe or prolonged economic downturn could result in a variety of risks to our business, including weakened demand for our products and our ability to raise additional capital when needed on favorable terms, if at all. A weak or declining economy could strain our customers' budgets or cause delays in their payments to us. Any of the foregoing could harm our business. We cannot anticipate all of the ways in which the current economic climate and financial market conditions could adversely impact our ability to raise capital, business, results of operations and financial condition.

If our facilities or our third-party manufacturers' facilities become unavailable or inoperable, our research and development program and commercialization of our products could be adversely impacted and manufacturing of our products could be interrupted.

Our San Diego, California, facilities house our corporate, research and development and quality assurance teams. Our instruments are manufactured at our third-party manufacturer's facilities in San Diego, and our BioXp kits and benchtop reagents are manufactured at various locations in the United States and internationally, including our San Diego facilities. We do not have a second or back-up facility to use if our San Diego facility becomes inoperable.

Our facilities in San Diego and those of our third-party manufacturers are vulnerable to natural disasters, public health crises, including the impact of the COVID-19 pandemic, and catastrophic events. For example, our San Diego facilities are located near earthquake fault zones and are vulnerable to damage from earthquakes as well as other types of disasters, including fires, floods, power loss, communications failures and similar events. If any disaster, public health crisis or catastrophic event were to occur, our ability to operate our business would be seriously, or potentially completely, impaired. If our facilities or our third-party manufacturer's facilities become unavailable for any reason, we cannot provide assurances that we will be able to secure alternative manufacturing facilities with the necessary capabilities and equipment on acceptable terms, if at all. We may encounter particular difficulties in replacing our San Diego facilities given the specialized equipment housed within it. The inability to manufacture our

products, combined with our limited inventory of finished products, may result in the loss of future customers or harm our reputation, and we may be unable to re-establish relationships with those customers in the future.

If our research and development program or commercialization program were disrupted by a disaster or catastrophe, the launch of new products, including our workflow automation and reagent solutions, and the timing of improvements to our products could be significantly delayed and could adversely impact our ability to compete with other available products and solutions. If our or our third-party manufacturer's capabilities are impaired, we may not be able to manufacture and ship our products in a timely manner, which would adversely impact our business. Although we possess insurance for damage to our property and the disruption of our business, this insurance may not be sufficient to cover all of our potential losses and may not continue to be available to us on acceptable terms, or at all.

Risks Related to Doing Business Internationally

Doing business internationally creates operational and financial risks for our business.

We estimate that during the period ended December 31, 2019 and the fiscal year ended December 31, 2020, approximately 14% and 25%, respectively, of our revenue was generated from customers located outside of the United States. In connection with our growth strategy, we intend to further expand in international markets. Conducting and launching operations on an international scale requires close coordination of activities across multiple jurisdictions and time zones and consumes significant management resources. If we fail to coordinate and manage these activities effectively, our business, financial condition or results of operations could be adversely affected. International sales entail a variety of risks, including longer payment cycles and difficulties in collecting accounts receivable outside of the United States, currency exchange fluctuations, challenges in staffing and managing foreign operations, tariffs and other trade barriers, unexpected changes in legislative or regulatory requirements of foreign countries into which we sell our products, difficulties in obtaining export licenses or in overcoming other trade barriers, laws and business practices favoring local companies, political and economic instability, difficulties protecting or procuring intellectual property rights, and restrictions resulting in delivery delays and significant taxes or other burdens of complying with a variety of foreign laws.

Changes in the value of the relevant currencies may affect the cost of certain items required in our operations. Changes in currency exchange rates may also affect the relative prices at which we are able to sell products in the same market. Our revenue from international customers may be negatively impacted as increases in the U.S. dollar relative to our international customers' local currency could make our products more expensive, impacting our ability to compete. Our costs of materials from international suppliers may increase if in order to continue doing business with us they raise their prices as the value of the U.S. dollar decreases relative to their local currency. Foreign policies and actions regarding currency valuation could result in actions by the United States and other countries to offset the effects of such fluctuations. The recent global financial downturn has led to a high level of volatility in foreign currency exchange rates and that level of volatility may continue, which could adversely affect our business, financial condition or results of operations.

Our international business could expose us to business, regulatory, political, operational, financial, and economic risks associated with doing business outside of the United States.

Engaging in international business inherently involves a number of difficulties and risks, including:

- required compliance with existing and changing foreign regulatory requirements and laws that are or may be applicable to our business in the future, such as the European Union's General Data Protection Regulation (GDPR), and other data privacy requirements, labor and employment regulations, anti-competition regulations, the U.K. Bribery Act of 2010 and other anti-corruption laws;
- required compliance with U.S. laws such as the FCPA, and other U.S. federal laws and regulations, including those established by the Office of Foreign Asset Control;
- export requirements and import or trade restrictions;
- laws and business practices favoring local companies;
- foreign currency exchange fluctuations, longer payment cycles and difficulties in enforcing agreements and collecting accounts receivables through certain foreign legal systems;
- hyperinflation or economic or political instability in foreign countries;

- changes in social, economic, and political conditions or in laws, regulations and policies governing foreign trade, manufacturing, research and development, and investment, including as a result of the separation of the United Kingdom from the European Union, commonly referred to as Brexit;
- the imposition of inconsistent laws or regulations;
- changes in or interpretations of foreign law that may adversely affect our ability to sell our products, perform services or repatriate profits to the United States;
- potentially adverse tax consequences, tariffs, customs charges, bureaucratic requirements and other trade barriers;
- difficulties and costs of staffing and managing foreign operations; and
- difficulties protecting, maintaining, enforcing or procuring intellectual property rights.

If one or more of these risks occurs, it could require us to dedicate significant resources to remedy such occurrence, and if we are unsuccessful in finding a solution, our financial results will suffer.

We could inadvertently engage in exporting or related activity that contravenes international trade restraints, or regulatory authorities could promulgate more far-reaching international trade restraints, which could give rise to one or more of substantial legal liability, impediments to our business and reputational damage.

Our international business activities must comport with U.S. export controls and other international trade restraints, including the U.S. Department of Commerce's Export Administration Regulations and economic sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Control.

To date our exports have not been licensable under export controls; however, we could still fail to observe export controls or sanctions requirements in a manner that leaves us in noncompliance with export controls or other international trade restraints. In addition, authorities could promulgate international trade restraints that impinge on our ability to engage in our business operations as planned. One or more of resulting legal penalties, restraints on our business or reputational damage could have material adverse effects on our business and financial condition.

We are subject to various U.S. and international anti-corruption laws and other anti-bribery and anti-money laundering laws and regulations.

We are subject to the FCPA, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, and other anti-corruption, anti-bribery, and anti-money laundering laws in the jurisdictions where we do business, both domestic and abroad. Anti-corruption and anti-bribery laws have been enforced aggressively in recent years and are interpreted broadly. These laws generally prohibit companies, their employees, business partners, third-party intermediaries, representatives, and agents from authorizing, offering, or providing, directly or indirectly, improper payments or benefits to government officials or commercial parties to obtain or retain business, direct business to any person, or gain any improper advantage. We sometimes leverage third parties to conduct our business abroad. We and our employees, business partners, third-party intermediaries, representatives, and agents may have direct or indirect interactions with officials and employees of government agencies or state-owned or affiliated entities and we may be held liable for their corrupt or other illegal activities even if we do not explicitly authorize those activities. We cannot assure you that our employees and agents will not take actions that violate applicable law, for which we may be ultimately held responsible. These laws also require that we keep accurate books and records and maintain internal accounting controls and compliance procedures designed to prevent any such actions. While we have policies and procedures to address compliance with these laws, we cannot assure you that our employees, business partners, third-party intermediaries, representatives, and agents will not take actions that violate our policies or applicable law, for which we may be ultimately held responsible. Our exposure for violating these laws increases as our international presence expands and as we increase sales and operations in foreign jurisdictions.

Any violation of the FCPA or other applicable anti-bribery, anti-corruption, and anti-money laundering laws could result in whistleblower complaints, adverse media coverage, investigations, loss of export privileges, severe criminal or civil sanctions, settlements, prosecution, enforcement actions, fines, damages, or suspension or debarment from government contracts, all of which may have an adverse effect on our reputation, business, stock price, financial condition, prospects, and results of operations. In addition, responding to any investigation or action will likely result in a materially significant diversion of management's attention and resources and significant defense costs and other professional fees.

Risks Related to Our Regulatory Environment

If we elect to label and promote any of our products as clinical diagnostics tests or medical devices, we would be required to obtain prior approval or clearance by the U.S. Food and Drug Administration (FDA), which would take significant time and expense and could fail to result in FDA clearance or approval for the intended uses we believe are commercially attractive.

Our products are currently labeled and promoted, and are, and in the near-future will be, sold primarily to academic and research institutions and research companies as research use only (RUO) products. They are not currently designed, or intended to be used, for clinical diagnostic tests or as medical devices. If we elect to label and market our products for use as, or in the performance of, clinical diagnostics in the United States, thereby subjecting them to FDA regulations as medical devices, we would be required to obtain premarket 510(k) clearance or premarket approval from the FDA, unless an exception applies.

We may in the future register with the FDA as a medical device manufacturer and list some of our products with the FDA pursuant to an FDA Class I listing for general purpose laboratory equipment. While this regulatory classification is exempt from certain FDA requirements, such as the need to submit a premarket notification commonly known as a 510(k), and some of the requirements of the FDA's Quality System Regulations (QSRs), we would be subject to ongoing FDA "general controls," which include compliance with FDA regulations for labeling, inspections by the FDA, complaint evaluation, corrections and removals reporting, promotional restrictions, reporting adverse events or malfunctions for our products, and general prohibitions against misbranding and adulteration.

In addition, we may in the future submit 510(k) premarket notifications to the FDA to obtain FDA clearance of certain of our products. It is possible, in the event we elect to submit 510(k) applications for any of our products, that the FDA would take the position that a more burdensome premarket application, such as a premarket approval application or a de novo application, is required for those same products. If such applications were required, greater time and investment would be required to obtain FDA approval. Even if the FDA agreed that a 510(k) was appropriate, FDA clearance can be expensive and time consuming. Notwithstanding the effort and expense, FDA clearance or approval could be denied for some or all of our products for which we choose to market as a medical device or a clinical diagnostic device. There can be no assurance that future products for which we may seek premarket clearance or approval will be approved or cleared by FDA or a comparable foreign regulatory authority on a timely basis, if at all, nor can there be assurance that labeling claims will be consistent with our anticipated claims or adequate to support continued adoption of such products. Compliance with FDA or comparable foreign regulatory authority regulations would require substantial costs, and subject us to heightened scrutiny by regulators and substantial penalties for failure to comply with such requirements or the inability to market our products. The lengthy and unpredictable premarket clearance or approval process, as well as the unpredictability of the results of any required clinical studies, may result in our failing to obtain regulatory clearance or approval to market such products, which would significantly harm our business, results of operations, reputation, and prospects.

If we sought and received regulatory clearance or approval for any of our products, we would be subject to ongoing FDA obligations and continued regulatory oversight and review, including the general controls listed above and the FDA's QSRs for our development and manufacturing operations. We could also be subject to additional FDA post-marketing obligations for such products, any or all of which would increase our costs and divert resources away from other projects. If we sought and received regulatory clearance or approval and are not able to maintain regulatory compliance with applicable laws, we could be prohibited from marketing our products for use as, or in the performance of, clinical diagnostics and be subject to enforcement actions, including warning letters and adverse publicity, fines, injunctions, and civil penalties, recalls or seizure of products, operating restrictions and criminal prosecution.

In addition, we could decide to seek regulatory clearance or approval for certain of our products in countries outside of the United States. Sales of such products outside the United States will likely be subject to foreign regulatory requirements, which can vary greatly from country to country. As a result, the time required to obtain clearances or approvals outside the United States may differ from that required to obtain FDA clearance or approval and we may not be able to obtain foreign regulatory approvals on a timely basis or at all. In Europe, we would need to comply with the new Medical Device Regulation 2017/745 and In Vitro Diagnostic Regulation 2017/746, which became effective May 26, 2017, with application dates of May 26, 2021 (postponed from 2020) and May 26, 2022 respectively. This will increase the difficulty of regulatory approvals in Europe in the future. In addition, the FDA regulates exports of medical devices. Failure to comply with these regulatory requirements or obtain and maintain required approvals,

clearances and certifications could impair our ability to commercialize our products for diagnostic use outside of the United States.

Our products could become subject to government regulation as medical devices by the FDA and other regulatory agencies even if we do not elect to seek regulatory clearance or approval to market our products for diagnostic purposes, which would adversely impact our ability to market and sell our products and harm our business. If our products become subject to FDA regulation, the regulatory clearance or approval and the maintenance of continued and post-market regulatory compliance for such products will be expensive, time-consuming and uncertain both in timing and in outcome.

We do not currently expect our workflow automation and reagent solutions to be subject to the clearance or approval of the FDA, as it is not intended to be used for the diagnosis, treatment or prevention of disease. However, as we expand our product line and the applications and uses of our current or products into new fields, certain of our future products could become subject to regulation by the FDA, or comparable international agencies, including requirements for regulatory clearance or approval of such products before they can be marketed. Also, even if our products are labeled, promoted and intended as RUO, the FDA or comparable agencies of other countries could disagree with our conclusion that our products are intended for research use only or deem our sales, marketing and promotional efforts as being inconsistent with RUO products. For example, our customers may independently elect to use our RUO labeled products in their own laboratory developed tests (LDTs) for clinical diagnostic use, which could subject our products to government regulation, and the regulatory clearance or approval and maintenance process for such products may be uncertain, expensive, and time-consuming. Regulatory requirements related to marketing, selling and distribution of RUO products could change or be uncertain, even if clinical uses of our RUO products by our customers were done without our consent. If the FDA or other regulatory authorities assert that any of our RUO products are subject to regulatory clearance or approval, our business, financial condition, or results of operations could be adversely affected.

The FDA has historically exercised enforcement discretion in not enforcing the medical device regulations against laboratories offering LDTs. However, on October 3, 2014, the FDA issued two draft guidance documents that set forth the FDA's proposed risk-based framework for regulating LDTs, which are designed, manufactured and used within a single laboratory. The draft guidance documents provide the anticipated details through which the FDA would propose to establish an LDT oversight framework, including premarket review for higher-risk LDTs, such as those that have the same intended use as FDA-approved or cleared companion diagnostic tests currently on the market. In January 2017, the FDA announced that it would not issue final guidance on the oversight of LDTs and manufacturers of products used for LDTs, but would seek further public discussion on an appropriate oversight approach, and give Congress an opportunity to develop a legislative solution.

As manufacturers develop more complex diagnostic tests and diagnostic software, the FDA may increase its regulation of LDTs. Any future legislative or administrative rule making or oversight of LDTs, if and when finalized, may impact the sales of our products and how customers use our products, and may require us to change our business model in order to maintain compliance with these laws. We cannot predict how these various efforts will be resolved, how Congress or the FDA will regulate LDTs in the future, or how that regulatory system will impact our business. Changes to the current regulatory framework, including the imposition of additional or new regulations, including regulation of our products, could arise at any time during the development or marketing of our products, which may negatively affect our ability to obtain or maintain FDA or comparable regulatory approval of our products, if required. Further, sales of devices for diagnostic purposes may subject us to additional healthcare regulation and enforcement by the applicable government agencies. Such laws include, without limitation, state and federal anti-kickback or anti-referral laws, healthcare fraud and abuse laws, false claims laws, privacy and security laws, Physician Payments Sunshine Act and related transparency and manufacturer reporting laws, and other laws and regulations applicable to medical device manufacturers.

Additionally, on November 25, 2013, the FDA issued Final Guidance "Distribution of In Vitro Diagnostic Products Labeled for Research Use Only." The guidance emphasizes that the FDA will review the totality of the circumstances when it comes to evaluating whether equipment and testing components are properly labeled as RUO. The final guidance states that merely including a labeling statement that the product is for research purposes only will not necessarily render the device exempt from the FDA's clearance, approval, and other regulatory requirements if the circumstances surrounding the distribution, marketing and promotional practices indicate that the manufacturer knows its products are, or intends for its products to be, used for clinical diagnostic purposes. These circumstances

may include written or verbal sales and marketing claims or links to articles regarding a product's performance in clinical applications and a manufacturer's provision of technical support for clinical applications.

As part of the United States' efforts to combat COVID-19 and consistent with Executive Orders 13771 and 13924, the Department of Health and Human Services (HHS) announced rescission of guidance and other informal issuances of the FDA regarding premarket review of LDT absent notice-and-comment rulemaking, stating that, absent notice-and-comment rulemaking, those seeking approval or clearance of, or an emergency use authorization, for an LDT may nonetheless voluntarily submit a premarket approval application, premarket notification or an Emergency Use Authorization request, respectively, but are not required to do so. However, laboratories opting to use LDTs without FDA premarket review or authorization would not be eligible for liability protection under the Public Readiness and Emergency Preparedness Act. While this action by HHS is expected to reduce the regulatory burden on clinical laboratories certified under the Clinical Laboratory Improvement Amendments of 1988 that develop LDTs, it is unclear how this action as well as future legislation by federal and state governments and the FDA will impact the industry, including our business and that of our customers. Such HHS measure may compel the FDA to formalize earlier enforcement discretionary policies and informal guidance through notice-and-comment rulemaking and impose further restrictions on LDTs. HHS' rescission policy may change over time. Congress could also enact legislation restricting LDTs. Any restrictions on LDTs by the FDA, HHS, Congress or state regulatory authorities may decrease the demand for our products. The adoption of new restrictions on RUO products, whether by the FDA or Congress, could adversely affect demand for our products. Further, we could be required to obtain premarket clearance or approval before we can sell our products to certain customers.

Ethical, legal and social concerns surrounding the use of genetic information could reduce demand for our technology.

Our products may be used to create DNA sequences of humans, agricultural crops and other living organisms. Our products could be used in a variety of applications, which may have underlying ethical, legal and social concerns. Governmental authorities could, for safety, social or other purposes, impose limits on or implement regulation of the use of gene synthesis. Such concerns or governmental restrictions could limit the use of our DNA synthesis products, which could have a material adverse effect on our business, financial condition and results of operations. In addition, public perception about the safety and environmental hazards of, and ethical concerns over, genetically engineered products and processes could influence public acceptance of our technologies, products and processes. These concerns could result in increased expenses, regulatory scrutiny, delays or other impediments to our programs.

We use biological and hazardous materials that require considerable expertise and expense for handling, storage and disposal and may result in claims against us.

We work with materials, including chemicals, biological agents, and compounds and DNA samples that could be hazardous to human health and safety or the environment. Our operations and research and development processes also produce hazardous and biological waste products. Federal, state and local laws and regulations govern the use, generation, manufacture, storage, handling and disposal of these materials and wastes. Compliance with applicable environmental laws and regulations is expensive, and current or future environmental laws and regulations may restrict or have a material effect on our operations and research and development programs. If we do not comply with applicable regulations, we may be subject to fines and penalties.

In addition, accidental injury or contamination from these materials or wastes could interrupt our commercialization efforts, research and development programs and business operations, as well as cause environmental damage resulting in costly clean-up and liabilities under applicable laws and regulations. Furthermore, environmental laws and regulations are complex, change frequently and have tended to become more stringent. We cannot predict the impact of such changes and cannot be certain of our future compliance.

While our property insurance policy provides limited coverage in the event of contamination from hazardous and biological products and the resulting cleanup costs, we do not currently have any additional insurance coverage for legal liability for claims arising from the handling, storage or disposal of hazardous materials. Accordingly, in the event of contamination or injury, we could be liable for damages or penalized with fines in an amount exceeding our resources, and our operations could be suspended or otherwise adversely affected. We may not be able to maintain insurance on acceptable terms, if at all.

We could inadvertently develop DNA sequences or engage in other activity that contravenes biosecurity requirements, or regulatory authorities could promulgate more far reaching biosecurity requirements that our standard business practices cannot accommodate, which could give rise to substantial legal liability, impediments to our business and reputational damage.

The Federal Select Agent Program (FSAP) involves rules administered by the Centers for Disease Control and Prevention and the Animal and Plant Health Inspection Service that regulate possession, use and transfer of biological select agents and toxins that have the potential to pose a severe threat to public, animal or plant health or to animal or plant products.

We have established a biosecurity program under which we follow biosafety and biosecurity best practices and avoid DNA synthesis activities that implicate FSAP rules; however, we could inadvertently fail to comply with FSAP or other biosecurity rules. In addition, authorities could promulgate new biosecurity requirements that restrict our operations. One or more resulting legal penalties, restraints on our business or reputational damage could have material adverse effects on our business and financial condition.

We are currently subject to, and may in the future become subject to additional, U.S. federal and state laws and regulations imposing obligations on how we collect, store and process personal information. Our actual or perceived failure to comply with such obligations could harm our business. Ensuring compliance with such laws could also impair our efforts to maintain and expand our future customer base, and thereby decrease our revenue.

In the ordinary course of our business, we currently, and in the future will, collect, store, transfer, use or process sensitive data, including personally identifiable information of employees, and intellectual property and proprietary business information owned or controlled by ourselves and other parties. The secure processing, storage, maintenance, and transmission of this critical information are vital to our operations and business strategy. We are, and may increasingly become, subject to various laws and regulations, as well as contractual obligations, relating to data privacy and security in the jurisdictions in which we operate. The regulatory environment related to data privacy and security is increasingly rigorous, with new and constantly changing requirements applicable to our business, and enforcement practices are likely to remain uncertain for the foreseeable future. These laws and regulations may be interpreted and applied differently over time and from jurisdiction to jurisdiction, and it is possible that they will be interpreted and applied in ways that may have a material adverse effect on our business, financial condition, results of operations and prospects.

We are in the process of evaluating compliance needs, but we do not currently have in place formal policies and procedures related to the storage, collection and processing of information, and have not conducted any internal or external data privacy audits, to ensure our compliance with all applicable data protection laws and regulations. Additionally, we do not currently have policies and procedures in place for assessing our third-party vendors' compliance with applicable data protection laws and regulations. All of these evolving compliance and operational requirements impose significant costs, such as costs related to organizational changes, implementing additional protection technologies, training employees and engaging consultants, which are likely to increase over time. In addition, such requirements may require us to modify our data processing practices and policies, distract management or divert resources from other initiatives and projects, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects. Any failure or perceived failure by us or our third-party vendors, collaborators, contractors and consultants to comply with any applicable federal, state or similar foreign laws and regulations relating to data privacy and security, or could result in damage to our reputation, as well as proceedings or litigation by governmental agencies or other third parties, including class action privacy litigation in certain jurisdictions, which would subject us to significant fines, sanctions, awards, penalties or judgments, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Risks Related to Our Intellectual Property

If we are unable to obtain and maintain sufficient intellectual property protection for our products and technology, or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our products and build a strong brand identity may be impaired.

We rely on patent protection as well as trademark, copyright, trade secret and other intellectual property rights protection and contractual restrictions to protect our proprietary products and technologies. Each of these types of

measures provides limited protection and may not adequately protect our rights or permit us to gain or keep any competitive advantage. If we fail to obtain, maintain and protect our intellectual property, third parties may be able to compete more effectively against us. In addition, we may incur substantial litigation costs in our attempts to enforce our right in, defend against challenges to, or recover or restrict use of our intellectual property.

To the extent our intellectual property offers inadequate protection, or is found to be invalid or unenforceable, we would be exposed to a greater risk of direct competition. If our intellectual property does not adequately cover competitors' products, our competitive position could be adversely affected, as could our business, financial condition, results of operations and prospects. Both the patent application process and the process of managing patent and other intellectual property disputes can be time-consuming and expensive.

Our success depends in large part on our ability to obtain and maintain protection of the intellectual property, particularly patents we may own solely or jointly with, or license from, third parties, in the United States and in other countries of interest, with respect to our products and technologies. However, obtaining and enforcing patents is costly, time-consuming and complex. We may not be able to file and prosecute all necessary or desirable patent applications, or maintain, enforce and license any patents that may issue from such patent applications, at a reasonable cost or in a timely manner or in all jurisdictions. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. Moreover, we may not develop additional proprietary products, methods and technologies that are patentable. We may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the rights to patents licensed from or to third parties; such patents and applications may not be prosecuted and enforced by such third parties in our best interests.

The patent position of synthetic biology technology companies is highly uncertain, involves complex legal and factual questions, and has been the subject of much litigation in recent years. Changes in either the patent laws or in interpretations of patent laws in the United States or other jurisdictions may diminish the value of our intellectual property. As a result, the issuance, scope, validity, enforceability, and commercial value of our patent rights are highly uncertain. It is possible that none of our pending patent applications will result in issued patents in a timely fashion or at all, and even if patents are granted, they may not provide a basis for intellectual property protection of commercially viable products or services, may not provide us with any competitive advantages. We cannot predict the breadth of claims that may be granted or enforced in our patents or in third-party patents. It is possible that third parties will design around our current or future patents such that we cannot prevent such third parties from using similar technologies and commercializing similar products to compete with us. Some of our owned or licensed patents or patent applications may be challenged, and we may not be successful in defending any such challenge. Any successful third-party challenge to our patents could result in the narrowing, unenforceability or invalidity of such patents and increased competition with our business. The outcome of patent litigation or other proceeding can be uncertain, and any attempt by us to enforce our patent rights against others or to challenge the patent rights of others may not be successful, or, regardless of success, may take substantial time and result in substantial cost, and may divert our efforts and attention from other aspects of our business. Any of the foregoing events could have a material adverse effect on our business, financial condition and results of operations.

The U.S. law relating to the patentability of certain inventions in the synthetic biology technology industry is uncertain and rapidly changing, which may adversely impact our existing patents or our ability to obtain patents in the future.

Changes in either the patent laws or interpretation of the patent laws in the United States or in other jurisdictions could increase the uncertainties and costs surrounding the prosecution of patent applications and the enforcement or defense of issued patents. The U.S. Congress has recently passed legislation implementing significant changes to U.S. patent law.

Various courts including the U.S. Supreme Court have rendered decisions that impact the patentability and patent eligibility of inventions or discoveries relating to synthetic biology technology, including by narrowing the scope and strength of patent protection in some instances. In light of these developments and depending on actions by the U.S. Congress, the federal courts and the United States Patent and Trademark office (the USPTO), the laws and regulations governing patents could be interpreted and applied, or could change, in unpredictable ways that may have a material adverse effect on our ability to obtain new patents and to defend and enforce our existing patents and patents that we might obtain in the future.

We cannot assure you that our patent portfolio will not be negatively impacted by the current uncertain state of the law, new court rulings or changes in guidance or procedures issued by the USPTO or other patent offices around the world. From time to time, the U.S. Supreme Court, other federal courts, the U.S. Congress or the USPTO may change the standards of patentability, scope and validity of patents in areas including synthetic biology technology and any such changes, or any similar adverse changes in the patent laws and procedures of other jurisdictions, could have a negative impact on our business, financial condition, prospects and results of operations.

We may not be able to protect our intellectual property rights throughout the world.

Filing, prosecuting and defending patents on our products in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States.

The laws of some foreign countries do not protect intellectual property rights to the same extent as the laws of the United States. We may encounter difficulties in protecting and defending such rights in foreign jurisdictions. Consequently, we may not be able to prevent third parties from practicing our inventions in competition with us in some or all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors and other third parties may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and technologies and may also export infringing products to territories where we do have patent protection but where enforcement may not be as strong as in the United States. Our patents or other intellectual property rights may not be effective or sufficient to prevent such third-party products from competing with our products. In addition, certain countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to other parties. Furthermore, many countries limit the enforceability of patents against certain kinds of third parties, including government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of any patents.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of many other countries do not favor the enforcement of patents and other intellectual property protection, which could make it difficult for us to gain any meaningful competitive advantage from our patents or other intellectual property rights. The legal systems in certain countries may also favor state-sponsored or domestic companies over foreign companies, even though we may have patents and other intellectual property protection in these countries. The absence of harmonized intellectual property protection laws makes it difficult to ensure consistent treatment and enforcement of patent, trade secret, and other intellectual property rights on a worldwide basis. As a result, it is possible that we will not be able to enforce our rights against third parties that misappropriate our proprietary technology or otherwise violate our intellectual property rights in any given country around the world.

Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing, and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate, or that are initiated against us, and any damages or other remedies awarded to us may not be commercially meaningful. In addition, changes in the law and legal decisions by courts in foreign countries may affect our ability to obtain adequate protection for our products, services and other technologies and the enforcement of intellectual property. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license. Any of the foregoing events could have a material adverse effect on our business, financial condition, results of operations and prospects.

Issued patents covering our products could be found invalid or unenforceable if challenged.

Our owned and licensed patents and patent applications may be subject to validity, enforceability and priority disputes. The issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability. Some of our patents or patent applications (including licensed patents and patent applications) may be challenged in opposition, interference or derivation, ex parte re-examination, inter partes review, post-grant review or other similar proceedings. Any successful third-party challenge to our patents in this or any other proceeding could result in the unenforceability or invalidity of such patents, which may lead to increased competition to our business, which could have a material adverse effect on our business, financial condition, results of operations and prospects. In addition,

if we initiate legal proceedings against a third party to enforce a patent covering our products, the defendant could counterclaim that the patent we are asserting in the proceeding is invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace. There are numerous grounds upon which a third party can assert invalidity or unenforceability of a patent. Third parties may also raise similar claims before administrative bodies in the United States or abroad, outside the context of litigation per se. Such proceedings could result in revocation of or amendment to our patents in such a way that they no longer protect our products. The outcome following legal assertions of invalidity and unenforceability during patent litigation is unpredictable. If a defendant or other third party were to prevail on a legal assertion of invalidity or unenforceability, we would lose at least part, and perhaps all, of the patent protection on certain aspects of our products and technologies, which could have a material adverse effect on our business, financial condition, results of operations and prospects. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, regardless of the outcome, it could dissuade companies from collaborating with us to license intellectual property or to develop or commercialize current or future products.

We may not be aware of all third-party intellectual property rights potentially relevant to our products, technology and services. Publications of discoveries in the scientific literature lag behind the discoveries, and patent applications in the United States and other jurisdictions are typically not published until approximately 18 months after the earliest effective filing date or, in some cases, not until such patent applications issue as patents. We might not have been the first to make the inventions claimed in each of our pending patent applications and we might not have been the first to file patent applications for these inventions. To determine the priority of these inventions, we may have to participate in interference or derivation proceedings in the U.S. or analogous proceedings in non-U.S. jurisdictions, which could result in substantial cost to us and the loss of valuable patent protection. No assurance can be given that other patent applications will not have priority over our patent applications. In addition, changes to the patent laws of the United States allow for various post-grant proceedings that have not been extensively tested, and their outcome is therefore uncertain. Furthermore, if third parties bring these proceedings against our patents, regardless of the merit of such proceedings and regardless of whether we are successful, we could experience significant costs and our management may be distracted. Any of the foregoing events could have a material adverse effect on our business, financial condition, results of operations and prospects.

If we are unable to protect the confidentiality of our trade secrets, the value of our technology could be materially adversely affected and our business could be harmed.

We rely heavily on trade secrets and confidentiality agreements to protect our unpatented know-how, technology and other proprietary information and to maintain our competitive position. However, trade secrets and know-how can be difficult to protect. In particular, we expect that with respect to our technologies, certain know how will over time be disseminated within the industry through independent development, the publication of journal articles describing the methodology, and the movement of personnel from academic to industry scientific positions.

In addition to pursuing patents on our technology, we take steps to protect our intellectual property and proprietary technology by entering into agreements, including confidentiality agreements, non-disclosure agreements and intellectual property assignment agreements, with our employees, consultants, academic institutions, corporate partners and, when needed, our advisers. However, we cannot be certain that such agreements have been entered into with all relevant parties, and we cannot be certain that our trade secrets and other confidential proprietary information will not be disclosed or that competitors or other third parties will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. For example, any of the foregoing parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Such agreements may not be enforceable or may not provide meaningful protection for our trade secrets or other proprietary information in the event of unauthorized use or disclosure or other breaches of the agreements, and we may not be able to prevent such unauthorized disclosure, which could adversely impact our ability to establish or maintain a competitive advantage in the market, business, financial condition, results of operations and prospects.

Monitoring unauthorized disclosure is difficult, and we cannot guarantee that the steps we have taken to prevent such disclosure are adequate. If we were to enforce a claim that a third party had wrongfully obtained and was using our trade secrets, it could be expensive and time-consuming, it could distract our personnel, and the outcome would be unpredictable. In addition, courts outside the United States may be less effective in protecting trade secrets.

We also seek to preserve the integrity and confidentiality of our confidential proprietary information by maintaining physical security of our premises and physical and electronic security of our information technology systems, but it is possible that these security measures could be breached. If any of our confidential proprietary information were to be lawfully obtained or independently developed by a competitor or other third party, absent patent protection, we would have no right to prevent such competitor from using that technology or information to compete with us, which could harm our competitive position. Competitors or third parties could purchase our products and attempt to replicate the competitive advantages we derive from our development efforts with their own competitive technologies that fall outside the scope of our intellectual property rights. They might also independently develop our technologies without reference to our trade secrets. If any of our trade secrets were to be disclosed to or independently discovered by a competitor or other third party, it could materially and adversely affect our business, financial condition, results of operations and prospects.

We may be subject to claims challenging the inventorship or ownership of our patents and other intellectual property.

We may be subject to claims that former employees, collaborators or other third parties have an interest in our owned or in-licensed patents, trade secrets or other intellectual property as an inventor or co-inventor. For example, we may have inventorship or ownership disputes arising from conflicting obligations of employees, consultants or others who are involved in developing our products. In addition, counterparties to our consulting, sponsored research, software development and other agreements may assert that they have an ownership interest in intellectual property developed under such arrangements. In particular, certain software development agreements pursuant to which third parties have developed parts of our proprietary software may not include provisions that expressly assign to us ownership of all intellectual property developed for us by such third parties. Furthermore, certain of our sponsored research agreements pursuant to which we provide research services for third parties do not assign to us all intellectual property developed under such agreements. As such, we may not have the right to use all such developed intellectual property under such agreements, we may be required to obtain licenses from third parties and such licenses may not be available on commercially reasonable terms or at all, or they may be non-exclusive. If we are unable to obtain such licenses and such licenses are necessary for the development, manufacture and commercialization of our products and technologies, we may need to cease the development, manufacture and commercialization of our products and technologies. Litigation may be necessary to defend against these and other claims challenging inventorship or ownership of our owned or in-licensed patents, trade secrets or other intellectual property. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights. In such an event, we may be required to obtain licenses from third parties and such licenses may not be available on commercially reasonable terms or at all, or they may be non-exclusive. If we are unable to obtain and maintain such licenses, we may need to cease the development, manufacture and commercialization of the relevant products and technologies. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees, and certain customers or partners may defer engaging with us until the particular dispute is resolved. Any of the foregoing could have a material adverse effect on our business, financial condition, results of operations and prospects.

We may not be able to protect and enforce our trademarks and trade names, or build name recognition in our markets of interest, thereby harming our competitive position.

The registered or unregistered trademarks or trade names that we use may be challenged, infringed, circumvented, declared generic, opposed, invalidated, cancelled or determined to be infringing on or dilutive of other marks. As a consequence, we may not be able to protect, register or maintain our rights in these trademarks and trade names.

Third parties may have prior rights in, or have filed, and may in the future file, for registration of, trademarks similar or identical to our trademarks in certain markets of interest that may block our ability to use or to register, or that may limit the scope of protection afforded to, our trademarks and trade names in such markets, thereby impeding our ability to protect, register, maintain or enforce our trademarks and trade names in all markets of interest and to build brand identity and possibly leading to litigation risks and market confusion.

If a third party succeeds in registering or developing common law rights in trademarks similar or identical to our trademarks that predate our rights, and if we are not successful in overcoming any objection from the USPTO or such third party based on or in challenging such rights and defending against challenges to our trademarks, we may not be able to use such trademarks to develop brand recognition of our technologies, products or services.

A third party with prior rights in a similar or identical trademark could challenge our use and registration of our trademarks and trade names by filing a trademark infringement court action or by seeking to block or cancel any registration for our trademarks through an opposition, cancellation, invalidity or other administrative proceeding. For example, Codexis, Inc. (Codexis), filed a complaint against us relating to our CODEX DNA name based on its rights in the CODEX and CODEXIS mark in the U.S. District Court, Northern District of California for federal and common law trademark infringement and unfair competition/false designation. Codexis seeks injunctive relief, including that we cease all use of the term CODEX and any other trademark confusingly similar to the marks CODEX and CODEXIS and not apply for registration of or register the CODEX mark or any other mark confusingly similar to the CODEX or CODEXIS marks, transfer to Codexis all domain names and social media accounts/user names that include the term “codex” and pay damages (consisting of Codexis’s actual damages, a disgorgement of our profits and punitive damages as permitted by California common law) as well as attorneys’ fees and costs.

The outcome of any such trademark litigation or other proceeding can be uncertain. If we are unable to successfully defend against any such challenge, in addition to not being able to secure or maintain a registration for our trademark, we may be required, including by court order, to cease all further use of such trademark. Moreover, in the case of a trademark infringement action, a court may require us to issue corrective advertising or to take other steps as the court may deem necessary to remove or reduce the risk of consumer confusion, including changing our company name and rebranding our products. Any of these actions could take time, would be expensive and could lead to a loss of brand recognition or customer confusion as a result. The court may also order us to pay damages (actual damages demonstrated at trial and a disgorgement of our profits), including treble damages and attorneys’ fees if the court finds that we willfully infringed such third party trademark. Regardless of success, any such litigation or other proceeding may take substantial time and effort and result in substantial cost, and may divert our efforts and attention from other aspects of our business and could have a material adverse effect on our business, financial condition and results of operations.

Further, we have and may in the future enter into agreements with owners of such third party trade names or trademarks to avoid potential trademark litigation, which may limit our ability to use, register or enforce our trade names or trademarks in certain fields of business or in certain markets or which may place certain other restrictions on the use of our trademarks and trade names that could limit our ability to build a strong brand identity. If we are unable to establish name recognition based on our trademarks and trade names, then we may not be able to compete effectively, and our business, financial condition, results of operations and prospects may be adversely affected.

Patent terms may be inadequate to protect our competitive position on our workflow automation and reagent solutions for an adequate amount of time.

Patents have a limited lifespan. In the United States, if all maintenance fees are timely paid, the basic term of a utility patent is 20 years from its earliest effective non-provisional filing date. In the United States, the basic term of a patent may be lengthened by patent term adjustment, which compensates the patentee for certain administrative delays by the USPTO in examining and granting a patent, and it may be shortened by filing a terminal disclaimer over an earlier expiring patent. Even if a patent covering our products is obtained, once the patent life has expired, we would no longer be able to use the patent to exclude others from making or selling competitive products. If one of our products requires extended development, testing or regulatory review, patent protection for the product might expire soon after or even before the product is commercialized. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours, which could have a material adverse effect on our business, financial condition and results of operations.

We may become involved in lawsuits to defend against third-party claims of infringement, misappropriation or other violations of intellectual property or to protect or enforce our intellectual property, any of which could be expensive, time consuming and unsuccessful, and may prevent or delay our development and commercialization efforts.

Our commercial success depends in part on our ability and the ability of future collaborators to develop, manufacture, market and sell our product and use our products and technologies without infringing, misappropriating or otherwise violating the intellectual property rights of third parties. There is a substantial amount of litigation involving patents and other intellectual property rights in the synthetic biology technology sector, as well as other proceedings for challenging patents, including interference, derivation, inter partes review, post grant review, reexamination proceedings, and pre- and post-grant oppositions. We may be exposed to, or threatened with,

future litigation by third parties having patent or other intellectual property rights alleging that our products, manufacturing methods, software or technologies infringe, misappropriate or otherwise violate their intellectual property rights. Numerous issued patents and pending patent applications that are owned by third parties exist in the fields in which we are developing our products and technologies. It is not always clear to industry participants, including us, the claim scope that may issue from pending patent applications owned by third parties or which patents cover various types of products, technologies or their methods of use or manufacture. Because of the large number of patents issued and patent applications filed in our fields, there may be a risk that third parties, including our competitors, may allege that they have patent rights encompassing our products, technologies or methods and that we are employing their proprietary technology without authorization.

If third parties, including our competitors, believe that our products or technologies infringe, misappropriate or otherwise violate their intellectual property, such third parties may seek to enforce their intellectual property, including patents against us by filing an intellectual property-related lawsuit, including a patent infringement lawsuit, against us. Even if we believe third-party intellectual property claims are without merit, there is no assurance that a court would find in our favor on questions of misappropriation, infringement, validity, enforceability, or priority. If any third parties were to assert patents against us and we are unable to successfully defend against any such assertion, we may be required, including by court order, to cease the development and commercialization of the infringing products or technology and we may be required to redesign such products and technologies so they do not infringe such patents, which may not be possible or may require substantial monetary expenditures and time. We could also be required to pay damages, which could be significant, including treble damages and attorneys' fees if we are found to have willfully infringed such patents. We could also be required to obtain a license to such patents in order to continue the development and commercialization of the infringing product or technology; however such a license may not be available on commercially reasonable terms or at all, including because certain of these patents are held by or may be licensed to our competitors. Even if such license were available, it may require substantial payments or cross-licenses under our intellectual property rights, and it may only be available on a nonexclusive basis, in which case third parties, including our competitors, could use the same licensed intellectual property to compete with us. Any of the foregoing could have a material adverse effect on our business, financial condition, results of operation or prospects.

We may choose to challenge, including in connection with any allegation of patent infringement by a third party, the validity or enforceability of any third-party patent that we believe may have applicability in our field, and any other third-party patent that may be asserted against us. Such challenges may be brought either in court or by requesting that the USPTO, European Patent Office (EPO), or other patent offices review the patent claims, such as in an ex-parte reexamination, inter partes review, post-grant review proceeding or opposition proceeding. However, there can be no assurance that any such challenge by us will be successful. Even if such proceedings are successful, these proceedings are expensive and may consume our time or other resources, distract our management and technical personnel, and the costs of the proceedings could be substantial.

Third parties, including our competitors, could be infringing, misappropriating or otherwise violating our owned and in-licensed intellectual property rights. Monitoring unauthorized use of our intellectual property is difficult and costly. We may not be able to detect unauthorized use of, or take effective steps to enforce, our intellectual property rights. From time to time, we seek to analyze our competitors' products and services, and may in the future seek to enforce our rights against potential infringement, misappropriation or violation of our intellectual property. However, the steps we have taken to protect our intellectual property rights may not be effective to enforce our rights as against such infringement, misappropriation or violation of our intellectual property. Any inability to meaningfully enforce our intellectual property rights could harm our ability to compete and reduce demand for our products and technologies.

Litigation proceedings may be necessary for us to enforce our patent and other intellectual property rights. In any such proceedings, a court may refuse to stop the other party from using the technology at issue on the grounds that our owned and in-licensed patents do not cover the technology in question. Further, in such proceedings, the defendant could counterclaim that our intellectual property is invalid or unenforceable and the court may agree, in which case we could lose valuable intellectual property rights, which could allow third parties to commercialize technology or products similar to ours and compete directly with us, without payment to us, or could require us to obtain license rights from the prevailing party in order to be able to manufacture or commercialize our products without infringing such party's intellectual property rights, and if we unable to obtain such a license, we may be required to cease commercialization of our products and technologies, any of which could have a material adverse

effect on our business, financial condition, results of operations and prospects. The outcome in any such proceedings is unpredictable.

Regardless of whether we are the defending party or the party seeking to enforce rights in any intellectual property-related proceeding, and regardless of outcome, such proceedings that may be necessary in the future could result in substantial costs and diversion of resources and could have a material adverse effect on our business, financial condition, results of operations and prospects. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of hearings, motions, or other interim proceedings or developments, and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Some of our competitors and other third parties may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. We may not have sufficient financial or other resources to adequately conduct these types of litigation or proceedings. Any of the foregoing, or any uncertainties resulting from the initiation and continuation of any litigation, could have a material adverse effect on our ability to raise the funds necessary to continue our operations or could otherwise have a material adverse effect on our business, financial condition, results of operations and prospects. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar adverse effect on our business, financial condition, results of operations and prospects.

Obtaining and maintaining our patent protection depends on compliance with various required procedures, document submissions, fee payments and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Various official fees, including renewal fees, must be paid to the respective patent authorities to apply for, prosecute, and maintain patents and patent applications. The USPTO and other patent authorities also variously require compliance with a number of procedural and substantive provisions under local law and practice during and sometimes after the patent application process. In many cases, an inadvertent lapse in paying a fee or fulfilling another requirement can be cured by payment of a late fee or by other means in accordance with the applicable rules. However, there are situations in which non-compliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, our competitors may be able to enter the market without infringing our patents and this circumstance would have a material adverse effect on our business, financial condition, results of operations and prospects.

We may be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information of third parties or that our employees have wrongfully used or disclosed alleged trade secrets of their former employers.

We have employed and expect to employ individuals who were previously employed at universities or at other companies, including our competitors or potential competitors. Although we try to ensure that our employees, consultants, advisors and independent contractors do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that our employees, advisors, consultants or independent contractors have inadvertently or otherwise used or disclosed intellectual property, including trade secrets or other proprietary information, of their former employers or other third parties, or to claims that we have improperly used or obtained such trade secrets. Litigation may be necessary to defend against these claims. If we fail in defending such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights and face increased competition to our business. Any such litigation or the threat thereof may adversely affect our ability to hire employees or contract with advisors, contractors and consultants. A loss of key research personnel work product could hamper or prevent our ability to commercialize potential products, which could harm our business. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management. This type of litigation or proceeding could substantially increase our operating losses and reduce our resources available for development activities. Some of our competitors may be able to sustain the costs of this type of litigation or proceedings more effectively than we can because of their substantially greater financial resources.

In addition, while it is our policy to require our employees and contractors who may be involved in the conception or development of intellectual property to execute agreements assigning such intellectual property to us, we may be

unsuccessful in executing such an agreement with each party who, in fact, conceives or develops intellectual property that we regard as our own. The assignment of intellectual property rights may not be self-executing, or the assignment agreements may be breached, and we may be forced to bring claims against third parties, or defend claims that they may bring against us, to determine the ownership of what we regard as our intellectual property. Furthermore, individuals executing agreements with us may have pre-existing or competing obligations to a third party, such as an academic institution, and thus an agreement with us may be disputed or ineffective in perfecting ownership of inventions developed by that individual, which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

Furthermore, we may in the future be subject to claims by former employees, consultants or other third parties asserting an ownership right in our owned or licensed patents or patent applications. An adverse determination in any such proceeding may result in loss of exclusivity or freedom to operate or in patent claims being narrowed, invalidated or held unenforceable, in whole or in part, which could limit our ability to stop others from using or commercializing similar technology, without payment to us, or could limit the duration of the overall patent protection covering our technology and products. Such challenges may also result in our inability to develop, manufacture or commercialize our products without infringing third-party patent rights. Any of the foregoing could harm our business, financial condition, results of operations and prospects.

If we cannot license rights to use technologies on reasonable terms, we may not be able to commercialize new products in the future.

We may identify third-party technology that we may need to license or acquire in order to develop or commercialize our products or technologies, including our workflow automation and reagent solutions. However, we may be unable to secure such licenses or acquisitions. The licensing or acquisition of third-party intellectual property rights is a competitive area, and several more established companies may pursue strategies to license or acquire third-party intellectual property rights that we may consider attractive or necessary. These established companies may have a competitive advantage over us due to their size, capital resources and greater commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us.

We also may be unable to license or acquire third-party intellectual property rights on terms that would allow us to make an appropriate return on our investment or at all. In return for the use of a third party's technology, we may agree to pay the licensor royalties based on sales of our products or services. Royalties are a component of cost of products or technologies and affect the margins on our products. We may also need to negotiate licenses to patents or patent applications before or after introducing a commercial product. We may not be able to obtain necessary licenses to patents or patent applications, and our business may suffer if we are unable to enter into the necessary licenses on acceptable terms or at all, if any necessary licenses are subsequently terminated, if the licensor fails to abide by the terms of the license or fails to prevent infringement by third parties, or if the licensed intellectual property rights are found to be invalid or unenforceable.

Intellectual property rights do not necessarily address all potential threats.

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations, and may not adequately protect our business or permit us to maintain our competitive advantage. For example:

- others may be able to make products that are similar to products and technologies we may develop or utilize similar technology that are not covered by the claims of the patents that we own or license now or in the future;
- we might not have been the first to make the inventions covered by the issued patent or pending patent application that we license or may own in the future;
- we might not have been the first to file patent applications covering certain of our or their inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing, misappropriating or otherwise violating our owned or licensed intellectual property rights;
- it is possible that our pending licensed patent applications or those that we may own in the future will not lead to issued patents;

- issued patents that we hold rights to may be held invalid or unenforceable as a result of legal challenges by our competitors;
- our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we may not develop additional proprietary technologies that are patentable;
- the patents of others may harm our business; and
- we may choose not to file a patent for certain trade secrets or know-how, and a third party may subsequently file a patent covering such intellectual property.

Should any of these events occur, they could materially adversely affect our business, financial condition, results of operations and prospects.

Risks Related to this Offering and Ownership of Our Common Stock

Prior to this offering, there has been no public market for shares of our common stock and an active trading market for our common stock may never develop or be sustained.

Prior to this offering, there has been no public market for shares of our common stock. We have been approved to list our common stock on the Nasdaq Global Select Market under the symbol "DNAY." We cannot assure you that an active trading market for our common stock will develop on that exchange or elsewhere. If an active trading market does not develop, or develops but is not maintained, you may have difficulty selling any of our common stock that you purchase due to the limited public float. Accordingly, we cannot assure you of your ability to sell your shares of common stock when desired or the prices that you may obtain for your shares.

The market price of our common stock may be volatile, which could result in substantial losses for investors purchasing shares in this offering.

The initial public offering price for our common stock was determined through negotiations with the underwriters. This initial public offering price may differ from the market price of our common stock after the offering. As a result, you may not be able to sell your common stock at or above the initial public offering price. Some of the factors that may cause the market price of our common stock to fluctuate include, but are not limited to:

- actual or anticipated fluctuations in our operating results, including fluctuations in our quarterly and annual results;
- operating expenses being more than anticipated;
- supply chain and production disruption due to our moving primary manufacturing facilities to a new location;
- the failure or discontinuation of any of our product development and research programs;
- changes in the structure or funding of research at academic and research laboratories and institutions, including changes that would affect their ability to purchase our products;
- the success of existing or new competitive businesses or technologies;
- announcements about new research programs or products of our competitors;
- developments or disputes concerning patent applications, issued patents or other proprietary rights;
- the recruitment or departure of key personnel;
- litigation and governmental investigations involving us, our industry or both;
- regulatory or legal developments in the United States and other countries;
- variations in market conditions in the synthetic biology technology sector;
- investor perceptions of us or our industry;
- changes in estimates or recommendations by securities analysts, if any, that cover our common stock or companies that are perceived to be similar to us;
- whether our financial results meet the expectations of securities analysts or investors;
- the level of expenses related to any of our research and development programs or products;
- actual or anticipated changes in our estimates as to our financial results or development timelines;

- variations in our financial results or those of companies that are perceived to be similar to us;
- the announcement or expectation of additional financing efforts;
- sales of our common stock by us or sales of our common stock by our insiders or other stockholders;
- the expiration of market standoff or lock-up agreements;
- general economic, industry and market conditions; and
- the COVID-19 pandemic, natural disasters or major catastrophic events.

Recently, stock markets in general, and the market for life sciences technology companies in particular, have experienced significant price and volume fluctuations that have often been unrelated or disproportionate to changes in the operating performance of the companies whose stock is experiencing those price and volume fluctuations, particularly in light of the current COVID-19 pandemic. Broad market and industry factors may seriously affect the market price of our common stock, regardless of our actual operating performance. These fluctuations may be even more pronounced in the trading market for our stock shortly following this offering. Following periods of such volatility in the market price of a company's securities, securities class action litigation has often been brought against that company. Because of the potential volatility of our stock price, we may become the target of securities litigation in the future. Securities litigation could result in substantial costs and divert management's attention and resources from our business.

If securities analysts do not publish research or reports about our business or if they publish negative evaluations of our common stock, the price of our common stock could decline.

The trading market for our common stock will rely in part on the research and reports that industry or securities analysts publish about us or our business. We do not currently have and may never obtain research coverage by industry or securities analysts. If no or few analysts commence coverage of us, the trading price of our common stock could decrease. Even if we do obtain analyst coverage, if one or more of the analysts covering our business downgrade their evaluations of our common stock, the price of our common stock could decline. If one or more of these analysts cease to cover our common stock, we could lose visibility in the market for our common stock, which in turn could cause the price of our common stock to decline.

Our directors, officers and principal stockholders have significant voting power and may take actions that may not be in the best interests of our other stockholders.

As of March 31, 2021, our directors, officers and stockholders holding 5% or more of our outstanding common stock and their affiliates beneficially owned over 99% of our outstanding common stock in the aggregate, assuming the exercise of all options and warrants held by such persons and without giving effect to the purchase of shares by any such persons in this offering. As a result, these stockholders, if they act together, will be able to exert significant influence over the management and affairs of our company and most matters requiring stockholder approval, including the election of directors and approval of significant corporate transactions. This concentration of ownership may have the effect of delaying or preventing a change in control, might adversely affect the market price of our common stock and may not be in the best interests of our other stockholders.

Sales of a substantial number of shares of our common stock by our existing stockholders following this offering could cause the price of our common stock to decline.

Sales of a substantial number of shares of our common stock in the public market could occur at any time following the expiration of the market standoff and lock-up agreements or the early release of these agreements or the perception in the market that the holders of a large number of shares of common stock intend to sell shares and could reduce the market price of our common stock. After giving effect to (i) the filing and effectiveness of our amended and restated certificate of incorporation, (ii) the automatic conversion of all shares of our convertible preferred stock outstanding as of March 31, 2021 into 15,079,329 shares of our common stock, (iii) the automatic exercise of all outstanding warrants issued to SGI as of March 31, 2021 into 1,235,767 shares of our common stock and (iv) the issuance and sale of 6,666,665 shares of common stock by us in this offering, we will have shares of common stock outstanding. Of these shares, the shares of common stock we are selling in this offering may be resold in the public market immediately, unless purchased by our affiliates. The remaining 21,562,269 shares of common stock, or 76.4% of our outstanding shares of common stock after this offering are currently prohibited or otherwise restricted from being sold in the public market under securities laws, market standoff agreements entered into by our stockholders with us, or lock-up agreements entered into by our stockholders with

the underwriters; however, subject to applicable securities law restrictions and excluding shares of common stock issued pursuant to the early exercise of unvested stock options that will remain unvested, the shares of our common stock outstanding after this offering will be able to be sold in the public market beginning on December 15, 2021. The representatives may, in their sole discretion, release all or some portion of the shares subject to lock-up agreements at any time and for any reason. Shares issued upon the exercise of stock options outstanding under our equity incentive plans or pursuant to future awards granted under those plans will become available for sale in the public market to the extent permitted by the provisions of applicable vesting schedules, any applicable market standoff and lock-up agreements, and Rule 144 and Rule 701 under the Securities Act.

Moreover, after this offering, holders of an aggregate of 15,079,329 shares of our common stock will have rights, subject to conditions, to require us to file registration statements with the SEC covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders as described under “Description of Capital Stock—Registration Rights.” We also plan to register all shares of common stock that we may issue under our equity compensation and employee stock purchase plans. Once we register these shares, they can be freely sold in the public market upon issuance and, if applicable, vesting, subject to volume limitations applicable to affiliates and the lock-up agreements described in the section titled “Underwriting” in this prospectus. Sales of common stock in the public market as restrictions end or pursuant to registration rights may make it more difficult for us to sell equity securities in the future at a time and at a price that we deem appropriate. These sales also could cause the trading price of our common stock to fall and make it more difficult for you to sell shares of our common stock. See the section titled “Shares Eligible for Future Sale” for more information regarding shares of common stock that may be sold in the public market after this offering.

We have broad discretion in the use of the net proceeds from this offering and may not use them effectively.

We cannot specify with certainty the particular uses of the net proceeds we will receive from this offering. Our management will have broad discretion in the application of the net proceeds, including for any of the purposes described in the section titled “Use of Proceeds” in this prospectus. Our management may spend a portion or all of the net proceeds from this offering in ways that our stockholders may not desire or that may not yield a favorable return. The failure by our management to apply these funds effectively could harm our business, financial condition, results of operations and prospects. Pending their use, we may invest the net proceeds from this offering in a manner that does not produce income or that loses value.

We do not expect to pay any dividends for the foreseeable future. Investors in this offering may never obtain a return on their investment.

You should not rely on an investment in our common stock to provide dividend income. We do not anticipate that we will pay any dividends to holders of our common stock in the foreseeable future. Instead, we plan to retain any earnings to maintain and expand our existing operations, fund our research and development programs and continue to invest in our commercial infrastructure. In addition, our current credit facility with SVB contains, and any future credit facility or financing we obtain may contain, terms prohibiting or limiting the amount of dividends that may be declared or paid on our common stock. Accordingly, investors must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any return on their investment. As a result, investors seeking cash dividends should not purchase our common stock.

Our amended and restated bylaws designate a state or federal court located within the State of Delaware as the exclusive forum for substantially all disputes between us and our stockholders, and also provide that the federal district courts will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act, each of which could limit our stockholders’ ability to choose the judicial forum for disputes with us or our directors, officers, stockholders, or employees.

Our amended and restated certificate of incorporation that will become effective upon the closing of this offering specifies that, unless we consent in writing to the selection of an alternative forum, the sole and exclusive forum for (a) any derivative action or proceeding brought on our behalf, (b) any action asserting a claim of breach of a fiduciary duty owed by any of our current or former directors, stockholders, officers, or other employees to us or our stockholders, (c) any action or proceeding asserting a claim arising pursuant to, or seeking to enforce any right, obligation or remedy under, any provision of the Delaware General Corporation Law, our amended and restated certificate of incorporation, or our amended and restated bylaws, (d) any action or proceeding as to which the Delaware General Corporation Law confers jurisdiction on the Court of Chancery of the State of Delaware, or (e) any

action or proceeding asserting a claim that is governed by the internal affairs doctrine shall be the Court of Chancery of the State of Delaware (or, if the Court of Chancery does not have jurisdiction, another state court in Delaware or, if no state court in Delaware has jurisdiction, the federal district court for the District of Delaware) and any appellate court therefrom, in all cases subject to the court having jurisdiction over the claims at issue and the indispensable parties; provided that the exclusive forum provision will not apply to suits brought to enforce any liability or duty created by the Exchange Act.

Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all such Securities Act actions. Accordingly, both state and federal courts have jurisdiction to entertain such claims. To prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our amended and restated bylaws also provide that the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act.

Any person or entity purchasing or otherwise acquiring or holding or owning (or continuing to hold or own) any interest in any of our securities shall be deemed to have notice of and consented to the foregoing bylaw provisions. Although we believe these exclusive forum provisions benefit us by providing increased consistency in the application of Delaware law and federal securities laws in the types of lawsuits to which each applies, the exclusive forum provisions may limit a stockholder's ability to bring a claim in a judicial forum of its choosing for disputes with us or any of our directors, officers, stockholders, or other employees, which may discourage lawsuits with respect to such claims against us and our current and former directors, officers, stockholders, or other employees. Our stockholders will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder as a result of our exclusive forum provisions. Further, in the event a court finds either exclusive forum provision contained in our amended and restated bylaws to be unenforceable or inapplicable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our results of operations.

Delaware law and provisions in our amended and restated certificate of incorporation and amended and restated bylaws that will be in effect prior to the closing of this offering might discourage, delay or prevent a change in control of our company or changes in our management and, therefore, depress the trading price of our common stock.

Our status as a Delaware corporation and the anti-takeover provisions of the Delaware General Corporation Law may discourage, delay or prevent a change in control by prohibiting us from engaging in a business combination with an interested stockholder for a period of three years after the person becomes an interested stockholder, even if a change of control would be beneficial to our existing stockholders. In addition, our restated certificate of incorporation and restated bylaws contain provisions that may make the acquisition of our company more difficult, including the following:

- our board of directors will be classified into three classes of directors with staggered three-year terms and directors will only be able to be removed from office for cause by the affirmative vote of holders of at least a majority of the voting power of our then outstanding capital stock;
- certain amendments to our amended and restated certificate of incorporation will require the approval of a majority of our board of directors and stockholders holding two-thirds of the voting power of our then outstanding capital stock;
- stockholder-proposed amendments to our amended and restated bylaws will require the approval of a majority of the stockholders entitled to vote, except certain provisions would require the affirmative vote of stockholders holding two-thirds of the voting power of our then outstanding capital stock;
- our stockholders will only be able to take action at a meeting of stockholders and will not be able to take action by written consent for any matter;
- vacancies on our board of directors will be able to be filled only by our board of directors and not by stockholders;
- only the chair of the board of directors, chief executive officer, president or a majority of the board of directors are authorized to call a special meeting of stockholders;
- certain litigation against us can only be brought in Delaware;

- our restated certificate of incorporation authorizes undesignated preferred stock, the terms of which may be established and shares of which may be issued, without the approval of the holders of our capital stock; and
- advance notice procedures apply for stockholders to nominate candidates for election as directors or to bring matters before an annual meeting of stockholders.

These anti-takeover defenses could discourage, delay, or prevent a transaction involving a change in control of our company. These provisions could also discourage proxy contests and make it more difficult for stockholders to elect directors of their choosing and to cause us to take other corporate actions they desire, any of which, under certain circumstances, could limit the opportunity for our stockholders to receive a premium for their shares of our capital stock and could also affect the price that some investors are willing to pay for our common stock.

Our ability to use net operating losses to offset future taxable income may be subject to certain limitations.

As of December 31, 2020, we had U.S. federal and state net operating loss carryforwards (NOLs) of $28.4 million and $15.9 million, respectively. The federal NOLs of $1.3 million, generated before January 1, 2018, will begin to expire in 2034, but can be used to offset up to 100% of taxable income. Amounts generated after December 31, 2017 will carryforward indefinitely, but will be subject to a 80% taxable income limitation beginning in tax years after December 31, 2020, as provided by the Coronavirus Aid, Relief, and Economic Security Act (CARES Act). State NOLs, if not utilized, will begin to expire in 2036. We may use these NOLs to offset against taxable income for U.S. federal and state income tax purposes. Additionally, Section 382 of the Internal Revenue Code of 1986, as amended (the Code), may limit the NOLs we may use in any year for U.S. federal income tax purposes in the event of certain changes in ownership of our company. A Section 382 “ownership change” generally occurs if one or more stockholders or groups of stockholders who own at least 5% of a company’s stock increase their ownership by more than 50 percentage points over their lowest ownership percentage within a rolling three-year period. Similar rules may apply under state tax laws. We have not conducted a 382 study to determine whether the use of our NOLs is impaired. We may have previously undergone an “ownership change.” In addition, this offering or future issuances or sales of our stock, including certain transactions involving our stock that are outside of our control, could result in future “ownership changes.” “Ownership changes” that have occurred in the past or that may occur in the future, including in connection with this offering could result in the imposition of an annual limit on the amount of pre-ownership change NOLs and other tax attributes we can use to reduce our taxable income, potentially increasing and accelerating our liability for income taxes, and also potentially causing those tax attributes to expire unused. States may impose other limitations on the use of our NOLs. Any limitation on using NOLs could, depending on the extent of such limitation and the NOLs previously used, result in our retaining less cash after payment of U.S. federal and state income taxes during any year in which we have taxable income, rather than losses, than we would be entitled to retain if such NOLs were available as an offset against such income for U.S. federal and state income tax reporting purposes, which could adversely impact our operating results.

We are an “emerging growth company” and a “smaller reporting company” and the reduced disclosure requirements applicable to emerging growth companies and smaller reporting companies may make our common stock less attractive to investors.

We are an “emerging growth company,” as defined in the JOBS Act. For so long as we remain an emerging growth company, we are permitted by SEC rules and plan to rely on exemptions from certain disclosure requirements that are applicable to other SEC registered public companies that are not emerging growth companies. These exemptions include not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes Oxley Act, not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor’s report providing additional information about the audit and the financial statements, reduced disclosure obligations regarding executive compensation and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. As a result, the information we provide stockholders will be different than the information that is available with respect to other public companies. In this prospectus, we have not included all of the executive compensation related information that would be required if we were not an emerging growth company. To the extent that we continue to qualify as a “smaller reporting company,” as such term is defined in Rule 12b-2 under the Exchange Act, after we cease to qualify as an emerging growth company, we will continue to be permitted to make certain reduced disclosures in our periodic reports and other documents that we file with the SEC. We cannot predict whether investors will find our

common stock less attractive if we rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected to avail ourselves of this exemption from new or revised accounting standards and, therefore, we will not be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies. As a result, our financial statements may not be comparable to companies that comply with new or revised accounting pronouncements as of public company effective dates.

We will incur significant increased costs and management resources as a result of operating as a public company, and our management will be required to devote substantial time to new compliance initiatives.

As a public company, we will incur significant legal, accounting, compliance and other expenses that we did not incur as a private company and these expenses may increase even more after we are no longer an "emerging growth company." Our management and other personnel will need to devote a substantial amount of time and incur significant expense in connection with compliance initiatives. For example, in anticipation of becoming a public company, we will need to adopt additional internal controls and disclosure controls and procedures, retain a transfer agent and adopt an insider trading policy. As a public company, we will bear all of the internal and external costs of preparing and distributing periodic public reports in compliance with our obligations under the securities laws.

In addition, regulations and standards relating to corporate governance and public disclosure, including the Sarbanes Oxley Act, and the related rules and regulations implemented by the SEC and Nasdaq, have increased legal and financial compliance costs and will make some compliance activities more time-consuming. We intend to invest resources to comply with evolving laws, regulations and standards, and this investment will result in increased general and administrative expenses and may divert management's time and attention from our other business activities. If our efforts to comply with new laws, regulations and standards differ from the activities intended by regulatory or governing bodies due to ambiguities related to practice, regulatory authorities may initiate legal proceedings against us, and our business may be harmed. In connection with this offering, we intend to increase our directors' and officers' insurance coverage, which will increase our insurance cost. In the future, it may be more expensive or more difficult for us to obtain director and officer liability insurance, and we may be required to accept reduced coverage or incur substantially higher costs to obtain coverage. These factors could also make it more difficult for us to attract and retain qualified members of our board of directors, particularly to serve on our audit committee and compensation committee, and qualified executive officers.

If you purchase our common stock in this offering, you will incur immediate and substantial dilution as a result of this offering.

If you purchase our common stock in this offering, you will incur immediate and substantial dilution of $12.55 per share, representing the difference between the initial public offering price of $16.00 per share, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us, and our pro forma net tangible book value per share after giving effect to (i) the filing and effectiveness of our amended and restated certificate of incorporation, (ii) the automatic conversion of all shares of our convertible preferred stock outstanding as of March 31, 2021 into 15,079,329 shares of our common stock, (iii) the automatic exercise of all outstanding warrants issued to SGI as of March 31, 2021 into 1,235,767 shares of our common stock and (iv) the issuance and sale of 6,666,665 shares of common stock by us in this offering. As of March 31, 2021, there were 1,146,738 shares of our common stock subject to outstanding stock options with a weighted-average exercise price of $2.78 per share. To the extent that these outstanding stock options and warrants are ultimately exercised or the underwriters exercise their option to purchase additional shares of our common stock, you will incur further dilution. See the section titled "Dilution" for more information.

We may be subject to securities litigation, which is expensive and could divert management attention.

The market price of our common stock may be volatile. The stock market in general, and the Nasdaq Stock Market and life sciences technology companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. In the past,

companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We may be the target of this type of litigation in the future. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

Our actual operating results may differ significantly from any guidance that we provide.

From time to time, we may provide guidance in our quarterly earnings conference calls, quarterly earnings releases, or otherwise, regarding our future performance that represents our management's estimates as of the date of release. This guidance, which would include forward-looking statements, would be based on projections prepared by our management. Neither our registered public accountants nor any other independent expert or outside party would compile or examine the projections. Accordingly, no such person would express any opinion or any other form of assurance with respect to the projections. Projections are based upon a number of assumptions and estimates that, while presented with numerical specificity, are inherently subject to significant business, economic, and competitive uncertainties and contingencies, many of which are beyond our control and are based upon specific assumptions with respect to future business decisions, some of which will change. The principal reason that we would release guidance is to provide a basis for our management to discuss our business outlook with analysts and investors. We do not accept any responsibility for any projections or reports published by any such third parties. Guidance is necessarily speculative in nature, and it can be expected that some or all of the assumptions underlying any guidance furnished by us will not materialize or will vary significantly from actual results. Accordingly, our guidance would be only an estimate of what management believes is realizable as of the date of release. Actual results may vary from our guidance and the variations may be material.

If we fail to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results in a timely manner or prevent fraud, which would adversely affect investor confidence in our company and harm our business.

Effective internal controls over financial reporting are necessary for us to provide reliable financial reports and, together with adequate disclosure controls and procedures, are designed to prevent fraud. Any failure to implement required new or improved controls, or difficulties encountered in their implementation, could cause us to fail to meet our reporting obligations in a timely manner, or at all. In addition, any testing by us conducted in connection with Section 404(a) of the Sarbanes Oxley Act or any subsequent testing by our independent registered public accounting firm in connection with Section 404(b) of the Sarbanes Oxley Act, may reveal deficiencies in our internal controls over financial reporting that are deemed to be significant deficiencies or material weaknesses or that may require prospective or retroactive changes to our financial statements or identify other areas for further attention or improvement. Ineffective internal controls could also cause investors to lose confidence in our reported financial information, which could have a negative effect on the trading price of our common stock.

In addition, as of December 31, 2020, we identified a significant deficiency in our internal controls over financial reporting that exists as a result of the technical categorization of transactions with a supplier. A significant deficiency is a deficiency, or a combination of deficiencies, in internal controls over financial reporting that is less severe than a material weakness, yet important enough to merit attention by those responsible for oversight of the company's financial reporting. We undertook steps to remedy this significant deficiency by our engagement of technical accounting consultants to assist management in determining the accounting treatment of unusual transactions and in evaluating new accounting positions and remediated this significant deficiency prior to the issuance date of our 2020 consolidated financial statements.

We will be required to disclose material changes made in our internal controls over financing reporting and procedures on a quarterly basis and our management will be required to assess the effectiveness of these controls annually. Beginning with our second Annual Report on Form 10-K after we become a public company, we will be required to make a formal assessment of the effectiveness of our internal control over financial reporting, and once we cease to be an emerging growth company, we will be required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. However, for as long as we are an "emerging growth company" under the JOBS Act, our independent registered public accounting firm will not be required to attest to the effectiveness of our internal controls over financial reporting pursuant to Section 404(b).

To achieve compliance with Section 404(a) within the prescribed period, we will be engaging in a process to document and evaluate our internal control over financial reporting, which is both costly and challenging. In this

regard, we will need to continue to dedicate internal resources, potentially engage outside consultants and adopt a plan to assess and document the adequacy of our internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are designed and operating effectively and implement a continuous reporting and improvement process for internal control over financial reporting.

We could be an “emerging growth company” for up to five years. An independent assessment of the effectiveness of our internal controls could detect problems that our management’s assessment might not identify. Undetected material weaknesses in our internal controls could lead to financial statement restatements and require us to incur the expense of remediation.

If our estimates or judgments relating to our critical accounting policies are based on assumptions that change or prove to be incorrect, our results of operation could fall below our publicly announced guidance or the expectations of securities analysts and investors, resulting in a decline in the market price of our common stock.

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in our financial statements and accompanying notes. We base our estimates on historical experience and estimates and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets, liabilities, equity, revenue and expenses that are not readily apparent from other sources. For example, in connection with the implementation of the new revenue accounting standard related to product sales, management makes judgments and assumptions based on our interpretation of the new standard. The new revenue standard is principle-based and interpretation of those principles may vary from company to company based on their unique circumstances. It is possible that interpretation, industry practice and guidance may evolve as we apply the new standard. If our assumptions underlying our estimates and judgements relating to our critical accounting policies change or if actual circumstances differ from our assumptions, estimates or judgements, our operating results may be adversely affected and could fall below our publicly announced guidance or the expectations of securities analysts and investors, resulting in a decline in the market price of our common stock.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements that are based on our management's beliefs and assumptions and on information currently available to our management. All statements other than statements of historical facts contained in this prospectus, including statements regarding our future results of operations and financial position, business strategy, development plans, expected research and development costs, regulatory strategy, timing, and likelihood of success, as well as plans and objectives of management for future operations, are forward-looking statements. In some cases, you can identify forward-looking statements by terms such as "aim," "anticipate," "assume," "believe," "contemplate," "continue," "could," "due," "estimate," "expect," "goal" "intend," "may," "objective" "plan," "predict," "potential," "project," "seek," "should," "target," "will," "would," and other similar expressions that are predictions of or indicate future events and future trends, or the negative of these terms or other comparable terminology. Forward-looking statements contained in this prospectus include, but are not limited to, statements about:

- estimates of the synthetic biology market, market growth, and new market expansion;
- our future revenue, expenses, capital requirements and our needs for additional financing;
- our expectations regarding the rate and degree of market acceptance of our BioXp system, BioXp kits and benchtop reagents;
- the ability of our products to facilitate the *design-build-test* paradigm of synthetic biology;
- the size and growth of the synthetic biology market and competitive companies and technologies and our industry;
- our ability to manage and grow our business;
- our ability to develop and commercialize new products;
- our ability to establish and maintain intellectual property protection for our products or avoid or defend claims of infringement;
- the performance of third-party manufacturers and suppliers and our ability to qualify second-source suppliers;
- the potential effects of government regulation;
- our ability to hire and retain key personnel and to manage our future growth effectively;
- our ability to obtain additional financing in this or future offerings;
- the volatility of the trading price of our common stock;
- the impact of local, regional, and national and international economic conditions and events;
- the impact of COVID-19 on our business;
- our expectations about market trends;
- our anticipated use of our existing resources and the net proceeds from this offering; and
- other risks and uncertainties, including those listed in the section titled "Risk Factors."

We have based these forward-looking statements largely on our current expectations and projections about our business, the industry in which we operate and financial trends that we believe may affect our business, financial condition, results of operations and prospects, and these forward-looking statements are not guarantees of future performance or development. These forward-looking statements speak only as of the date of this prospectus and are subject to a number of risks, uncertainties and assumptions described in the section titled "Risk Factors" and elsewhere in this prospectus. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein until after we distribute this prospectus, whether as a result of any new information, future events or otherwise.

In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus, and while we believe such information forms a reasonable basis for such statements, such information may be limited or

incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and you are cautioned not to unduly rely upon these statements.

MARKET, INDUSTRY AND OTHER DATA

This prospectus contains estimates, projections and other information concerning our industry, our business and the markets for our current and future products, including data regarding the estimated size of such markets and the incidence of certain medical conditions. We obtained the industry, market and similar data set forth in this prospectus from our internal estimates and research, including surveys and studies we have sponsored or conducted, and from academic and industry research, publications, surveys and studies conducted by third parties, including governmental agencies. In some cases, we do not expressly refer to the sources from which this data is derived. Information that is based on estimates, forecasts, projections, market research or similar methodologies is inherently subject to uncertainties and actual events or circumstances may differ materially from events and circumstances that are assumed in this information. While we believe that the data we use from third parties are reliable, we have not separately verified this data. Any industry forecasts are based on data (including third-party data), models, and experience of various professionals and are based on various assumptions, all of which are subject to change without notice. Further, while we believe our internal research is reliable, such research has not been verified by any third party. While we are not aware of any misstatements regarding the market data presented herein, industry forecasts and projections involve risks and uncertainties and are subject to change based on various factors, including those discussed in the section titled “Risk Factors.”

USE OF PROCEEDS

We estimate that the net proceeds to us from the sale of the shares of our common stock in this offering will be approximately $97.0 million, or approximately $111.8 million if the underwriters exercise their option to purchase additional shares in full, based upon the initial public offering price of $16.00 per share, and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us.

We currently expect to use our net proceeds from this offering, together with our existing cash and available borrowings, for general corporate purposes, including working capital, and funding our research and development and sales and marketing activities. We may use a portion of the net proceeds to expand our current business through strategic acquisitions or in-licenses of complimentary companies or technologies; however, we currently do not have any agreements or commitments to complete any such transactions and are not involved in negotiations regarding such transactions. We also may use a portion of the net proceeds to repay debt under our Loan and Security Agreement with Silicon Valley Bank, This debt bears interest at a per annum rate equal to the greater of (a) 4.0% above the prime rate and (b) 7.25%, and matures on January 1, 2024.

Based on our current operating plan, we believe that the net proceeds from this offering, together with our existing cash, available borrowings and short-term investments as of the date of this prospectus, will be sufficient to fund our operating expenses and capital expenditures for at least the next twelve months.

Our expected use of the net proceeds from this offering represents our intentions based upon our current plans and business conditions. We cannot predict with certainty all of the particular uses for the net proceeds to be received upon the completion of this offering or the amounts that we will actually spend on the uses set forth above and we may require additional funds in order to fully accomplish the specified uses listed above. As a result, our management will have broad discretion over the use of the net proceeds from this offering.

The amounts and timing of our actual expenditures will depend upon numerous factors including cash flows from operations, the extent and success of our commercial expansion, the extent and results of our research and development efforts, the anticipated growth of our business and any unforeseen cash needs.

Pending their uses, we plan to invest the net proceeds of this offering in short-term, interest-bearing, investment-grade instruments, including certificates of deposit or direct or guaranteed obligations of the U.S. government. We cannot predict whether the proceeds invested will yield a favorable return.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock. We currently intend to retain any future earnings and do not expect to pay any dividends in the foreseeable future. In addition, the terms of our Loan and Security Agreement with Silicon Valley Bank restrict our ability to pay dividends. Any future determination to declare cash dividends will be made at the discretion of our board of directors, subject to applicable laws, and will depend on a number of factors, including our financial condition, results of operations, capital requirements, contractual restrictions, general business conditions and other factors that our board of directors may deem relevant, including restrictions in our current and future debt instruments, our future earnings, capital requirements, financial condition, prospects and applicable Delaware law, which provides that dividends are only payable out of surplus or current net profits.

CAPITALIZATION

The following table sets forth our cash and capitalization as of March 31, 2021:

- on an actual basis;
- on a pro forma basis, giving effect to (i) the automatic conversion of all outstanding shares of our convertible preferred stock into an aggregate of 15,079,329 shares of our common stock immediately prior to the completion of this offering, (ii) the automatic exercise of all outstanding warrants issued to SGI into an aggregate of 1,235,767 shares of our common stock immediately prior to the completion of this offering, and (iii) the filing and effectiveness of our amended and restated certificate of incorporation immediately prior to the completion of this offering; and
- on a pro forma as adjusted basis to reflect (i) the pro forma adjustments set forth above and (ii) our issuance and sale of 6,666,665 shares of common stock in this offering at the initial public offering price of $16.00 per share, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us.

You should read this information in conjunction with our consolidated financial statements and the related notes appearing elsewhere in this prospectus, as well as the sections titled “Selected Consolidated Financial Data” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

	As of March 31, 2021		
	Actual	Pro Forma	Pro Forma As Adjusted
	(in thousands, except per share data)		
Cash	$ 17,834	$ 17,639	$ 115,434
Derivative liabilities	$ 2,403	$ 303	$ 303
Long-term debt, net of discount, including current portion	14,372	14,372	14,372
Stockholders’ equity (deficit):			
Convertible preferred stock, $0.0001 par value; 45,949,699 shares authorized, actual; 15,079,329 shares issued and outstanding, actual; no shares authorized, issued or outstanding, pro forma and pro forma as adjusted	38,914	—	—
Preferred stock, $0.0001 par value; no shares authorized, issued and outstanding, actual; 5,000,000 shares authorized and no shares issued or outstanding, pro forma and pro forma as adjusted	—	—	—
Common stock, $0.0001 par value; 72,000,000 shares authorized, actual; 5,247,173 shares issued and outstanding, actual; 100,000,000 shares authorized, pro forma; 21,562,269 shares issued and outstanding, pro forma; 100,000,000 shares authorized, pro forma as adjusted; 28,228,934 shares issued and outstanding, pro forma as adjusted	1	3	4
Additional paid-in capital	1,052	41,926	138,893
Accumulated deficit	(33,754)	(33,811)	(33,811)
Total stockholders' equity (deficit)	(32,701)	8,118	105,086
Total capitalization	22,988	22,793	119,761

If the underwriters’ option to purchase additional shares is exercised in full, our pro forma as adjusted cash, additional paid-in capital, total stockholders’ equity (deficit), and total capitalization as of March 31, 2021, would be $130.3 million, $153.8 million, $120.0 million, and $134.6 million, respectively.

The number of shares of our common stock to be issued and outstanding, pro forma and pro forma as adjusted in the table above is based on 21,562,269 shares of our common stock outstanding as of March 31, 2021 (after giving pro forma effect to the automatic conversion of all of our outstanding convertible preferred stock and the automatic exercise of all of our outstanding warrants issued to SGI into an aggregate of 16,315,096 shares of our common stock immediately prior to the completion of this offering), and excludes:

- 484,630 shares of common stock issuable upon the exercise of options granted under the 2019 Plan outstanding as of March 31, 2021, with a weighted-average exercise price of $0.59 per share;
- 662,108 shares of common stock issuable upon the exercise of options granted under the 2021 Plan outstanding as of March 31, 2021, with an exercise price of $4.38 per share;
- 1,150,655 shares of common stock issuable upon the exercise of options granted under the 2021 Plan after March 31, 2021, with an exercise price of $6.58 per share;
- 62,406 shares of common stock issuable upon the exercise of warrants to purchase shares issued to SVB Financial Group with an initial exercise price of $3.61 per share; and
- 4,621,202 shares of common stock reserved for future issuance under our equity compensation plans, consisting of:
  - 771,202 shares of common stock reserved for future issuance under our 2021 Plan as of March 31, 2021, which shares will be added to the shares to be reserved for future issuance under the 2021 SIP;
  - 3,500,000 shares of common stock reserved for future issuance under our 2021 SIP, which became effective in connection with this offering, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan; and
  - 350,000 shares of common stock reserved for future issuance under our ESPP, which became effective in connection with this offering, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan.

DILUTION

Investors purchasing our common stock in this offering will experience immediate and substantial dilution in the pro forma as adjusted net tangible book value of their shares of common stock. Dilution in pro forma as adjusted net tangible book value represents the difference between the initial public offering price of our common stock and the pro forma as adjusted net tangible book value per share of our common stock immediately after the offering.

Our historical net tangible book value as of March 31, 2021 was $(42.2) million, or $(8.04) per share of our common stock. Our historical net tangible book value is the amount of our total tangible assets less our total liabilities and convertible preferred stock, which is not included within our stockholders' equity (deficit). Historical net tangible book value per share represents historical net tangible book value divided by the number of shares of our common stock outstanding as of March 31, 2021.

Our pro forma net tangible book value as of March 31, 2021 was $(1.4) million, or $(0.06) per share of our common stock. Pro forma net tangible book value represents the amount of our total tangible assets less our total liabilities. Pro forma net tangible book value per share represents pro forma net tangible book value divided by the total number of shares outstanding as of March 31, 2021, after giving pro forma effect to the automatic conversion of all of our outstanding convertible preferred stock and the automatic exercise of all of our outstanding warrants issued to SGI into an aggregate of 16,315,096 shares of our common stock immediately prior to the completion of this offering, as if such conversion and exercise had occurred on March 31, 2021.

After giving further effect to our sale of 6,666,665 shares of common stock in this offering at the initial public offering price of $16.00 per share, and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of March 31, 2021, would have been $97.3 million, or $3.45 per share. This represents an immediate increase in pro forma net tangible book value per share of $3.51 to our existing stockholders and an immediate dilution in pro forma net tangible book value per share of $12.55 to investors purchasing shares of common stock in this offering.

The following table illustrates this dilution on a per share basis to new investors (without giving effect to any exercise by the underwriters of their option to purchase additional shares):

Initial public offering price per share			$	16.00
Historical net tangible book value per share of common stock as of March 31, 2021	$	(8.04)		
Increase per share in net tangible book value per share of common stock attributable to pro forma adjustments		7.98		
Pro forma net tangible book value per share of common stock as of March 31, 2021		(0.06)		
Increase in net tangible book value per share of common stock attributable to this offering	$	3.51		
Pro forma as adjusted net tangible book value per share of common stock after this offering			$	3.45
Dilution per share of common stock to new investors participating in this offering			$	12.55

If the underwriters exercise their option to purchase 999,999 additional shares of common stock in this offering in full at the initial public offering price of $16.00 per share, and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us, the pro forma as adjusted net tangible book value per share after this offering would be $3.84 per share, and the dilution per share to investors purchasing shares of common stock in this offering would be $12.16 per share.

The following table summarizes, on the pro forma as adjusted basis described above, as of March 31, 2021, the number of shares of common stock purchased from us, the total consideration paid, or to be paid, and the weighted-average price per share paid, or to be paid, by existing stockholders and by investors purchasing shares in

this offering at the initial public offering price of $16.00 per share, before deducting the underwriting discounts and commissions and estimated offering expenses payable by us.

(dollar amounts in thousands, expect per share amounts)	Shares Purchased		Total Consideration		Weighted-Average Price Per Share
	Number	Percent	Amount	Percent	
Existing stockholders before this offering	21,562,269	76.4 %	$ 39,828,716	27.2 %	$ 1.85
Investors purchasing shares in this offering	6,666,665	23.6 %	106,666,640	72.8 %	$ 16.00
Total	28,228,934	100 %	$ 146,495,356	100 %	

The table above assumes no exercise of the underwriters' option to purchase 999,999 additional shares in this offering. If the underwriters' option to purchase additional shares is exercised in full, the number of shares of our common stock held by existing stockholders would be reduced to 73.8% of the total number of shares of our common stock outstanding after this offering, and the number of shares of common stock held by investors purchasing shares of common stock in the offering would be increased to 26.2% of the total number of shares outstanding after this offering.

The foregoing tables and calculations (other than the historical net tangible book value calculation) are based on 21,562,269 shares of our common stock outstanding as of March 31, 2021 (after giving pro forma effect to the automatic conversion of all of our outstanding convertible preferred stock and the automatic exercise of all of our outstanding warrants issued to SGI into an aggregate of 16,315,096 shares of our common stock immediately prior to the completion of this offering), and excludes:

- 484,630 shares of common stock issuable upon the exercise of options granted under the 2019 Plan outstanding as of March 31, 2021, with a weighted-average exercise price of $0.59 per share;
- 662,108 shares of common stock issuable upon the exercise of options granted under the 2021 Plan after March 31, 2021, with an exercise price of $4.38 per share;
- 1,150,655 shares of common stock issuable upon the exercise of options granted under the 2021 Plan after March 31, 2021, with a weighted-average exercise price of $6.58 per share;
- 62,406 shares of common stock issuable upon the exercise of warrants to purchase shares issued to SVB Financial Group with an initial exercise price of $3.61 per share; and
- 4,621,202 shares of common stock reserved for future issuance under our equity compensation plans, consisting of:
  - 771,202 shares of common stock reserved for future issuance under our 2021 Plan as of March 31, 2021, which shares will be added to the shares to be reserved for future issuance under the 2021 SIP;
  - 3,500,000 shares of common stock reserved for future issuance under our 2021 SIP, which became effective in connection with this offering, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan; and
  - 350,000 shares of common stock reserved for future issuance under our ESPP, which became effective in connection with this offering, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan.

To the extent that any outstanding options are exercised or new options are issued under our equity benefit plans, or we issue additional shares of common stock or other securities convertible into or exercisable or exchangeable for shares of our capital stock in the future, there will be further dilution to investors purchasing shares of common stock in this offering.

SELECTED CONSOLIDATED FINANCIAL DATA

The following tables summarize our selected consolidated financial data for the periods and as of the dates indicated. Pursuant to the authority of the SEC under Rules 3-06 and 3-13 of Regulation S-X under the Securities Act, we have substituted audited consolidated financial statements for the period from March 8, 2019 through December 31, 2019 in place of audited consolidated financial statements for the fiscal year ended December 31, 2019. Because of the different length of time for which financial information is presented in the period from March 8 , 2019 through December 31, 2019 compared to that presented for the year ended December 31, 2020, our financial results for those periods are not comparable. We have derived the selected consolidated statement of operations data for the period from March 8, 2019 through December 31, 2019 and the year ended December 31, 2020, and the consolidated balance sheet data as of December 31, 2019 and 2020, from our audited consolidated financial statements appearing elsewhere in this prospectus. We have derived the statement of operations data for the three months ended March 31, 2020 and 2021, and the balance sheet data as of March 31, 2021 from our unaudited interim financial statements and related notes included elsewhere in this prospectus. Our unaudited interim financial statements were prepared in accordance with GAAP, on the same basis as our audited financial statements and include, in the opinion of management, all adjustments, consisting of normal recurring adjustments, that are necessary for the fair presentation of the financial information set forth in those financial statements. Our historical results are not necessarily indicative of the results that may be expected in the future, and our interim results are not necessarily indicative of our results for the full fiscal year.You should read the following selected consolidated financial data together with our consolidated financial statements and the related notes appearing elsewhere in this prospectus and the information in the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

	Period from March 8, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020	Three Months Ended March 31, 2020	Three Months Ended March 31, 2021
Statement of Operations and Comprehensive Loss Data (in thousands):				
Revenue:				
Product sales	$ 3,555	$ 5,131	$ 1,048	$ 1,799
Royalties	1,250	1,445	339	528
Total revenue	4,805	6,576	1,387	2,327
Cost of revenue	2,677	2,951	574	1,025
Gross profit	2,128	3,625	813	1,302
Operating expenses:				
Research and development	3,318	8,925	1,963	2,878
Sales and marketing	1,878	6,931	1,299	2,275
General and administrative	3,908	4,130	1,146	2,413
Total operating expenses	9,104	19,986	4,408	7,566
Loss from operations	(6,976)	(16,361)	(3,595)	(6,264)
Other income (expense):				
Interest expense	(1,490)	(690)	(192)	(241)
Change in fair value of derivative liabilities	62	(880)	(93)	(296)
Loss on extinguishment of debt	—	—	—	(618)
Other income (expense), net	102	(74)	—	(19)
Loss before provision for income taxes	(8,302)	(18,005)	(3,880)	(7,438)
Provision for income taxes	—	(5)	—	(4)
Net loss and comprehensive loss	(8,302)	(18,010)	(3,880)	(7,442)
Net loss attributable to common stockholders	$ (8,302)	$ (18,010)	$ (3,880)	$ (7,442)
Net loss per share attributable to common stockholders—basic and diluted	$ (1.66)	$ (3.60)	$ (0.78)	$ (1.43)
Weighted average common stock outstanding—basic and diluted	5,000,000	5,001,538	5,000,000	5,193,098
Pro forma net loss per share attributable to common stockholders—basic and diluted (unaudited)[1]		$ (0.82)		$ (0.34)
Pro forma weighted average common stock outstanding—basic and diluted (unaudited)[1]		21,316,634		21,508,194

	December 31,		March 31,
	2019	2020	2021
Balance Sheet Data (in thousands):			
Cash	$ 29,144	$ 13,463	$ 17,834
Working capital[(2)]	29,712	11,556	16,313
Total assets	38,761	26,863	31,318
Long-term debt, net of discount, including current portion	4,472	4,686	14,372
Derivative liabilities	654	1,533	2,403
Convertible preferred stock	38,914	38,914	38,914
Total stockholders' equity (deficit)	(7,503)	(25,459)	(32,701)

(1) The unaudited pro forma basic and diluted weighted-average shares of common stock outstanding used in the calculation of unaudited pro forma basic and diluted net loss per share attributable to common stockholders for the year ended December 31, 2020 and quarter ended March 31, 2021 have been prepared to give effect to (i) the automatic conversion of all outstanding shares of our convertible preferred stock into 15,079,329 shares of our common stock immediately prior to the closing of this offering and (ii) the automatic exercise of all outstanding warrants issued to SGI into an aggregate of 1,235,767 shares of our common stock immediately prior to the closing of this offering, as if this offering had occurred on the later of the beginning of each period or the issuance date of the convertible preferred stock or warrants issued to SGI.

(2) We define working capital as current assets less current liabilities. See our financial statements included elsewhere in this prospectus for further details regarding our current assets and current liabilities.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Unless the context otherwise requires, all references in this section to the "Company," "we," "us, or "our" refer to the business of Codex DNA, Inc. and its subsidiaries.

You should read the following discussion and analysis of our financial condition and results of operations together with the "Selected Consolidated Financial Data" section of this prospectus and our consolidated financial statements and the related notes appearing elsewhere in this prospectus. This discussion contains forward-looking statements that reflect our plans, estimates, and beliefs that involve risks and uncertainties. As a result of many factors, such as those set forth under the "Risk Factors" and "Special Note Regarding Forward-Looking Statements" sections and elsewhere in this proxy statement/prospectus, our actual results may differ materially from those anticipated in these forward-looking statements.

Overview

We believe that we are a leading synthetic biology company focused on enabling researchers to rapidly, accurately and reproducibly build or "write" high-quality synthetic DNA and mRNA that is ready to use in many downstream synthetic biology enabled markets. Our synthetic biology solution addresses the bottlenecks across the multi-step process of building DNA and mRNA, as well as the significant limitations of existing solutions that prevent the rapid building of virtually error-free DNA and mRNA at a useable scale. A key part of our solution is our BioXp system, an end-to-end automated workstation that fits on the benchtop and is broadly accessible due to its ease-of-use and hands-free automation. We believe our BioXp system can democratize synthetic biology by simplifying the process of building DNA and mRNA, thereby accelerating the discovery, development and production of novel high-value products, including antibody-based biologics, mRNA-based vaccines and therapeutics and precision medicines.

Our synthetic biology solution is comprised of our:

- *BioXp system*: which we believe is the first commercially available push-button, walkaway, end-to-end automated workstation that empowers researchers to go from a digital DNA sequence to endpoint-ready synthetic DNA in as few as 8 hours and mRNA in less than 24 hours, exclusive of shipment time;
- *BioXp portal*: a user-friendly online portal that offers an intuitive guided workflow and design tools for building new DNA sequences and assembling them into vector(s) of choice;
- *BioXp kits*: contain all the necessary building blocks and reagents, including our proprietary Gibson Assembly branded reagents, for specific synthetic biology workflow applications;
- *Cloud-based scripts*: product-specific and pre-validated scripts that optimize and simplify the use of the BioXp kits on the BioXp system;
- *Benchtop reagents*: contain all the reagents necessary to proceed with a specific synthetic biology workflow on the benchtop using products generated on the BioXp system; and
- *Biofoundry Services*: enable a customer to order and receive any of the BioXp system endpoint-ready products, such as genes, clones, cell-free amplified DNA and variant libraries.

We have developed and commercialized products that include BioXp systems, including our current BioXp 3250 system, BioXp kits for generating a wide array of synthetic DNA and mRNA, and benchtop reagents that complement the automated synthetic biology workflow applications and workflow solutions. We believe that our integrated BioXp systems and BioXp kits represent the industry's leading synthetic biology workflow automation solution and provide us with a first mover advantage in the rapidly growing synthetic biology market. As part of our continuing effort to improve the processes of synthetic biology, we are currently developing next-generation BioXp systems and BioXp kits with the goal of transforming rapid demand-response workflows in synthetic biology and consolidating supply chains and enabling global distributed manufacturing for discovery, pre-clinical and clinical applications. We also use our BioXp 3250 system, BioXp kits and benchtop reagents to perform services for customers.

We were incorporated in the state of Delaware in March 2011, as Synthetic Genomics Solution, Inc., a wholly owned subsidiary of Synthetic Genomics, Inc. (SGI). We changed our name to SGI-DNA, Inc. (SGI-DNA) in February 2013. On March 8, 2019, SGI sold SGI-DNA to GATTACA Mining, LLC (GATTACA) by entering into a stock purchase agreement to sell all of our outstanding common and preferred stock in exchange for a $10 million non-recourse

promissory note (the Purchase Note) and a warrant to purchase common stock equal to 6% of the shares of common stock issued and outstanding as of the time of exercise, which will automatically be exercised immediately prior to the consummation of an initial public offering. This warrant and participation right were later amended in August 2019 to provide a warrant on 1,081,745 shares of common stock, a participation right to receive property with a value equal to the net proceeds a person would receive as a holder of 1,081,745 shares of common stock in a change of control transaction, and additional warrants equal to 3% of the shares sold in future equity financings prior to an initial public offering or certain change of control transactions. In connection with our Series A-1 convertible preferred stock financing in December 2019, we issued SGI warrants in connection with the participation right described above to purchase Series A-1 convertible preferred stock. These warrants have an exercise price of $3.61 per share. The common stock warrant has an aggregate exercise price of $3.00. We were a co-borrower with GATTACA on the Purchase Note. See the section titled “Certain Relationships and Related Party Transactions” for more information regarding this transaction. Subsequently, we focused our efforts on launching new synthetic biology products and expanding our distribution and marketing efforts on our existing, research using only products. We also changed our name to Codex DNA, Inc. in March 2020.

We commercially launched our current synthetic biology solution in September 2019, which now includes the BioXp 3250 system, BioXp kits with associated cloud-based application scripts, and benchtop reagent kits. Since the introduction of our solution through June 1, 2021, we have launched eight BioXp kits, three benchtop reagent kits, and several other synthetic biology products, including 12 SARS-CoV-2 full-length genomes and RNA controls as well as our Vmax X2 cells. We have placed approximately 160 BioXp systems globally. We target customers in the fields of personalized medicine, biologics drug discovery, vaccine development, genome editing and cell and gene therapy. As of June 1, 2021, our customer base was composed of over 300 customers and included 15 of the 25 largest biopharmaceutical companies in the world ranked by 2020 revenue, excluding affiliates of those companies. Our customer base also includes leading academic research institutions, government institutions, CROs and synthetic biology companies.

Our BioXp system placements in 2020 represent the following markets and customer segments:

- *Areas of focus*: 45% biologics, 27% vaccine development, 14% cell and gene therapy, 12% genome editing and 2% agriculture.
- *Research area*: 37% immuno-oncology, 35% infectious disease, 18% genetic/rare disease and 10% other.
- *Application*: 23% vaccines, 21% protein engineering, 20% cell engineering, 20% antibody engineering and 16% nucleic acid engineering.
- *Customer type*: 43% biotechnology development, 23% academic institutions, 14% pharmaceutical development, 12% other and 8% contract research.

We estimate that our 2020 product sales mix statistics were as follows:

- *Sales mix*: 57% BioXp systems, 19% BioXp kits, 16% biofoundry services and 8% benchtop reagents.
- *Geographic mix*: 67% North America, 22% Europe/Middle East/Africa and 11% Asia Pacific.
- *Distribution mix*: 84% direct sales and 16% distributors.

Since our inception as a stand-alone company on March 8, 2019, we have devoted substantially all of our efforts to raising capital, organizing, and staffing our company, commercializing existing products and developing new products. To date, we have funded our operations with proceeds from the issuance of convertible notes and convertible preferred stock, payments received from royalties and product sales, and proceeds from borrowings under our credit facilities. Through March 31, 2021, we had received gross proceeds of $32.8 million from sales of our convertible preferred stock, $6.8 million from the issuance of our convertible notes and and gross proceeds of $20.0 million through borrowings under our loan and security agreements with Oxford Finance LLC (the 2019 Loan Agreement) and Silicon Valley Bank (the 2021 Loan Agreement).

We have incurred significant operating losses since our inception. During the period from March 8, 2019 to December 31, 2019 and the year ended December 31, 2020, our revenue was $4.8 million and $6.6 million, respectively. During the three months ended March 31, 2020 and 2021, our revenue was $1.4 million and $2.3 million, respectively. As of March 31, 2021, we had cash of $17.8 million. Our ability to generate product revenue sufficient to achieve profitability will depend on the successful development and commercialization of our products.

We reported net losses of $8.3 million, $18.0 million, $3.9 million, and $7.4 million for the period from March 8, 2019 to December 31, 2019, for the year ended December 31, 2020, and for the three months ended March 31, 2020 and 2021, respectively. As of March 31, 2021, we had an accumulated deficit of $33.8 million.

Impact of COVID-19

In December 2019, a novel strain of coronavirus, which causes the disease known as COVID-19, was reported to have surfaced in Wuhan, China. Since then, COVID-19 coronavirus has spread globally. In March 2020, the World Health Organization declared the COVID-19 outbreak a pandemic. The ongoing COVID-19 global and national health emergency has caused significant disruption in the international and United States economies and financial markets. The spread of COVID-19 has caused illness, quarantines, cancellation of events and travel, business and school shutdowns, reduction in business activity and financial transactions, labor shortages, supply chain interruptions and overall economic and financial market instability.

In response to public health directives and orders and to help minimize the risk of the virus to employees, we have taken precautionary measures, including implementing work-from home policies for certain employees. The COVID-19 pandemic has the potential to significantly impact our manufacturing supply chain, distribution or logistics and other services. Additionally, our service providers and their operations may be disrupted, temporarily closed or experience worker or supply shortages, which could result in additional disruptions or delays in shipments of purchased equipment, materials or the development of new products. To date, we have not suffered material supply chain disruptions.

The COVID-19 pandemic has had a mixed impact on our revenues. We sell our products to pharmaceutical and academic laboratories. Many such laboratories temporarily closed or reduced work hours due to the pandemic which reduced sales to existing customers. Furthermore, many business and academic conferences were cancelled and travel restrictions were imposed world-wide, which impacted customer acquisition and reduced sales. However, we were able to quickly develop new COVID-19 specific products and sell these and our existing products to entities working on COVID-19 products and vaccine development, which contributed to revenue growth.

We are not able to estimate the duration of the pandemic and potential impact on the business if disruptions or delays in shipments of product occur. In addition, a severe prolonged economic downturn could result in a variety of risks to the business, including weakened demand for product and a decreased ability to raise additional capital when needed on acceptable terms, if at all. As the situation continues to evolve, we will continue to closely monitor market conditions and respond accordingly.

Components of Results of Operations

Revenue

Revenue consists of product sales and royalties. Net product sales primarily consist of sales of our BioXp systems, BioXp kits, benchtop reagents and biofoundry services. In providing biofoundry services, we use our own instruments and reagents to create DNA products for our customers. Royalties consist of fees charged for the grant of non-exclusive rights of our patents to third parties.

Historically, revenue growth has come from BioXp systems, BioXp kits and biofoundry services. Growth in BioXp systems sales has come from investments in direct and indirect distribution channels and new product introductions. Growth in BioXp kit sales has come from the growth of the installed base of BioXp systems and new application kits. Biofoundry services were launched late in 2019. Growth in biofoundry services has been driven by new product introductions and prospective customers using biofoundry services to validate our BioXp systems. We have also seen an increase in demand for our biofoundry services driven by COVID-19-related access problems to researchers' labs.

Cost of Revenue

Cost of revenue primarily consists of material and labor costs, freight and indirect overhead costs associated with sales of our BioXp instruments, BioXp reagents, benchtop reagents and biofoundry services. Cost of revenue also includes period costs related to certain inventory adjustment charges, and unabsorbed manufacturing and overhead costs, as well as any write-offs of inventory that fail to meet specification or are otherwise no longer suitable for commercial manufacture. Cost of revenue is expected to increase as revenue increases.

Research and Development Expenses

Research and development expenses include pre-production costs related to the design, development and improvement of our products and technologies, including employee compensation, benefits and related costs of sustaining our engineering teams, project material costs, third party fees paid to consultants, prototype development expenses, legal costs related to intellectual property, patent fees, and other costs incurred in the product design and development process. We expense research and development costs as incurred. Non-refundable advance payments that we make for goods or services to be received in the future are recorded as prepaid expenses. The prepaid amounts are expensed as the related goods are delivered or the services are performed, or when it is no longer expected that the goods will be delivered or the services rendered.

We expect that our research and development expenses will increase significantly, both in the near term and subsequently, in connection with our planned product development activities. At this time, we cannot accurately estimate or know the nature, timing and costs of the efforts that will be necessary to complete the development of any of our future products. The successful development and commercialization of our future products is highly uncertain. This is due to the numerous risks and uncertainties associated with product development and commercialization, including but not limited to the following:

- we can never be certain that we can solve any technical challenge;
- if such solution can be found, we can never be certain of the timing of such a solution;
- once we find a technical solution, we cannot be certain that the solution will be commercially feasible; and
- any solution may not be desired by our customers.

These uncertainties with respect to the development of any of our future products could significantly impact the costs and timing associated with the development of these products.

Sales and Marketing Expenses

Sales and marketing expenses include employee compensation, including compensation and benefits for sales, marketing, customer service, corporate development personnel and related administrative expenses. In addition, sales and marketing expenses also include costs for international employees and facility overhead based on headcount. We anticipate that our sales and marketing expenses will increase in the future as we increase our headcount to support increasing sales and expanding our international operations. Sales and marketing costs are expensed as incurred.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries and related costs for personnel in executive, finance, and administrative functions. General and administrative expenses also include legal fees relating to corporate matters; professional fees for accounting, auditing, tax and administrative consulting services; insurance costs, administrative travel expenses, other operating costs; and facility costs not otherwise included in research and development or sales and marketing expenses.

We anticipate that our general and administrative expenses will increase in the future as we increase our administrative headcount to support our continued research, development and commercialization activities. We also anticipate that we will incur significantly increased accounting, audit, legal, regulatory, compliance and director and officer insurance costs as well as investor and public relations expenses associated with operating as a public company. General and administrative expenses are expensed as incurred.

Other Income (Expense)

Interest Expense

Interest expense primarily consists of cash and non-cash interest on our term loan facilities, convertible notes, the Purchase Note, and our finance leases.

Change in Fair Value of Derivative Liabilities

In connection with the divestiture of our capital stock by SGI in March of 2019, SGI retained a participation right whereby SGI could receive property with a value equal to the net proceeds a person would receive as a holder of 6% of our common stock in a change of control transaction. SGI was also issued a warrant to purchase common stock,

equal to 6% of the shares of common stock issued and outstanding as of the time of exercise, which will automatically be exercised immediately prior to the consummation of an initial public offering. This warrant and participation right were later amended in August 2019 to provide a warrant on 1,081,745 shares of common stock, a participation right to receive property with a value equal to the net proceeds a person would receive as a holder of 1,081,745 shares of common stock in a change of control transaction, and additional warrants equal to 3% of the shares sold in future equity financings prior to an initial public offering or certain change of control transactions. The common stock warrant has an aggregate exercise price of $3.00. We classify this participation right as a liability on our consolidated balance sheets that we remeasure to fair value at each reporting date. We recognize changes in the fair value of this participation right as a component of other income (expense) in our consolidated statements of operations and comprehensive loss.

In connection with our Series A-1 convertible preferred stock financing in December 2019, we issued SGI warrants in connection with the participation right described above to purchase Series A-1 convertible preferred stock. The Series A-1 warrant has an exercise price of $3.61 per share. We classify these warrants as a liability on our consolidated balance sheets that we remeasure to fair value at each reporting date. We recognize changes in the fair value of the warrant liability as a component of other income (expense) in our consolidated statements of operations and comprehensive loss. We will continue to recognize changes in the fair value of the warrant liability until the warrants are exercised, expire or qualify for equity classification. Immediately prior to the closing of this offering, the Series A-1 convertible preferred stock warrants will be net exercised into shares of common stock, and the fair value of the warrant liability at that time will be reclassified to stockholders equity.

In connection with the 2019 Loan Agreement, we identified a contingent liability to pay a success fee to the lender as well as a contingent put option liability related to a contingent interest feature and acceleration clause. Under the 2019 Loan Agreement we issued a total of $5.0 million in secured promissory notes. The success fee contingent liability and the contingent put option liability are valued and separately accounted for in the accompanying consolidated financial statements. The fair value of the success fee was recorded as a discount to the notes and included within derivative liabilities on our consolidated balance sheets. We also include the contingent put option liability within derivative liabilities on our consolidated balance sheets as a long-term liability. We remeasure both derivatives to fair value at each reporting date, and recognize changes in the fair value as a component of other income (expense) in our consolidated statements of operations and comprehensive loss. We will continue to recognize changes in the fair value of the success fee contingent liability until the success fee is paid. The contingent put option liability was extinguished when the 2019 Loan Agreement was repaid in March 2021.

In connection with the 2021 Loan Agreement, we identified a contingent put option liability related to a contingent interest feature and acceleration clause. The contingent put option liability is valued and separately accounted for in the accompanying consolidated financial statements. The fair value of the contingent put option liability is within derivative liabilities on our consolidated balance sheets as a long-term liability. We remeasure the derivative to fair value at each reporting date, and recognize changes in the fair value as a component of other income (expense) in our consolidated statements of operations and comprehensive loss. Under the 2021 Loan Agreement we issued a warrant to purchase a number of shares of preferred stock. The warrant is currently exercisable for common stock at an exercise price of $3.61 per share. We classify these warrants as a liability on our consolidated balance sheets that we remeasure to fair value at each reporting date. We recognize changes in the fair value of the warrant liability as a component of other income (expense) in our consolidated statements of operations and comprehensive loss. We will continue to recognize changes in the fair value of the warrant liability until the warrants are exercised, expire or qualify for equity classification.

Other Income (Expense),Net

Other income (expense), net consists primarily of gains on the disposal of fixed assets and losses on the write off of intangible assets.

Income Taxes

Since our inception, we have not recorded any income tax benefits for the NOLs we have incurred in each year or for our earned research and development tax credits generated in each period, as we believe, based upon the weight of available evidence, that it is more likely than not that all of our NOLs and tax credit carryforwards will not be realized. As of December 31, 2019 and 2020, we had federal NOL carryforwards of $12.2 million and $28.4 million, respectively and state NOL carryforwards of $6.7 million and $15.9 million, respectively. The federal NOL carryforwards of $1.3 million generated before January 1, 2018 will begin to expire in 2034, but can be used to

offset up to 100% of taxable income. Amounts generated after December 31, 2017 will carryforward indefinitely, but will be subject to 80% taxable income limitation beginning in tax years after December 31, 2020, as provided by the CARES Act. We have recorded a full valuation allowance against our net deferred tax assets at each balance sheet date.

On March 27, 2020, the CARES Act was passed by the U.S. Congress and signed into United States law. The CARES Act, among other things, includes certain provisions for individuals and corporations; however, these benefits did not impact our income tax provisions in the period or year presented given the existence of the full valuation allowance.

Results of Operations

Comparison of the Three Months ended March 31, 2020 and 2021

The following table summarizes our results of operations for the three months ended March 31, 2020 and 2021:

	Three Months ended March 31,		
	2020	2021	Change
	(in thousands)		
Revenue			
Product sales	$ 1,048	$ 1,799	$ 751
Royalties	339	528	189
Total revenue	1,387	2,327	940
Cost of revenue	574	1,025	451
Gross profit	813	1,302	489
Operating expenses:			
Research and development	1,963	2,878	915
Sales and marketing	1,299	2,275	976
General and administrative	1,146	2,413	1,267
Total operating expenses	4,408	7,566	3,158
Loss from operations	(3,595)	(6,264)	(2,669)
Other income (expense):			
Interest expense, net	(192)	(241)	(49)
Change in fair value of derivative liabilities	(93)	(296)	(203)
Loss on extinguishment of debt	—	(618)	(618)
Other expense, net	—	(19)	(19)
Total other expense, net	(285)	(1,174)	(889)
Loss before provision for income taxes	(3,880)	(7,438)	(3,558)
Provision for income taxes	—	(4)	(4)
Net loss	$ (3,880)	$ (7,442)	$ (3,562)

Revenue

The following table summarizes our revenue for the three months ended March 31, 2020 and 2021:

	Three Months ended March 31,		
	2020	2021	Change
	(in thousands)		
Product sales	$ 1,048	$ 1,799	$ 751
Royalties	339	528	189
Total revenue	$ 1,387	$ 2,327	$ 940

Revenue for the three months ended March 31, 2021 was $2.3 million, compared to $1.4 million for the three months ended March 31, 2020. The increase of $0.9 million was primarily driven by new product introductions. The 3250 BioXp system, which launched in late 2020, led to a $0.5 million increase in product sales, along with a $0.1 million increase in biofoundry services due to the launch of a new product line in late 2019, a $0.1 million increase in reagent product sales and a $0.2 million increase in royalties.

Royalty revenue was largely attributable to one customer, New England Biolabs, Inc. (NEB), which accounted for 24% of revenue for the three months ended March 31, 2020 and 20% for the three months ended March 31, 2021. Under the terms of the Confidential Settlement Agreement with NEB (the Confidential Settlement Agreement), NEB paid the Company a lump sum of $1.8 million and has agreed to pay the Company a royalty rate for certain products commercialized as of the date of the agreement and for products introduced after such date if such products are formulated using substantially the same enzymes or methods as the royalty-bearing products. We have requested confidential treatment from the SEC for the exact royalty rate, which is in the 10-20% range. This royalty will expire upon the earlier of the expiration of all licensed patents or the entry of a final judgment declaring the licensed patents invalid or unenforceable. Also under the terms of the Confidential Settlement Agreement, NEB has agreed to continue to offer for sale the royalty-bearing products through at least September 30, 2025, after which time it may stop selling the royalty bearing products upon sixty days' notice.

Cost of Revenue

The following table summarizes our cost of revenue for the three months ended March 31, 2020 and 2021:

	Three Months ended March 31,		
	2020	2021	Change
	(in thousands)		
Standard costs	$ 376	$ 885	$ 509
Shipping charges	66	79	13
Other costs	132	61	(71)
Total cost of revenue	$ 574	$ 1,025	$ 451

Cost of revenue for the three months ended March 31, 2021 was $1.0 million, compared to $0.6 million for the three months ended March 31, 2020. The increase of $0.5 million was primarily driven by a $0.5 million increase related to standard costs driven by increasing units sold. These increases were offset by $0.1 million decrease in other costs. Other costs are composed of overhead, indirect costs and manufacturing variances. The decrease in other costs was primarily driven by reduced manufacturing variances.

Research and Development Expenses

The following table summarizes our research and development expenses for the three months ended March 31, 2020 and 2021:

	Three Months ended March 31,		
	2020	2021	Change
	(in thousands)		
Personnel expenses (including stock-based compensation)	$ 1,182	$ 1,745	$ 563
Professional services	345	534	189
Facility related and other	436	599	163
Total research and development expenses	$ 1,963	$ 2,878	$ 915

Research and development expenses for the three months ended March 31, 2021 was $2.9 million, compared to $2.0 million for the three months ended March 31, 2020. The increase of $0.6 million in personnel expenses was due to our increase in headcount related to our product development efforts. The increase of $0.2 million in professional services is primarily due to increases in third-party consulting and temporary labor costs related to our product development efforts. The increase of $0.2 million in facility related and other expenses is directly attributable to the increases in lab supplies. Additionally, during 2020, we expanded our San Diego office, which increased our overall facility costs.

Sales and Marketing Expenses

The following table summarizes our sales and marketing expenses for the three months ended March 31, 2020 and 2021:

	Three Months ended March 31,		
	2020	2021	Change
	(in thousands)		
Personnel expenses (including stock-based compensation)	$ 894	$ 1,834	$ 940
Professional services	164	277	113
Facility related and other	241	164	(77)
Total sales and marketing expense	$ 1,299	$ 2,275	$ 976

Sales and marketing expenses for the three months ended March 31, 2021 was $2.3 million, compared to $1.3 million for the three months ended March 31, 2020. The increase of $0.9 million in personnel expenses was due to an increase in headcount related to our sales and marketing efforts. The increase of $0.1 million in professional services is primarily due to increases in our digital marketing activities, partially offset by decreases in our marketing trade show and event activities in 2020.

General and Administrative Expenses

The following table summarizes our general and administrative expenses for the three months ended March 31, 2020 and 2021:

	Three Months ended March 31,		
	2020	2021	Change
	(in thousands)		
Personnel expenses (including stock-based compensation)	$ 873	$ 1,189	$ 316
Professional services	144	853	709
Facility related and other	129	371	242
Total general and administrative expenses	$ 1,146	$ 2,413	$ 1,267

General and administrative expenses for the three months ended March 31, 2021 was $2.4 million, compared to $1.1 million for the three months ended March 31, 2020.The increase of $0.3 million in personnel expenses was due to the timing of personnel additions and employee recruiting fees related to preparation for an initial public offering in 2021. The increase of $0.7 million in professional services is primarily due to increased costs of consulting, legal services and audit and accounting costs. The increase of $0.2 million in facility related and other costs is related to increases in office supplies.

Other Expense, Net

Other expense, net for the three months ended March 31, 2021 was a net expense of $1.2 million, compared to a net expense $0.3 million for the three months ended March 31, 2020. The change was primarily due to the loss on extinguishment of debt, the change in fair value of derivative liabilities, and an increase in interest expense as a result of the 2021 Loan Agreement. The fair value change of derivative liabilities was due to the increase in the value of the underlying preferred stock and the likelihood of an initial public offering.

Comparison of the period March 8, 2019 (inception) through December 31, 2019 and Year Ended December 31, 2020

The following table summarizes our results of operations for the period ended December 31, 2019 and for the year ended December 31, 2020:

	Period from March 8, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020	Change
		(in thousands)	
Revenue			
Product sales	$ 3,555	$ 5,131	$ 1,576
Royalties	1,250	1,445	195
Total revenue	4,805	6,576	1,771
Cost of revenue	2,677	2,951	274
Gross profit	2,128	3,625	1,497
Operating expenses:			
Research and development	3,318	8,925	5,607
Sales and marketing	1,878	6,931	5,053
General and administrative	3,908	4,130	222
Total operating expenses	9,104	19,986	10,882
Loss from operations	(6,976)	(16,361)	(9,385)
Other income (expense):			
Interest (expense) income, net	(1,490)	(690)	800
Change in fair value of derivative liabilities	62	(880)	(942)
Other income (expense), net	102	(74)	(176)
Total other income (expense), net	(1,326)	(1,644)	(318)
Loss before provision for income taxes	(8,302)	(18,005)	(9,703)
Provision for income taxes	—	(5)	(5)
Net loss	$ (8,302)	$ (18,010)	$ (9,708)

Revenue

The following table summarizes our revenue for the period ended December 31, 2019 and for the year ended December 31, 2020:

	Period from March 8, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020	Change
	(in thousands)		
Product sales	$ 3,555	$ 5,131	$ 1,576
Royalties	1,250	1,445	195
Total revenue	$ 4,805	$ 6,576	$ 1,771

Revenue for the period ended December 31, 2019 was $4.8 million, compared to $6.6 million for the year ended December 31, 2020. The increase of $1.8 million was primarily driven by a $1.6 million increase in product sales of BioXp instruments, a $0.8 million increase in biofoundry services due to the launch of a new product line in late 2019, a $0.3 million increase in reagent product sales, and a $0.2 million increase in royalties partially offset by a $1.1 million reduction due to the termination of a significant supply and service agreement with one of our customers, Gritstone Oncology, Inc. The revenues from this agreement, which are not expected to recur, accounted for 23% of revenue for the period ended December 31, 2019 and 0% for the period ended December 31, 2020.

Royalty revenue was largely attributable to royalties paid by NEB under the Confidential Settlement Agreement, and accounted for 26% of revenue for the period ended December 31, 2019 and 21% for the period ended December 31, 2020.

In 2020, the company developed several COVID-19 specific products in the biofoundry services and benchtop reagent product lines. Combined, these products accounted for 11% of revenue in the year ended December 31, 2020. In the future, we expect sales of COVID-19 specific products to decline.

Cost of Revenue

The following table summarizes our cost of revenue for the period ended December 31, 2019 and for the year ended December 31, 2020:

	Period from March 8, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020	Change
	(in thousands)		
Standard costs	$ 1,192	$ 1,970	$ 778
Shipping charges	134	265	131
Other costs	1,351	716	(635)
Total cost of revenue	$ 2,677	$ 2,951	$ 274

Cost of revenue for the period ended December 31, 2019 was $2.7 million, compared to $3.0 million for the year ended December 31, 2020. The increase of $0.3 million was primarily driven by a $0.8 million increase related to standard costs and a $0.1 million increase related to shipping charges driven by increasing units sold. These increases were offset by $0.6 million decrease in other costs. Other costs are composed of overhead, indirect costs, and manufacturing variances. The decrease in other costs was primarily driven by reduced manufacturing variances.

Research and Development Expenses

The following table summarizes our research and development expenses for the period ended December 31, 2019 and for the year ended December 31, 2020:

	Period from March 8, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020	Change
		(in thousands)	
Personnel expenses (including stock-based compensation)	$ 2,150	$ 5,300	$ 3,150
Professional services	107	1,911	1,804
Facility related and other	1,061	1,714	653
Total research and development expenses	$ 3,318	$ 8,925	$ 5,607

Research and development expenses for the period ended December 31, 2019 were $3.3 million, compared to $8.9 million for the year ended December 31, 2020. The increase of $3.2 million in personnel expenses was due to our increase in headcount related to our product development efforts. The increase of $1.8 million in professional services is primarily due to increases in third-party consulting and temporary labor related to our product development efforts. The increase of $0.7 million in facility related and other expenses is directly attributable to the increases in personnel. Additionally, during 2020, we expanded our San Diego office, which increased our overall facility costs.

Sales and Marketing Expenses

The following table summarizes our sales and marketing expenses for the period ended December 31, 2019 and for the year ended December 31, 2020:

	Period from March 8, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020	Change
		(in thousands)	
Personnel expenses (including stock-based compensation)	$ 1,205	$ 5,055	$ 3,850
Professional services	363	1,207	844
Facility related and other	310	669	359
Total sales and marketing expense	$ 1,878	$ 6,931	$ 5,053

Sales and marketing expenses for the period ended December 31, 2019 were $1.9 million compared to $6.9 million for the year ended December 31, 2020. The increase of $3.9 million in personnel expenses was due to our increase in headcount related to our sales and marketing efforts. The increase of $0.8 million in outside professional services is primarily due to increases in our marketing activities in 2020. The increase of $0.4 million in facility related and other expenses is directly attributable to the increases in headcount of sales and marketing personnel.

General and Administrative Expenses

The following table summarizes our general and administrative expenses for the period ended December 31, 2019 and for the year ended December 31, 2020:

	Period from March 8, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020	Change
		(in thousands)	
Personnel expenses (including stock-based compensation)	$ 2,000	$ 2,411	$ 411
Professional services	1,156	794	(362)
Facility related and other	752	925	173
Total general and administrative expenses	$ 3,908	$ 4,130	$ 222

General and administrative expenses for the period ended December 31, 2019 were $3.9 million, compared to $4.1 million for the year ended December 31, 2020. The increase of $0.4 million in personnel expenses was due to our increase in headcount related to preparation for an initial public offering in 2021. The decrease of $0.4 million in professional services is primarily due to reduced costs of consulting and legal services, partially offset by increases to audit and accounting costs. The increase of $0.2 million in facility related expenses was due to expansions of the square footage under rent in late 2019 and again early in 2020.

Other Income (Expense), Net

Other Income (expense), net for the period ended December 31, 2019 was a net expense of $1.3 million, compared to a net expense of $1.6 million for the year ended December 31, 2020. The change was primarily due to the change in fair value of derivative liabilities offset by a reduction in interest expense. The fair value change was due to the increase in the value of the underlying preferred stock, the likelihood of an initial public offering and reduced time to maturity of the term loan. The reduction in interest resulted primarily from the repayment in full of the Purchase Note.

Liquidity and Capital Resources

Sources of Liquidity

Since our inception, we have incurred significant operating losses. To date, we have funded our operations with proceeds from the sales of convertible notes, convertible preferred stock, payments received for royalties and product sales, and proceeds from borrowings. Through March 31, 2021, we have received gross proceeds of $32.8 million from sales of our convertible preferred stock, $6.8 million from the issuance of convertible notes and net proceeds of $15.0 million through borrowings under our 2019 Loan Agreement and our 2021 Loan Agreement. As of March 31, 2021, we had cash of $17.8 million. Without giving effect to the anticipated net proceeds from this offering, we expect that our existing cash as of March 31, 2021, will be sufficient to fund our operating expenses and capital expenditures through the end of 2021. We believe liquidity provided from our existing cash and available borrowings raise substantial doubt about our ability to fund our operating expenses and capital expenditures for the twelve months following the issuance date of our 2020 consolidated financial statements. We will need to raise additional capital to finance our operations, which cannot be assured.

We will continue to incur significant expenses and expect to incur increasing operating losses for the foreseeable future. We also expect that our expenses and capital expenditures will increase substantially in connection with our ongoing activities, particularly as we:

- seek to develop new products and services and hire additional research, development and engineering personnel;
- expand our distribution and marketing infrastructure to further commercialize current and future products and support our growing customer base;
- add operational, financial, and administrative systems and personnel to support growing sales;

- maintain, expand, enforce, defend and protect our intellectual property portfolio and provide reimbursement of third-party expenses related to our patent portfolio; and
- operate as a public company.

As a result, we will need substantial additional funding to support our continuing operations and pursue our growth strategy. Until such time as we can generate significant revenue from product sales, if ever, we expect to finance our operations through a combination of equity offerings, debt financings, or other capital sources, including collaborations with other companies, and other strategic transactions. We may be unable to raise additional funds or enter into such other agreements or arrangements when needed on favorable terms, or at all. If we fail to raise capital or enter into such agreements as, and when, needed, we may have to significantly delay, scale back, or discontinue the development and commercialization of one or more of our products.

The field of synthetic biology is rapidly developing and subject to numerous risks and uncertainties associated with new technologies and novel products. Consequently, we are unable to accurately predict the timing or amount of increased product sales or expenses or when, or if, we will be able to achieve or maintain profitability. Even if we are able to continue to generate significant product sales, we may not become profitable. If we fail to become profitable or are unable to sustain profitability on a continuing basis, then we may be unable to continue our operations at planned levels and be forced to reduce or terminate our operations.

Cash Flows

Comparison of the Three Months ended March 31, 2020 and 2021

The following table summarizes our consolidated cash flows for the three months ended March 31, 2020 and 2021:

	Three Months ended March 31,	
	2020	2021
	(in thousands)	
Net cash used in operating activities	$ (3,393)	$ (5,117)
Net cash used in investing activities	(10)	(99)
Net cash (used in) provided by financing activities	(27)	9,587
Net (decrease) increase in cash	$ (3,430)	$ 4,371

Operating Activities

During the three months ended March 31, 2020, we used $3.4 million of cash in operations, primarily resulting from our net loss of $3.9 million, partially offset by non-cash charges of $0.5 million. Non-cash charges consisted primarily of depreciation and amortization expense of $0.2 million, the change in fair value of derivative liabilities of $0.1 million, and amortization of right-of-use assets of $0.1 million.

During the three months ended March 31, 2021, operating activities used $5.1 million of cash, primarily resulting from our net loss of $7.4 million, partially offset by non-cash charges of $1.5 million and net cash provided by changes in our operating assets and liabilities of $0.8 million. Non-cash charges consisted primarily of the loss on debt extinguishment of $0.6 million, depreciation and amortization expense of $0.2 million, amortization of our right-of-use operating lease asset of $0.2 million, and change in fair value of derivative liabilities of $0.3 million. Net changes in our operating assets and liabilities for the three months ended March 31, 2021 consisted primarily of a $1.3 million increase in accounts payable, accrued payroll and accrued liabilities, and a $0.6 million decrease in accounts receivable, partially offset by a $0.8 million increase in deposits, prepaid expenses and other current assets.

Investing Activities

During the three months ended March 31, 2020 and 2021, net cash used in investing activities was $10 thousand and $0.1 million, respectively, consisting of purchases of property and equipment.

Financing Activities

During the three months ended March 31, 2020, net cash used in financing activities was $27 thousand, consisting primarily of principal payments on leased equipment.

During the three months ended March 31, 2021, net cash provided by financing activities was $9.6 million, consisting primarily of proceeds from borrowings of $14.9 million from the issuance of debt from the 2021 Loan Agreement, partially offset by the $5.0 million repayment of debt from the 2019 Loan Agreement.

Comparison of the period March 8, 2019 (inception) through December 31, 2019 and Year Ended December 31, 2020

The following table summarizes our consolidated cash flows for the period ended December 31, 2019 and for the year ended December 31, 2020:

	Period from March 8, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020
	(in thousands)	
Net cash used in operating activities	$ (6,390)	$ (15,381)
Net cash used in investing activities	(79)	(204)
Net cash provided by (used in) financing activities	35,106	(96)
Net increase (decrease) in cash	$ 28,637	$ (15,681)

Operating Activities

During the period ended December 31, 2019, we used $6.4 million of cash in operations, primarily resulting from our net loss of $8.3 million, partially offset by net cash provided by changes in our operating assets and liabilities of $0.2 million and non-cash charges of $1.7 million. Net changes in our operating assets and liabilities for the period ended December 31, 2019 consisted primarily of a $0.7 million decrease in inventories, a $0.2 million increase in accounts payable, accrued payroll and accrued liabilities, and a $0.2 million increase in deferred rent, partially offset by a $0.9 million increase in accounts receivable. Non-cash charges consisted primarily of depreciation and amortization expense of $0.9 million, the change in fair value of derivative liabilities of $0.5 million, loss on disposal of assets of $0.2 million and non-cash interest on convertible notes of $0.1 million.

During the year ended December 31, 2020, operating activities used $15.4 million of cash, primarily resulting from our net loss of $18.0 million, partially offset by non-cash charges of $2.6 million. Non-cash charges consisted primarily of depreciation and amortization expense of $0.9 million as well as amortization of our right-of-use operating lease asset of $0.6 million and change in fair value of derivative liabilities of $0.9 million.

Investing Activities

During the period ended December 31, 2019 and the year ended December 31, 2020, net cash used in investing activities was $0.1 million and $0.2 million, respectively, consisting of purchases of property and equipment.

Financing Activities

During the period ended December 31, 2019, net cash provided by financing activities was $35.1 million, consisting primarily of net proceeds from the issuance of Series A convertible preferred stock and Series A-1 convertible preferred stock of $32.8 million. We also had borrowings of $11.3 million from the issuance of debt from convertible notes and a term loan, partially offset by the $8.9 million repayment of debt from the Purchase Note.

During the year ended December 31, 2020, net cash used in financing activities was $0.1 million, consisting primarily of principal payments on leased equipment.

2019 Loan and Security Agreement

On September 5, 2019, we entered into a Loan and Security Agreement with Oxford Finance LLC as the lender (the 2019 Loan Agreement). Under the 2019 Loan Agreement we borrowed a total of $5.0 million in secured loans.

These loans were repaid in full in March 2021. These loans bore interest at the greater of (i) 8.79% per annum and (ii) the sum of (a) the thirty (30) day U.S. LIBOR rate reported in The Wall Street Journal on the last Business Day of the month that immediately precedes the month in which the interest will accrue, plus (b) 6.38%. They would have matured on October 1, 2023 and were secured by substantially all of our assets, other than our intellectual property, which was subject to a negative pledge. In connection with the 2019 Loan Agreement, we have a contingent obligation to pay Oxford a success fee of $0.8 million upon the completion of this offering. Upon the loan's inception and on December 31, 2019, the fair value of this success fee contingent liability was estimated to be $0.4 million and was recorded as a derivative liability on our consolidated balance sheets with the corresponding discount applied against the notes. Issuance costs related to the loans, inclusive of the success fee contingent liability, were $0.5 million.

Payments on the loans were interest-only until May 1, 2021, followed by equal monthly principal payments and accrued interest through the scheduled maturity date of October 1, 2023.

We have identified a contingent liability to pay a success fee to the lender as well as a bifurcated compound derivative liability related to a contingent interest feature and acceleration clause (contingent put option). The success fee contingent liability and the bifurcated embedded derivative were valued and separately accounted for in the accompanying consolidated financial statements. The fair value of the success fee was recorded as a contingent liability within derivative liabilities on our consolidated balance sheets and corresponding discount to the loans under the 2019 Loan Agreement. We classify the contingent put option liability within derivative liabilities on our consolidated balance sheets. We remeasure both liabilities to fair value at each reporting date, and we recognize changes in the fair value as a component of other income (expense) in our consolidated statements of operations and comprehensive loss. We will continue to recognize changes in the fair value of the success fee contingent liability until the success fee is paid. The contingent put option liability was extinguished when the 2019 Loan Agreement was terminated in March 2021.

2021 Loan Agreement

On March 4, 2021, we entered into a Loan and Security Agreement with Silicon Valley Bank (SVB) as the lender (the 2021 Loan Agreement). Under the 2021 Loan Agreement, on March 5, 2021, we borrowed a $15.0 million senior secured term loan, the proceeds of which were used to repay all of our existing obligations under the 2019 Loan Agreement, with the remaining proceeds available for our working capital and general corporate purposes.

Under the 2021 Loan Agreement, SVB may elect to make a second term loan to us in a principal amount up to but not exceeding $5.0 million, as the lender may determine in the lender's sole discretion.

In connection with the 2021 Loan Agreement, we issued to SVB a warrant to purchase a number of shares of preferred stock (the Preferred Warrant). The Preferred Warrant is currently exercisable for common stock at an exercise price of $3.61 per share. The Preferred Warrant also provides for the grant of additional shares upon the disbursement of an advance under the 2021 Loan Agreement. Such additional shares will be equal to 1.5% of the principal amount of the advance divided by the warrant price. The Preferred Warrant may be exercised at any time, in whole or in part. Unless previously exercised, the Preferred Warrant will expire on March 4, 2031. No portion of the Preferred Warrant has been exercised.

The term loans bear interest at a per annum rate equal to the greater of (a) 4.0% above the prime rate and (b) 7.25%. The interest rate as of March 5, 2021 was 7.25% per annum. The loans are secured by substantially all of our assets, other than our intellectual property. We have also agreed not to encumber our intellectual property assets, except as permitted by the 2021 Loan Agreement.

The term loans mature on January 1, 2024; provided, the loan maturity date will be extended by one year to January 1, 2025, if SVB is satisfied that we have achieved at least $4.0 million in trailing three-month instruments and reagents revenue for any three-month period occurring after March 4, 2021 but ending on or before December 31, 2021, subject to confirmatory lender calls.

Payments on the term loans are interest-only until February 1, 2022, followed by equal principal payments and monthly accrued interest payments through the scheduled maturity date; provided, the interest-only period may be extended to August 1, 2022 if SVB is satisfied that we have achieved at least $4.0 million in trailing three-month

instruments and reagents revenue for any three-month period occurring after March 4, 2021, but ending on or before December 31, 2021, subject to confirmatory lender calls.

We may elect to prepay the term loans, in whole but not in part, at any time. If we elect to voluntarily prepay the term loans before the scheduled maturity date, we are required to pay the lender a prepayment fee, equal to 3.0% of the then outstanding principal balance if the prepayment occurs on or before March 4, 2022, 2.0% of the outstanding principal balance if the prepayment occurs after March 4, 2022, but on or before March 4, 2023, or 1.0% of the outstanding principal balance if the prepayment occurs after March 4, 2023, but on or before the scheduled maturity date. No prepayment fee is applicable to a mandatory prepayment of the loans upon an acceleration of the loans. Upon a voluntary or mandatory prepayment of the loans, we are also required to pay SVB's expenses and all accrued but unpaid interest on the loans through the prepayment date.

A final payment (the Final Payment) equal to $0.4 million will be due at the earlier of the maturity date, acceleration of the loans, or a voluntary or mandatory prepayment of the loans. The Final Payment is being accrued through interest expense using the effective interest method.

Under the 2021 Loan Agreement, we covenant to maintain as of the last day of each month, certain consolidated trailing three-month minimum revenue levels as set forth in the 2021 Loan Agreement.

The 2021 Loan Agreement includes customary representations and covenants that, subject to exceptions and qualifications, restrict our ability to do the following things: engage in mergers, acquisitions, and asset sales; transact with affiliates; undergo a change in control; engage in businesses that are not related to our existing business; add or change business locations; incur additional indebtedness; incur additional liens; make loans and investments; declare dividends or redeem or repurchase equity interests; and make certain amendments or payments in respect of any subordinated debt. In addition, the 2021 Loan Agreement contains customary affirmative covenants, including covenants regarding the payment of taxes and other obligations, maintenance of insurance, maintenance of our bank accounts, protection of our intellectual property, reporting requirements, compliance with applicable laws and regulations, and formation or acquisition of new subsidiaries.

The 2021 Loan Agreement also includes customary indemnification obligations and customary events of default, including, among other things, payment defaults, breaches of covenants following any applicable cure period, material misrepresentations, a failure of the loans or the lender's security interest in the collateral to have the priority as required under the 2021 Loan Agreement, a material adverse change as defined in the 2021 Loan Agreement (including without limitation as a result of a government approval having been revoked, rescinded, suspended, modified or not renewed), certain material judgments and attachments, and events relating to bankruptcy or insolvency. The 2021 Loan Agreement also contains a cross default provision under which, if a third party (under any agreement) has a right to accelerate indebtedness greater than $0.5 million, we would be in default of the 2021 Loan Agreement. During the continuance of an event of default, SVB may apply a default interest rate of an additional 5% to the outstanding loan balances, and SVB may declare all outstanding obligations immediately due and payable and may exercise other rights and remedies as set forth in the 2021 Loan Agreement and related loan documents. Acceleration would result in the payment of all outstanding loans, any default interest charged by the lender, all expenses of the lender and the Final Payment.

Funding Requirements

We expect our expenses to increase significantly in connection with our ongoing activities, particularly with respect to research and development efforts related to our future products and our efforts to expand sales of current products and to commercialize future products. In addition, upon the closing of this offering, we expect to incur additional costs associated with operating as a public company. The timing and amount of our operating and capital expenditures will depend largely on:

- the cost of developing new products that are commercially viable;
- the costs of marketing and selling our products globally; and
- the potential additional expenses attributable to adjusting our development plans (including any supply-related matters) due to the COVID-19 pandemic.

We believe that the net proceeds from this offering, together with our existing cash and available borrowings, will enable us to fund our operating expenses and capital expenditure requirements for the next twelve months.

Until such time, if ever, as we can generate substantial product revenue, we expect to finance our operations through a combination of equity offerings, debt financings, collaborations, strategic alliances and marketing, distribution or licensing arrangements. If we are unable to raise additional funds through equity or debt financings or other arrangements when needed, we may be required to delay, limit, reduce or terminate our research, product development or future commercialization efforts, or grant rights to develop and market products that we would otherwise prefer to develop and market ourselves.

Contractual Obligations and Commitments

The following table summarizes our commitments to settle contractual obligations at March 31, 2021:

	Payments Due by Period				
	Total	Less than 1 Year	1 to 3 Years	4 to 5 Years	More than 5 Years
	(in thousands)				
Operating lease commitments [1]	$ 3,899	$ 974	$ 2,038	$ 887	$ —
Finance lease commitments [2]	152	90	62	—	—
Debt obligations [3]	17,887	1,091	11,627	5,169	—
Total	$ 21,938	$ 2,155	$ 13,727	$ 6,056	$ —

(1) Consists of payments due for our lease of office space in San Diego, California that expires in January 2025.
(2) Consists of payments due for our leases of three pieces of equipment that expire between April 2021 and December 2022.
(3) Consists of the contractually required principal and interest payable under the 2021 Loan Agreement. For purposes of this table, the interest due under the 2021 Loan Agreement was calculated using an assumed interest rate of 7.25% per annum, which was the interest rate in effect as of March 31, 2021 and assumes no borrowings under the second term loan.

Off-Balance Sheet Arrangements

We did not have during the periods presented, and we do not currently have any, off-balance sheet arrangements, as defined in the rules and regulations of the SEC.

Critical Accounting Policies and Significant Judgments and Estimates

Our consolidated financial statements are prepared in accordance with GAAP. The preparation of our consolidated financial statements and related disclosures requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, costs and expenses, and the disclosure of contingent assets and liabilities in our consolidated financial statements. We base our estimates on historical experience, known trends and events, and various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. We evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ from these estimates under different assumptions or conditions. While our significant accounting policies are described in more detail in Note 2 to our audited consolidated financial statements included elsewhere in this prospectus, we believe that the following accounting policies are those most critical to the judgments and estimates used in the preparation of our consolidated financial statements.

Revenue Recognition

To date, our revenues have consisted primarily of payments received related to product sales and royalty agreements. We adopted the provisions of ASU 2014-09, Revenue from Contracts with Customers (Topic 606), (ASC 606), at inception. Under ASC 606, we recognize revenue when our customers obtain control of the goods, warranty services are delivered or royalties are earned.

Revenue for our product sales is recognized upon delivery to the customer. Revenue related to product warranty arrangements is deferred and recognized over time, as services are delivered. To determine the appropriate amount of revenue to be recognized for arrangements determined to be within the scope of ASC 606, we perform the following five steps: (i) identification of the promised goods or services in the contract; (ii) determination of whether

the promised goods or services are performance obligations including whether they are distinct in the context of the contract; (iii) measurement of the transaction price, including the assessment of the constraint on variable consideration; (iv) allocation of the transaction price to the performance obligations; and (v) recognition of revenue when, or as we satisfy each performance obligation. As part of the accounting for arrangements under ASC 606, we must use significant judgment to determine: (a) the performance obligations based on the determination under step (ii) above; (b) the transaction price under step (iii) above; and (c) the standalone selling price for each performance obligation identified in the contract for the allocation of transaction price in step (iv) above. We also use judgment to determine whether milestones or other variable consideration, except for royalties and sales-based milestones, should be included in the transaction price as described below. The transaction price is allocated to each performance obligation based on the relative stand-alone selling price of each performance obligation in the contract, and we recognize revenue based on those amounts when, or as, the performance obligations under the contract are satisfied.

The standalone selling price is the price at which an entity would sell a promised good or service separately to a customer. Management estimates the standalone selling price of each of the identified performance obligations in our customer contracts, maximizing the use of observable inputs. Because we have not sold the same goods or services in our contracts separately to any customers on a standalone basis and there are no similar observable transactions in the marketplace, we estimate the standalone selling price of each performance obligation in our customer arrangements based on our estimate of costs to be incurred to fulfil our obligations associated with the performance, plus a reasonable margin.

We determined that our only contract liability under ASC 606 is deferred revenue. Amounts received prior to revenue recognition are recorded as deferred revenue in the consolidated balance sheet. Amounts expected to be recognized as revenue within the 12 months following the consolidated balance sheet date are classified as deferred revenue, current in the consolidated balance sheet. Amounts not expected to be recognized as revenue within the 12 months following the consolidated balance sheet date are classified as deferred revenue, net of current portion in the consolidated balance sheet. Amounts are recorded as accounts receivable when our right to consideration is unconditional.

Product Revenue, Net

We recognize revenue on product sales when the customer obtains control of our product, which occurs at a point in time (upon delivery to the customer). We recognize revenue on installation and training when the service has been rendered and warranty revenue over the warranty term. Product revenues are recorded net of variable consideration, including discounts.

Product Returns

We generally do not accept product returns and have received an insignificant amount of returns to date.

Royalty Revenue

We recognize royalty revenue based on historical customer submissions and payments resulting from license agreements we have with customers. The license agreements require our customers to pay us a fixed tiered percentage of sales based on the technology that we have licensed to them. Our customers submit their usage and payments on a quarterly or semiannual basis.

Inventories

Inventories are stated at the lower of cost or net realizable value. Cost is computed using standard cost, which approximates actual cost on a first-in, first-out basis. Net realizable value is evaluated by considering obsolescence, excess levels of inventory, deterioration and other factors. Adjustments to reduce the cost of inventory to its net realizable value, if required, are made for estimated excess, obsolescence or impaired inventory. Excess and obsolete inventory is charged to cost of revenue and a new, lower-cost basis for that inventory is established and subsequent changes in facts and circumstances do not result in the restoration or increase in that newly established cost basis.

Goodwill

We test goodwill for impairment on an annual basis, or more frequently if events or changes in circumstances indicate that the asset might be impaired. Our goodwill impairment tests are performed at the enterprise level as we

have concluded that we have one reporting unit and that our chief operating decision maker is our chief executive officer and the executive management team. The fair value of the reporting unit was substantially in excess of the carrying value of the reporting unit at each date impairment was tested and consequently we have not recorded any impairment of goodwill.

Acquired Intangible Assets

Acquired intangible assets consist of rights to technologies and trade names. We engaged third party valuation specialists to assist us with the initial measurement of the fair value of acquired intangible assets. Acquired intangible assets, other than goodwill, are amortized over their estimated useful lives based upon the estimated economic value derived from the related intangible assets.

Stock-Based Compensation

We measure all stock-based awards granted to employees and directors based on their fair value on the date of the grant using the Black-Scholes option-pricing model for options. Compensation expense for those awards is recognized over the requisite service period, which is generally the vesting period of the respective award for the employees and directors.

For stock-based awards granted to non-employees, the measurement date for non-employee awards is the date of the grant. The compensation expense for non-employees is recognized in the same manner as if we had paid cash in exchange for the goods or services, which is generally the vesting period of the award.

We use the straight-line method to record the expense of awards with service-based vesting conditions. As inputs, the Black-Scholes option-pricing model uses the fair value of our common stock and assumptions we make for the volatility of our common stock, the expected term of our common stock options, the risk-free interest rate for a period that approximates the expected term of our common stock options, our expected dividend yield, and an expected forfeiture rate.

Determination of Fair Value of Common Stock

As there has been no public market for our common stock to date, the estimated fair value of our common stock has been determined by our board of directors as of the date of each option grant, with input from management, considering our most recently available third-party valuations of common stock and our board of directors' assessment of additional objective and subjective factors that it believed were relevant and which may have changed from the date of the most recent valuation through the date of the grant. These third-party valuations were performed in accordance with the guidance outlined in the American Institute of Certified Public Accountants' Accounting and Valuation Guide, Valuation of Privately-Held-Company Equity Securities Issued as Compensation. Our common stock valuations were prepared using either an option pricing method (OPM), or a hybrid method, both of which used market approaches to estimate our enterprise value. The hybrid method also used an income approach to estimate our enterprise value. The hybrid method is a probability-weighted expected return method (PWERM), where the equity value is calculated based on income and market approaches, and that resulting equity value is allocated to the company’s classes of stock in one or more scenarios using an OPM. The PWERM is a scenario-based methodology that estimates the fair value of common stock based upon an analysis of future values for the company, assuming various outcomes. The common stock value is based on the probability-weighted present value of expected future investment returns considering each of the possible outcomes available as well as the rights of each class of stock. The future value of the common stock under each outcome is discounted back to the valuation date at an appropriate risk-adjusted discount rate and probability weighted to arrive at an indication of value for the common stock. A discount for lack of marketability of the common stock is then applied to arrive at an indication of value for the common stock. The OPM treats common stock and preferred stock as call options on the total equity value of a company, with exercise prices based on the value thresholds at which the allocation among the various holders of a company's securities changes. Under this method, the common stock has value only if the funds available for distribution to stockholders exceeded the value of the preferred stock liquidation preferences at the time of the liquidity event, such as a strategic sale or a merger. In addition to considering the results of these third-party valuations, our board of directors considered various objective and subjective factors to determine the fair value of our common stock as of each grant date, including:

- the prices at which we sold shares of preferred stock and the superior rights and preferences of the preferred stock relative to our common stock at the time of each grant;

- the progress of our research and development programs;
- our stage of development and our business strategy;
- external market conditions affecting the biopharmaceutical and synthetic biology industries and trends within those industries;
- our financial position, including cash on hand, and our historical and forecasted performance and operating results;
- the lack of an active public market for our common stock and our preferred stock;
- the likelihood of achieving a liquidity event, such as an initial public offering, or sale of our company in light of prevailing market conditions; and
- the analysis of initial public offerings and the market performance of similar companies in the biopharmaceutical industry.

The assumptions underlying these valuations represented management's best estimate, which involved inherent uncertainties and the application of management's judgment. As a result, if we had used significantly different assumptions or estimates, the fair value of our common stock and our stock-based compensation expense could have been materially different.

Once a public trading market for our common stock has been established in connection with the completion of this offering, it will no longer be necessary for our board of directors to estimate the fair value of our common stock in connection with our accounting for granted stock options and other such awards we may grant, as the fair value of our common stock will be determined based on the quoted market price of our common stock.

Options Granted

The following table summarizes by grant date the number of shares subject to options granted from January 1, 2020 through the date of this prospectus, the per share exercise price of the options, the estimated per share fair value of the options, and the per share fair value of our common stock on each grant date:

Grant Date	Number of Common Shares Subject to Options Granted	Exercise Price per Share	Estimated Per-Share Fair Value of Options[1]	Estimated Fair Value Per Share of Common Stock at Grant Date
January 29, 2020	179,497	$ 0.72	$ 0.26	$ 0.72
July 23, 2020	74,323	$ 0.72	$ 0.27	$ 0.72
October 22, 2020	49,245	$ 0.72	$ 0.26	$ 0.72
March 3, 2021	662,108	$ 4.38	$ 1.75	$ 4.38
April 24, 2021	1,014,226	$ 5.94	$ 2.33	$ 5.94
May 19, 2021	137,495	$ 11.34	$ 4.46	$ 11.34

(1) The estimated per share fair value of options reflects the weighted average fair value of options granted on each grant date, determined using the Black-Scholes option-pricing model.

The intrinsic value of options outstanding at March 31, 2021 is $3.6 million.

Recently Issued Accounting Pronouncements

A description of recently issued accounting pronouncements that may potentially impact our financial position and results of operations is disclosed in Note 2 to our consolidated financial statements appearing at the end of this prospectus.

Emerging Growth Company Status

In April 2012, the JOBS Act was enacted. Section 107 of the JOBS Act provides that an “emerging growth company,” or an EGC, can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act for complying with new or revised accounting standards. Thus, an EGC can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected to

use the extended transition period for new or revised accounting standards during the period in which we remain an emerging growth company; however, we may adopt certain new or revised accounting standards early.

We will remain an emerging growth company until the earliest to occur of: (i) the last day of the fiscal year in which we have more than $1.07 billion in annual revenue; (ii) the date we qualify as a “large accelerated filer,” with at least $700.0 million of equity securities held by non-affiliates; (iii) the date on which we have issued more than $1.0 billion in non-convertible debt securities during the prior three-year period; and (iv) the last day of the fiscal year ending after the fifth anniversary of our initial public offering.

Quantitative and Qualitative Disclosures about Market Risks

As of March 31, 2021, we had cash of $17.8 million. Interest income is sensitive to changes in the general level of interest rates; however, due to the nature of these investments, an immediate 10% change in market interest rates would not have a material effect on the fair market value of our cash balance.

As of March 5, 2021, we had $15.0 million of borrowings outstanding under the 2021 Loan Agreement. Borrowings under the 2021 Loan Agreement bear interest at a rate equal to the greater of (a) 4.0% above the prime rate and (b) 7.25%. The prime interest rate as of May 17, 2021 was 3.25% per annum. An immediate 10% change in the 30-day prime rate would not have a material impact on our debt-related obligations, financial position or results of operations.

We are not currently exposed to significant market risk related to changes in foreign currency exchange rates. Our operations may be subject to fluctuations in foreign currency exchange rates in the future. We do not believe that inflation has had a material effect on our business, financial condition, or results of operations during the period ended December 31, 2019, the year ended December 31, 2020, and the three months ended March 31, 2020 and 2021. Our operations may be subject to inflation in the future.

BUSINESS

Overview

We believe that we are a leading synthetic biology company focused on enabling researchers to rapidly, accurately and reproducibly build or “write” high-quality synthetic DNA and mRNA that is ready to use in many downstream synthetic biology enabled markets. Our synthetic biology solution addresses the bottlenecks across the multi-step process of building DNA and mRNA, as well as the significant limitations of existing solutions that prevent the rapid building of virtually error-free DNA and mRNA at a useable scale. A key part of our solution is our BioXp system, an end-to-end automated workstation that fits on the benchtop and is broadly accessible due to its ease-of-use and hands-free automation. We believe our BioXp system can democratize synthetic biology by simplifying the process of building DNA and mRNA, thereby accelerating the discovery, development and production of novel high-value products, including antibody-based biologics, mRNA-based vaccines and therapeutics and precision medicines.

Synthetic biology involves the engineering of biological components from a digital DNA sequence, enabling the construction of macromolecules and organisms with new and improved biological functions. It is being used across multiple markets, including:

- healthcare, to discover, develop and produce novel therapeutics and vaccines;
- agriculture, to improve crop yields and create novel food sources;
- technology, to potentially store and retrieve digital data using DNA; and
- various consumer markets.

In its January 2020 report, BCC Research estimated that the global synthetic biology market was $5.3 billion in 2019 and projected that market to grow at a compound annual growth rate (CAGR) of 29%, reaching an estimated market size of $18.9 billion by 2024. Of this $5.3 billion market, BCC Research estimated that enabling technologies, such as our workflow solutions, represented an approximate $2.6 billion market opportunity in 2019. Additionally, within this market, Transparency Market Research estimated that the *in-vitro* transcription template market (mRNA production) was $118 million in 2020 and is growing at a CAGR of 19.8%.

Synthetic biology is enabled by numerous technologies that facilitate the *design-build-test* paradigm of new or modified biological components. Any inefficiency across these three phases can create a bottleneck hindering the rapid iteration within product development. In the build phase, the process of writing synthetic DNA or mRNA for an improved biological function is characterized by multiple, complex processes that involve numerous time-consuming and technical steps, including DNA synthesis, DNA assembly, DNA cloning, and DNA scale-up in *E. coli* with multiple DNA purification steps in between. If the final product is mRNA, the process continues with additional technical steps including mRNA synthesis, mRNA modifications at each end and multiple mRNA purification steps. Currently, these processes are carried out in laboratories by highly skilled researchers using multiple kits, each designed to perform one or more of the technical steps. Depending on the length and complexity of the desired synthetic DNA or mRNA product, the build process may involve hundreds of manual steps, require numerous different kits and take days, weeks or months to complete. As an alternative solution, many, but not all, of these steps can be outsourced to a molecular biology contract research organization (CRO) for completion, shifting those challenges from the end user to the CRO. However, outsourcing poses additional limitations including lack of workflow control, unpredictable timelines and data security issues. Whether in-house or through a CRO, existing solutions for building synthetic DNA and mRNA have deficiencies, for instance:

- inconsistent levels of fidelity of DNA and mRNA fragments reducing overall yields of usable material;
- inability to construct stretches of DNA and mRNA sequence that have particular features;
- inability to construct DNA and mRNA sequences above a certain size; and
- inability to produce the end product in sufficient quantities for downstream applications.

All of these limitations produce bottlenecks across the build phase, which have significantly hindered the ability of synthetic biology to deliver on its full potential.

We developed our synthetic biology solution to address the significant unmet need in the market for an approach that can automate, integrate, optimize and standardize the process for building synthetic DNA and mRNA. Our synthetic biology solution is comprised of our:

- *BioXp system*: which we believe is the first commercially available push-button, walkaway, end-to-end automated workstation that empowers researchers to go from a digital DNA sequence to endpoint-ready synthetic DNA in as few as 8 hours and mRNA in less than 24 hours, exclusive of shipment time;
- *BioXp portal*: a user-friendly online portal that offers an intuitive guided workflow and design tools for building new DNA sequences and assembling them into vector(s) of choice;
- *BioXp kits*: contain all the necessary building blocks and reagents, including our proprietary Gibson Assembly branded reagents, for specific synthetic biology workflow applications;
- *Cloud-based scripts*: product-specific and pre-validated scripts that optimize and simplify the use of the BioXp kits on the BioXp system;
- *Benchtop reagents*: contain all the reagents necessary to proceed with a specific synthetic biology workflow on the benchtop using products generated on the BioXp system; and
- *Biofoundry Services*: enable a customer to order and receive any of the BioXp system endpoint-ready products, such as genes, clones, cell-free amplified DNA and variant libraries.

Our solution is designed to offer the following benefits:

- consolidation of the build phase within a single end-to-end automated system;
- flexibility across a variety of DNA and mRNA applications;
- fast and scalable results;
- ability to construct genes, mRNA, and clones across a wide range of sizes and complexity;
- industry-leading quality and performance;
- enhanced productivity; and
- customer protection of proprietary vectors.

We have developed and commercialized products that include BioXp systems, including our current BioXp 3250 system, BioXp kits for generating a wide array of synthetic DNA and mRNA, and benchtop reagents that complement the automated synthetic biology workflow applications and workflow solutions. We believe that our integrated BioXp systems and BioXp kits represent the industry's leading synthetic biology workflow automation solution and provide us with a first mover advantage in the rapidly growing synthetic biology market. As part of our continuing effort to improve the processes of synthetic biology, we are currently developing next-generation BioXp systems and BioXp kits with the goal of transforming rapid demand-response workflows in synthetic biology and consolidating supply chains and enabling global distributed manufacturing for discovery, pre-clinical and clinical applications. We also use our BioXp 3250 system, BioXp kits and benchtop reagents to perform services for customers.

Our BioXp systems are intended to address the needs of the synthetic biology customer by providing an unmatched capability to rapidly synthesize high-quality DNA and mRNA. With future system releases and extensions, we plan to address the continuum of research needs across the central dogma of molecular biology by enabling cell-free production of high-quality synthetic DNA, mRNA and protein for the discovery, development and manufacturing of enabled products across a wide range of markets. We are strategically focused on providing workflow solutions for markets with high-value enabled products such as those in healthcare and technology.

We currently provide workflow solutions for the following areas:

- synthetic DNA for antibody and protein engineering of biologic drugs;
- synthetic DNA for genome editing;
- synthetic DNA for metabolic pathway engineering;
- immune monitoring;
- synthetic mRNA for infectious disease vaccine discovery and development;
- mRNA-based vaccines for precision medicine; and
- mRNA-based therapeutics.

We are currently developing workflow solutions for the following areas:

- global distributed manufacturing of vaccines;
- synthetic protein for biologics discovery; and
- synthetic DNA for digital data storage.

We commercially launched our current synthetic biology solution in September 2019, which now includes the BioXp 3250 system, BioXp kits with associated cloud-based application scripts, and benchtop reagent kits. Since the introduction of our solution through June 1, 2021, we have launched eight BioXp kits, three benchtop reagent kits, and several other synthetic biology products, including 12 SARS-CoV-2 full-length genomes and RNA controls as well as our Vmax X2 cells. We have placed approximately 160 BioXp systems globally. We target customers in the fields of personalized medicine, biologics drug discovery, vaccine development, genome editing and cell and gene therapy. As of June 1, 2021, our customer base was composed of over 300 customers and included 15 of the 25 largest biopharmaceutical companies in the world ranked by 2020 revenue, excluding affiliates of those companies. Our customer base also includes leading academic research institutions, government institutions, CROs and synthetic biology companies.

Industry Overview

Background on Synthetic Biology

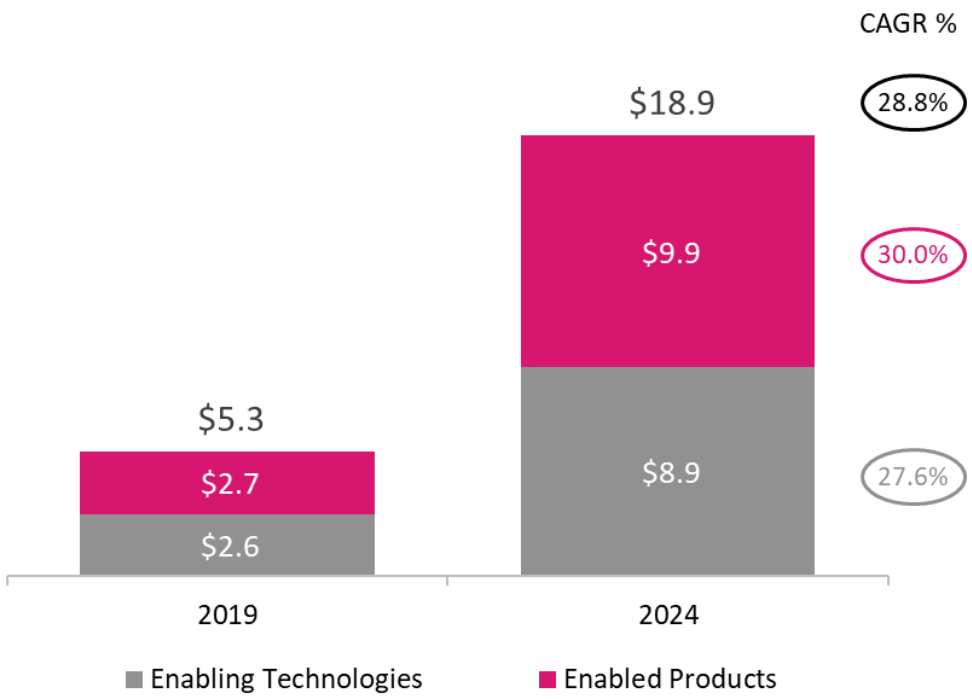
Synthetic biology is a well-established and rapidly expanding field of science that involves the engineering of biological components such as genes, mRNA, proteins, viruses and living cells starting from a digital DNA sequence, enabling the construction of those macromolecules and organisms with new and improved biological functions. The application of synthetic biology is constantly expanding, and new end markets are emerging, driven by continued innovation, a growing understanding of biology and access to novel research tools. For example, in healthcare, synthetic biology is being used to discover, develop and produce novel DNA-, mRNA-, and protein-based therapeutics and vaccines (e.g., antibody-based biologics, mRNA-based COVID-19 vaccines and personalized cancer therapeutics). In agriculture, synthetic biology is being utilized to improve crop yields and create novel food sources (e.g., plant-based meat products). Similarly, in technology, synthetic biology may lead to the ability to store and retrieve digital data using DNA. Finally, in consumer markets, synthetic biology is being employed in a variety of applications. For example, synthetic biology is used to construct clothes from renewable, bio-based sources, to develop biofuels and renewable energy from engineered microbes, and to produce plastics from biodegradable polymers.

In its January 2020 report, BCC Research estimated that the global synthetic biology market was $5.3 billion in 2019 and projected that market to grow at a CAGR of 29%, reaching an estimated market size of $18.9 billion by 2024. Additionally, within this market, Transparency Market Research estimated that the *in-vitro* transcription template market (mRNA production) was $118 million in 2020 and is growing at a CAGR of 19.8%, reaching an estimated market size of $332 million by 2025.

The synthetic biology market falls into two broad sectors:

- Enabling technologies: The molecular biology methods (e.g., DNA sequencing, DNA synthesis, DNA assembly, molecular cloning, mRNA production, protein synthesis and expression, genome editing, and bioinformatics software for DNA sequence design and analysis) that employ molecular biology components (e.g., oligonucleotides, enzymes, buffers, vectors, and competent cells) to engineer higher value products that have new or improved utility from a DNA sequence “blueprint”.
- Enabled products: These are the end products and include, but are not limited to, therapeutics based on principles of antibody and protein engineering of biologic drugs, mRNA-based vaccines, genetic medicines (e.g. DNA and mRNA therapeutics), and sustainable foods and biofuels resulting from the use of synthetic biology, as well as DNA data storage solutions.

Figure 1: Estimated Global Synthetic Biology Market ($ Billions)



According to the BCC Research report, a driver of the rapid growth of the synthetic biology market is the advances in enabling technologies and the downstream benefits being realized in key enabled product markets like healthcare. These advances in enabling technologies have increased market demand for high-value products that can be produced by synthetic biology methods. This in turn has resulted in a rapid growth of synthetic biology CROs and molecular biology reagent kits, which have been created to serve the higher demand requirements of an evolving synthetic biology market, particularly for drug discovery, agriculture, consumer and industrial products. Scientists increasingly want to build DNA and introduce those molecules into organisms to create cell-based discovery and production systems for new biologics and small-molecule drugs. Research clinicians are recognizing the importance of synthetic biology and beginning to apply the construction of synthetic DNA and mRNA to the development of precision medicines, in the form of mRNA-based cancer vaccines, particularly for immuno-oncology. Pharmaceutical companies have begun integrating synthetic biology approaches in their facilities to develop state-of-the-art vaccines and biologics that are DNA-, mRNA-, and protein-centric. All of these approaches require the ability to make high-quality synthetic DNA comprising entire gene sequences and, in some instances, expressing those genes to make synthetic mRNA and synthetic proteins. With the success of FDA-approved mRNA-based COVID-19 vaccines, it is expected that interest in mRNA-based therapeutics and vaccines utilizing synthetic biology technology will remain strong.

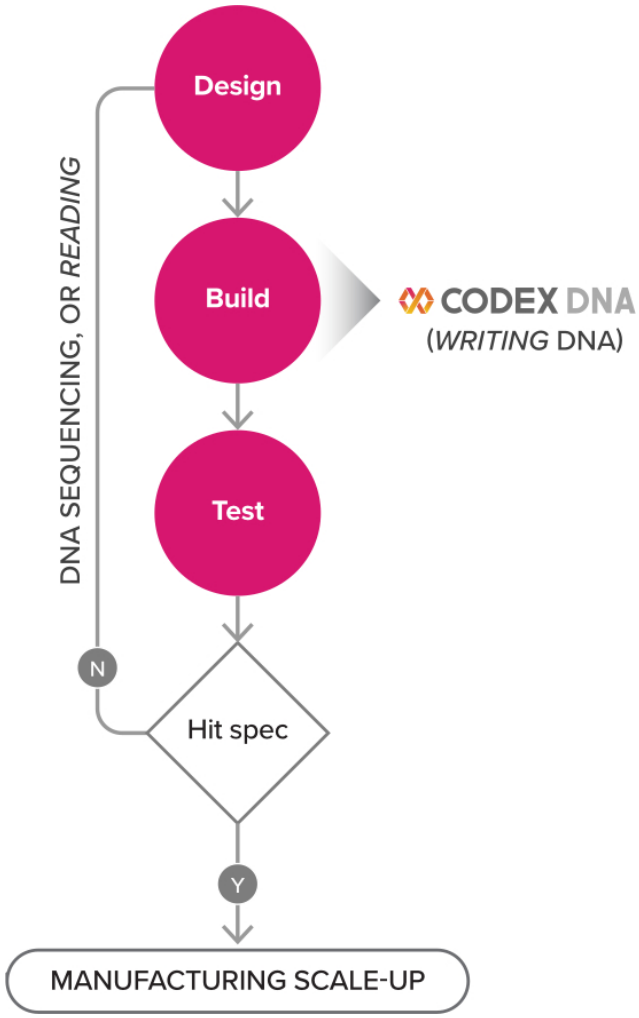
Synthetic biology is enabled by numerous technologies that facilitate highly-iterative experimental design. These technologies permit “reading” of the DNA code of a desired gene, engineering and synthetic construction of biological products using those blueprints, and testing of the constructed products to determine whether they perform in the desired manner. Once a DNA sequence is read, the gene of interest can be built or written from a pool of building blocks using molecular synthesis techniques. In addition, once a gene is read, researchers can redesign the gene to produce new and improved biological functionality, and then build the redesigned gene and analyze its activity in a fully biological system during a test phase. Reading is then used once again to confirm the DNA sequence that provides the desired function of the biological sample that was designed, built and tested. Reading and writing genes opens the door to a new synthetic biology paradigm for iterating on the *design-build-test* phases and creates a powerful and flexible approach to developing a wide variety of enabled products, including

mRNA-based vaccines and protein-based drugs. Decades of gene sequencing work and functional genetic studies to understand what genes do have produced a huge cache of content that researchers can use to design new or modified genetic material.

Over the last 20 years, synthetic biology has experienced a transformation, driven by numerous innovations in enabling technologies. The initial breakthrough was DNA sequencing for reading the DNA and beginning to understand DNA coding. However, early sequencing instruments were slow and expensive, creating a bottleneck in the use of genetic sequence data and its application to both additional research and commercial applications. More recently, the advent of high-performance, low-cost next-generation sequencing (NGS) systems has enabled wide adoption, with over 15,000 such systems installed in research labs globally, resulting in an increase in genetic discoveries in humans and a wide range of organisms, including bacteria, plants and insects and animals. These sequencing systems are generating large amounts of information about genetic composition and have led to the creation of private and public databases around the world containing DNA sequences. Recently, advances in computing power, machine learning and computational modeling have enabled biologists to better analyze this increasing amount of genomic information and inform experimental design or engineering of genes, genetic pathways and even complete chromosomes to achieve the desired biological improvement. Given the volume and understanding of DNA sequence content, the bottleneck in synthetic biology has shifted from reading to writing DNA in an effort to facilitate the rapid design of DNA and mRNA for use in the downstream synthetic biology enabled markets.

The next critical advancement in the field of synthetic biology was the ability to construct genetic sequences *de novo* from their chemical components via DNA synthesis. This enabled researchers to capitalize on the genetic discoveries and improvements in computational design to build or write engineered DNA. The advancements in enabling technologies for both reading and writing DNA have allowed synthetic biologists to engineer changes in genes, metabolic pathways and organisms with greater ease, precision and scale, resulting in a new paradigm with rapid iteration of product cycles and greater predictability of results. The following graphic illustrates this paradigm.

Figure 2: The Synthetic Biology Paradigm



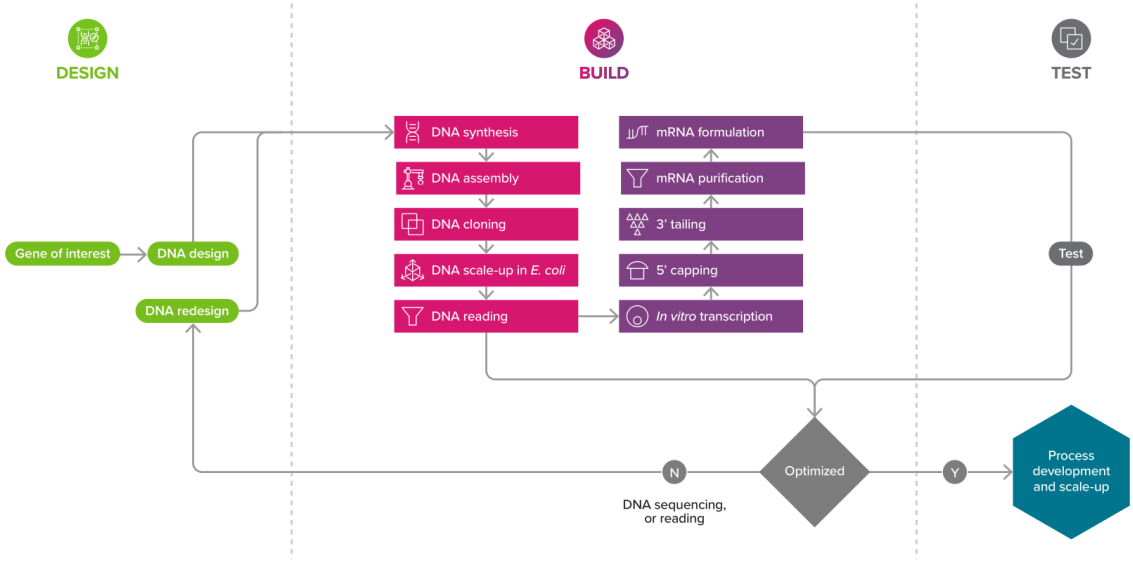
This new paradigm is characterized by three key steps—*design, build, test*—which are continuously iterated to drive feedback into the design phase for the following iteration until the desired biological result is achieved. With DNA as the software of life, biologists can now write code like software engineers and write genes to perform as desired. The *design-build-test* synthetic biology paradigm begins with the DNA sequencing or reading of a biological sample, providing a “blueprint” for the design phase. The outcome of the design phase is a DNA sequence that is chemically synthesized in the build phase and, as necessary, converted to mRNA or protein. The outcome of the build phase is synthetic DNA or mRNA, which can then be readily assayed for desired function in the test phase.

Under the current paradigm, DNA readers are integrated within the build and test phases to confirm the blueprints are being generated as expected in the build phase for quality control and to identify the DNA sequence of the optimal blueprint discovered in the test phase. If the outcome of the test phase is that further optimization is desired, the process is iterated again, starting at the design phase. This *design-build-test* paradigm highlights the importance and opportunity for products and technologies focused on enhancing the speed and scale of the design phase. This efficiency can be accomplished by placing scalable platform technologies for reading and writing in close proximity.

The Build Phase for Synthetic DNA and mRNA

Any inefficiencies across the design, build, or test phase can create a bottleneck in the highly-iterative *design-build-test* paradigm. This especially holds true for the build phase as the process of "writing" synthetic DNA for an improved biological function is characterized by multiple, complex processes that involve numerous time-consuming and technical steps, including (1) DNA synthesis; (2) DNA assembly; (3) DNA cloning; and (4) DNA scale-up in *E. coli*.

Figure 3: The Build-Phase



Writing synthetic DNA

1. *DNA synthesis*: DNA is made from four molecular building blocks called nucleotides: adenine (A), cytosine (C), guanine (G) and thymine (T). These closely related molecules form long linear chains consisting of thousands or more nucleotides. In the same way that the "zeroes" and "ones" in digital code can instruct a machine or other computer code to act, the specific order of nucleotides in a strand of DNA imparts the information for an organism to make proteins, which ultimately control the chemical reactions that enable cellular function.
   - The first step towards building synthetic DNA begins with determining the precise sequence of nucleotides of the gene to be synthesized. Computational tools are typically employed to modify, in silico, the sequence of the gene to achieve the desired improvement in biological function.
   - Next, due to challenges in synthetically manufacturing long sequences of DNA, various bioinformatics tools are used to break the desired in silico DNA sequence into short, overlapping pieces of approximately 60 nucleotides in length.
   - The in silico "blueprints" for the desired DNA fragment or gene are then converted into the physical pieces of DNA. To do so, each nucleotide of the desired short gene fragment specified in the blueprints is chemically synthesized and linked together to form oligonucleotides.
2. *DNA assembly*: During this process, overlapping oligonucleotides are "stitched" together using a complex series of chemical reactions, using enzymes, salts and buffers. These reactions are performed at various temperatures for a large number of cycles until the desired synthetic gene fragment or gene has been assembled.
3. *DNA cloning*: The resulting synthetic DNA product is typically combined with a DNA vector, which is a circular piece of DNA that acts as a vehicle to transport synthetic DNA fragments or genes, to create a recombinant DNA product for introduction into a host organism. Most commonly this host organism is

E. coli, and it will easily grow into a large population for purposes of producing more of the desired synthetic DNA fragment or gene product.

4. *DNA scale-up in E. coli: E. coli* cells containing new DNA are plated on Petri dishes, and after a period of growth will result in individual colonies. The colonies of *E. coli* are placed in growth medium and incubated to produce a culture of cells containing the cloned vector. The synthetic DNA is isolated from the cultured cells, and is purified and further processed for DNA sequencing and then analyzed with DNA design tools. Introducing the recombinant DNA product into *E. coli* serves two purposes: first, the methodology filters out intended DNA sequences from unintended DNA sequences that arise from chemical synthesis of oligonucleotides, which is an imperfect process; and second, it permits exponential scaling up of the amount of synthetic DNA to meaningful quantities for use in downstream applications.

Writing synthetic mRNA

Recently, the building of mRNA has emerged as a highly attractive system for the development of both therapeutics and vaccines, with hundreds of such projects currently in various stages of development. The Moderna and Pfizer COVID-19 vaccines are both mRNA products and each has received Emergency Use Authorization from the FDA. Like DNA, mRNA takes the form of long chains of nucleotides. mRNA transports the instructions encoded in DNA to downstream molecules for molecular “fulfillment” of protein synthesis, in essence acting as DNA’s messenger.

Similar to building synthetic DNA, the steps required to build mRNA are numerous, time-consuming and often fraught with difficulties, further, RNA is generally more unstable than DNA, increasing the challenge of synthesis and handling. The steps involved in synthesizing mRNA include all the steps necessary to make synthetic DNA in addition to those outlined below. DNA is used as a template to create mRNA, and this is completed as follows:

1. In vitro transcription: The cloned, circular synthetic DNA template is linearized and incubated in an enzymatic reaction containing all the components necessary to turn the synthesized DNA template into the desired mRNA that is then purified.
2. 5’ capping: The mRNA is then further processed to include a “cap” at its 5’ end to improve its efficiency as a driver of protein production within cells. The mRNA is then purified once more.
3. 3’ tailing: The capped mRNA then has a poly A tail added at the 3’ end to stabilize it and prevent its degradation and is then purified once more.
4. mRNA purification: The synthetic mRNA is treated with a DNase enzyme to remove any residual DNA template that may interfere with downstream applications and is then purified one final time.
5. mRNA formulation: The mRNA is then formulated by adding carrier molecules (e.g., lipid nanoparticles) to permit its delivery into cells.

Following these steps, the synthetic mRNA is ready to be used in downstream synthetic biology-enabled markets including, in the case of new drug development, biologics (antibody- and protein-based drugs), mRNA-based vaccines for infectious disease and precision medicine, genome and pathway engineering and many other markets.

Key limitations in writing synthetic DNA and mRNA

Despite these substantial advancements, including the accumulation of a large number of functional discoveries resulting from the wide-spread adoption of DNA sequencing instruments, the profound potential of synthetic biology has been hampered by the complexity within, and among, the multi-step process of writing synthetic DNA and mRNA, as well as significant limitations of existing solutions that prevent the rapid building of virtually error-free DNA and mRNA at a useable scale. Both limitations ultimately affect speed and quality of product delivery.

Currently, the process of writing synthetic DNA or mRNA for an improved biological function is carried out in laboratories by highly skilled researchers using multiple kits, each designed to perform one or more of the technical steps. Depending on the length and complexity of the desired synthetic DNA or mRNA product, the process may involve hundreds of manual steps, require numerous different kits and take days, weeks or months to complete. As an alternative solution, many, but not all, of these steps can be outsourced to a molecular biology CRO for completion, shifting those challenges from the end user to the CRO. However, outsourcing poses additional limitations, including lack of workflow control, unpredictable timelines and security issues. Ultimately, this reduces the amount of rapid iteration and refinement by the researcher since multiple *design-build-test* cycles are often needed to optimize the synthesized DNA or mRNA.

Key limitations within the build phase of the synthetic biology paradigm lengthen time to market for a wide array of innovative products within the healthcare, consumer, agriculture and technology markets. Build iterations can take days, weeks or months, depending on project type, using conventional methods with either in-house manual kit-based processes or by outsourcing portions of the project to a CRO. In either case, the key limitations of the build phase include the following:

- long project timelines resulting from non-scalable, manual processes, or the need to use multiple suppliers or CROs. The turn-around-times from CROs differ widely, and the process, depending on the complexity of the product ordered, ranges from days to months. Some CROs will not accept certain projects due to their inherent difficulty. In addition, there are fewer CROs that produce mRNA at scale and no single in-house kit solution for generating synthetic mRNA starting from DNA sequences;
- inconsistent quality and performance resulting from supply chain constraints or the use of different kits if performed in-house, or resulting from using different CROs with inconsistent protocols;
- lack of data standardization across a project or organization which limits predictability and reproducibility;
- partial order fulfillment due to variations in project acceptance criteria, such as DNA sequence complexity;
- lack of workflow control and timing of project integration into parallel programs; and
- difficulty in controlling intellectual property and security concerns around sensitive DNA designs potentially becoming exposed to security vulnerabilities during transfer. Researchers would prefer to control their intellectual property, particularly within biopharmaceutical companies where hundreds of millions of dollars are spent on the development of proprietary DNA sequences.

***Existing solutions for writing synthetic DNA and mRNA are insufficient*.**

The current processes for building synthetic DNA have several significant limitations including:

- inconsistent levels of fidelity of DNA fragments resulting from DNA synthesis errors, thereby reducing overall yields of usable material;
- inability to construct some stretches of DNA sequence that have particular features, such as extreme imbalances in nucleotide content (%G+C vs. %A+T) and repetitive sequences;
- inability to construct DNA sequences above a certain size; and
- inability to scale the material to a suitable yield such that it is usable in downstream applications.

The current processes for building synthetic mRNA have the same inherent limitations as building DNA since the construction of synthetic DNA is a prerequisite for making mRNA. In addition, there are several other key challenges including:

- the handling requirements of the mRNA products, which are highly unstable and susceptible to rapid degradation;
- the multi-step processes involved in producing purified, biologically active mRNA; and
- scaling the mRNA to high yields from DNA templates.

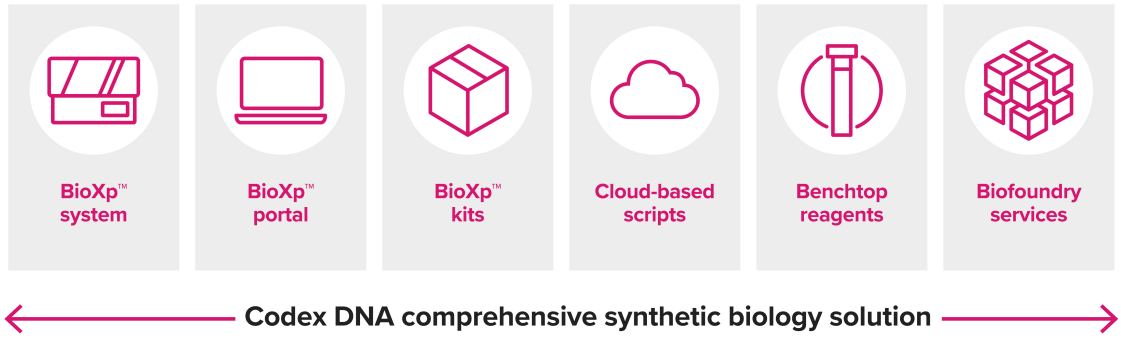
These limitations produce bottlenecks across the build phase, which have significantly hindered the ability of the synthetic biology paradigm to deliver on its full potential. This inefficiency has created a significant unmet need in the market for an approach that can automate, integrate, optimize and standardize the process, and thereby enhance the speed, predictability and reproducibility of the *design-build-test* paradigm.

The Codex DNA Solution

Our synthetic biology solution, which leverages our industry-standard Gibson Assembly method, is aimed at addressing the bottlenecks across the build phase in order to accelerate the *design-build-test* paradigm. Key to our solution is our BioXp system, an end-to-end automated system for synthetic biology that fits on the benchtop and is broadly accessible due to its ease-of-use and hands-free automation. We have developed and commercialized the current version of the BioXp system, the BioXp 3250 system. We believe our BioXp system can democratize synthetic biology by making the build phase broadly accessible in terms of simplicity, accelerating applications and workflows, and greatly facilitating development of novel high-value products across a wide range of synthetic biology

enabled markets. Our BioXp system empowers users to rapidly, accurately and reproducibly create high quality synthetic DNA and mRNA that is ready for use in many downstream synthetic biology workflows.

Figure 4: Our Comprehensive Synthetic Biology Solution



Our synthetic biology solution is comprised of:

- *The BioXp system*: which we believe is the first commercially available push-button, walkaway, end-to-end automated workstation, which requires only a few minutes of set up time, that empowers researchers to translate a digital DNA sequence to endpoint-ready synthetic DNA in as few as 8 hours and mRNA in less than 24 hours, exclusive of shipment time, using a benchtop instrument that is run by sophisticated onboard software;
- *The BioXp portal*: a user-friendly online portal that offers an intuitive guided workflow and design tools for building new DNA sequences and assembling them into vector(s) of choice using Gibson Assembly on the BioXp system;
- *The BioXp kits*: contain all the necessary building blocks and reagents, including our proprietary Gibson Assembly branded reagents, for specific synthetic biology workflow applications;
- *Cloud-based scripts*: product-specific and pre-validated scripts that optimize and simplify the use of the BioXp kits on the BioXp system (e.g., the BioXp system automatically scans barcodes from reagent plates to download scripts, enabling hands-free operation);
- *Benchtop reagents*: contain all the reagents necessary to proceed with a specific synthetic biology workflow on the benchtop using products generated on the BioXp system, providing additional flexibility to the customer and furthering our end-to-end solution; and
- *Biofoundry Services*: enable a customer to order and receive any of the BioXp system endpoint-ready products, such as genes, clones, cell-free amplified DNA and variant libraries.

Our solution is designed to offer the following benefits:

- *Consolidation of the build phase within a single end-to-end automated system:* We provide researchers all the hardware, software, materials and methodologies required to rapidly and accurately design and build large quantities of synthetic DNA and mRNA, with BioXp kits for synthetically produced protein under development. Our BioXp system reduces the turnaround time for such workflows to days or hours. Moreover, researchers no longer require multiple vendors to complete such workflows, eliminating related bottlenecks and security concerns. We believe that using our BioXp system saves significant time and potentially accelerates time to market for critical products. The time savings which we believe can be achieved for various workflows using synthetic DNA or mRNA is depicted in the following graphic.

Figure 5: Using the BioXp system saves significant time and potentially accelerates time to market for critical products.

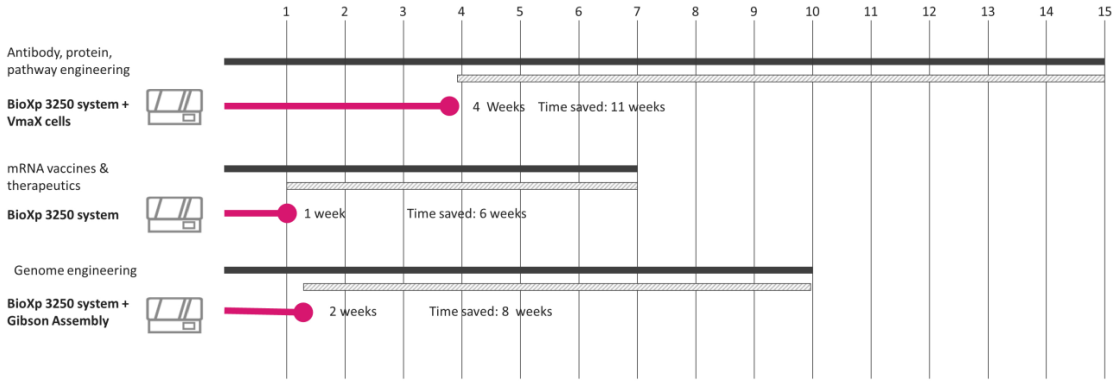


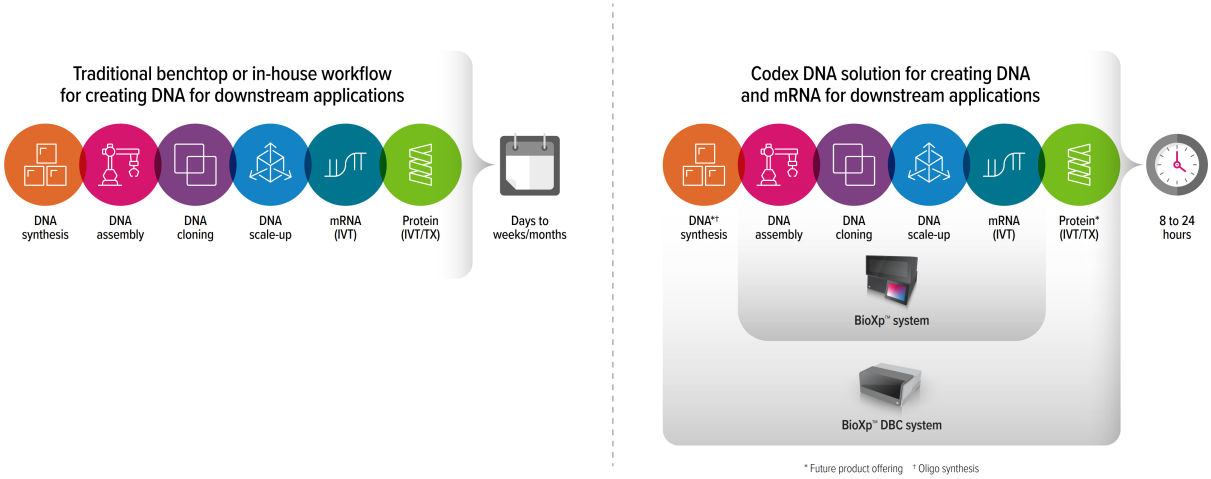
Figure 5 is derived from Company calculations and publicly available information from certain of the Company's competitors determined by management to offer the most comparable service for each workflow, and excludes shipping times for products.

- *Increased speed and scale*: Our BioXp system has the capacity to parallel process as many as 32 samples at once within an 8- to 24-hour period, depending on the BioXp kit being used. It also has the capacity to generate high quality and diverse libraries with short lead times, allowing innovation to be maintained in-house.
- *Capacity to construct a wide array of product formats*: Our BioXp system was designed such that future applications would not require hardware upgrades but only software upgrades that could be installed remotely. This feature has facilitated new product development efforts to enhance current product specifications and to develop new kits that extend beyond the production of synthetic DNA. For example, since the BioXp system was launched, new scripts have been developed to produce larger gene products, cell-free amplification of cloned DNA, and production of synthetic mRNA. Likewise, new scripts are currently being developed to enhance the mRNA product offering and develop protein synthesis BioXp kits. This capability provides substantial time-to-product and workflow control advantages for customers and gives them the flexibility to select the workflows that meet their unique needs.
- *Ability to construct larger and more complex DNA and mRNA sequences*: Our BioXp system uses proprietary protocols developed for robust DNA synthesis, assembly, and cloning enabling the construction of genes, mRNA, and clones across a wide range of sizes and complexity.
- *Industry-leading quality and performance*: Our BioXp system uses a proprietary two-step error correction process to generate virtually error-free synthetic genes every time. When compared to certain of our competitors, we have observed a 2.74 fold increase in sequence precision.
- *Enhanced productivity*: Our BioXp system creates finished DNA products in as few as eight hours. In addition, it includes protocols for the cell-free amplification of cloned DNA, obviating the need to use *E. coli*, reducing the time to product by days or even weeks. Altogether, we believe that this could represent at least a 20-fold productivity increase through accelerated iterations of the *design-build-test* paradigm. Ultimately, product development cycles are accelerated because the desired biological results are identified more quickly.
- *Protection of proprietary vectors*: Our BioXp system permits our customers to maintain their proprietary vectors on site, protecting their intellectual property throughout their entire development lifecycle.

The metrics described above were calculated using averages derived from publicly available information and quotes received for comparable product offerings by some of our competitors, some of which included shipping times, and averages from our workflows.

In summary, our solution addresses key limitations of the build phase by offering many benefits as highlighted in the graphic below.

Figure 6: Benefits of our BioXp system.



*Future product offering

Our Growth Strategy

Our goal is to establish our solution, including our BioXp family of systems, as the industry standard for building synthetic DNA, mRNA and protein, and to democratize synthetic biology, thus accelerating its applications and workflows across a wide range of industries. To achieve this objective, we intend to:

- *Drive new customer adoption of our BioXp systems*. As of June 1, 2021, we have placed approximately 160 BioXp systems, including 43 BioXp systems in 2020, which represents a 187% increase year-over-year from 2019. We intend to drive customer adoption globally within our targeted synthetic biology enabled workflows for antibody and protein engineering of biologic drugs, mRNA-based therapeutics and vaccines for infectious disease and precision medicine, genetic medicines, sustainable foods, biofuels and. resulting from the use of synthetic biology DNA data storage solutions. We intend to accomplish this through business development efforts, establishing and nurturing relationships with KOLs, a direct sales model in North America and four major European markets (United Kingdom, Germany, France, Benelux), as well as through more than 15 channel partners across Europe, the Middle East, Africa and Asia Pacific. We intend to sell our suite of products and services to academic research organizations and universities, CROs, and pharmaceutical, biotechnology, agricultural, consumer and technology companies. We believe that initially focusing on the pharmaceutical and biotechnology companies currently using readers as a part of the design-build-test cycle will facilitate the adoption of our products and synthetic biology enabled workflows for biologics and mRNA-based therapeutics and vaccines due to the benefits of having readers and writers within close proximity to each other.
- *Maximize the utilization of BioXp system by developing additional BioXp kits for our customers' workflows*. As of June 1, 2021, we have launched a total of eight BioXp kits that are used at the most iterative, costly and time-consuming steps across our customers' workflows. Our BioXp kits contain all the reagents necessary for a specific synthetic biology workflow applications, including gene fragment synthesis, DNA cloning, building DNA libraries, cell-free DNA scale-up and small-scale mRNA synthesis. To expand system utilization even further, we plan to commercially launch three BioXp kits in the first half of 2022. These include a rapid-scale mRNA synthesis kit, a large-scale mRNA synthesis kit and a protein synthesis kit. Additional BioXp kits are currently in development.
- *Continue to expand into other attractive markets for synthetic biology that are currently under-served*. We believe our solution is universal and can support DNA, mRNA and protein synthesis for almost any synthetic biology application. We plan to continue to invest in the development of high-value BioXp kits for core workflows in our target markets including biologics drug discovery, vaccine development, and genome engineering and in additional emerging markets such as DNA data storage and cell and gene therapy.
- *Develop and commercialize new, disruptive BioXp systems to further increase utilization, expand breadth of applications, and accelerate product development cycles*. These include:
  - The BioXp 9600 system. A higher throughput system permitting more DNA, mRNA and protein samples to be processed per run.
  - The BioXp Oligo Printer system. An oligonucleotide printing system to construct short DNA fragments.
  - The BioXp DBC system. A complete made-to-stock automated system that combines the two innovations above, permitting digital DNA sequences as input.
  - The BioXp Needle Ready Vaccine Printer system. An automated system that enables the globally distributed manufacturing of vaccines from digital sequence data, combining a BioXp kit for DNA, mRNA, or protein scale-up with modules for quality control, lot release testing and fill and finish.
- *Continue to innovate across our synthetic biology product portfolio*. We intend to continue developing enabling technologies across our portfolio, including continued research and development on existing and emerging workflows and applications leveraging synthetic DNA, mRNA and protein.
- *Establish strategic partnerships leveraging our core competencies and validating our technology*. The discovery, development and launch of synthetic biology advances can be time-consuming and expensive. Through our existing partnerships, we are accelerating time-to-market for our technologies and products. We intend to continue adding new strategic relationships across both existing and new markets. In doing so, we can accelerate the development of various markets for our solution, potentially

generate royalties and other forms of economic benefits and leverage third-party insights to help us design new solutions.

- *Continue to attract leading scientists to work at our company*. Our ability to continue discovering new synthetic biology applications and developing new technologies and products depends on our ability to attract top talent from industry and academia. We believe that our strong existing team and groundbreaking accomplishments to date will continue to attract leading scientists.

Our Products

We have developed and commercialized products that include BioXp systems, BioXp kits for generating a wide array of synthetic DNA and mRNA formats, and benchtop reagents that complement the automated synthetic biology workflow applications and workflow solutions. We believe that the BioXp kits that we incorporate into our integrated system represent the industry's leading synthetic biology workflow automation solution. We believe our fully automated workflow solutions, coupled with our expanding menu of BioXp kits, will enable us to establish a first mover advantage in the rapidly growing synthetic biology market.

Our BioXp 3250 system

Our BioXp 3250 system was launched in September 2020, replacing a legacy BioXp 3200 system. We believe that it is the first commercially available fully automated benchtop instrument that enables numerous synthetic biology workflows by providing a turn-key, end-to-end solution for generating synthetic DNA and mRNA starting from DNA sequence. Through a combination of increased throughput and scale and reduced hands-on time, we estimate that the BioXp 3250 system offers the potential to significantly enhance productivity several fold, accelerating the development of critical new products in enabled markets. The BioXp 3250 system accelerates the *design-build-test* phases of the customer's product development cycle by enabling rapid, automated synthesis of genes, clones, variant libraries and mRNA. Unlike traditional approaches that can take days, weeks or months, the BioXp 3250 system achieves these workflows in a single run, which can be completed in 8 to 24 hours.

Figure 7: BioXp 3250 system

The BioXp 3250 system has the capacity to build 32 gene-fragments of up to 1.8 kilobase pairs (kb) in length or four fragments of up to 7.2 kb in length and has an extensive selection of off-the-shelf vectors, as well as the ability to bypass plasmid preps. It allows users to clone single or multiple genes into our, or customer-provided, vectors. In addition, it permits the synthesis of transfection-ready DNA quantities of an average of 10 micrograms per sample, variant libraries up to 1.8 kb in length in as few as 8 hours, exclusive of shipping time, and biologically active

synthetic mRNA with quantities of an average of 10 micrograms per sample in as few as 24 hours, exclusive of shipping time.

Additionally, the BioXp 3250 system's ability to provide on-deck custom cloning obviates the need for subcloning or out-sourcing development of proprietary vectors to CROs allowing laboratories to maintain complete control of intellectual property relating to their proprietary vectors.

As of June 1, 2021, we have sold approximately 35 BioXp 3250 systems, including to many leading global pharmaceutical and biotechnology companies.

Our portfolio of commercialized kits for the BioXp 3250 system

BioXp kits contain all the requisite Gibson Assembly branded reagents and allow our BioXp system to perform the steps required to produce various DNA and mRNA products designed for a range of synthetic biology applications. BioXp kits are designed to be backwards compatible with legacy systems and forward compatible with systems under development.

- BioXp gene synthesis kit. Contains all the Gibson Assembly reagents necessary to make error-corrected, de novo synthetic genes of up to 1.8 kb in length.
- BioXp DNA cloning kit. Contains all the Gibson Assembly reagents necessary to make error-corrected, *de novo* synthetic genes of up to 7.2 kb in length using a standard made-to-stock vector.
- BioXp DNA custom cloning kit. Contains all the Gibson Assembly reagents necessary to make error-corrected, *de novo* synthetic genes of up to 7.2 kb in length using a customer's specific vector.
- BioXp RapidAMP cell-free DNA amplification kit. Contains all the Gibson Assembly reagents necessary to amplify error-corrected genes cloned into either a made-to-stock or customer vector, to make an average of 10 micrograms of DNA per sample.
- BioXp site saturation scanning libraries kit. Libraries with specific mutations distributed over the sequence space to achieve the desired diversity.
- BioXp alanine scanning libraries kit. Libraries with varied single, contiguous amino acid sites, including site-saturation and alanine scanning libraries.
- BioXp combinatorial libraries kit. Libraries with varied, multiple non-contiguous amino acids sites using degenerate bases to optimize protein binding and function.
- BioXp small-scale mRNA synthesis kit. Contains all the Gibson Assembly reagents necessary to make an average of 10 micrograms of biologically active synthetic mRNA per sample using *de novo* synthesized, error-corrected gene fragments (mRNA template) of up to 1.8 kb in length.

By incorporating these application-specific BioXp kits into our BioXp 3250 system, we are able to provide simple, push-button, walkaway, end-to-end automation of important synthetic biology workflows. We believe our products enable unrivalled time-to-product, quality, and workflow control advantages for our customers. The average price per base pair of DNA to synthesize 32 gene fragments of approximately 1.8 kb is $0.10, with the average price per base pair to perform combined gene synthesis, cloning and cell-free DNA scale-up for 32 gene fragments of approximately 1.8 kb is $0.16.

Figure 8: Our BioXp system provides a simple, hands-free, end-to-end experience for our customers.

Our benchtop reagents

We offer benchtop reagents that are synergistic with our BioXp system and BioXp kits to accelerate the build phase of the *design-build-test* synthetic biology paradigm.

- Gibson Assembly HiFi and Ultra kit. Contains all the reagents necessary to simultaneously assemble as many as 10 DNA fragments into a vector to produce a final product that is several hundred kilobase pairs in length.
- Gibson Assembly RapidAMP kit. Contains all the reagents necessary to simultaneously assemble and clone DNA using Gibson Assembly, and then amplify the resultant product to produce an average of 10 micrograms of DNA per sample.
- Vmax X2 cells. Transformation-ready competent cells for introducing plasmids for protein expression applications.
- SARS-CoV-2 synthetic genomes. Twelve different “off the shelf” SARS-CoV-2 synthetic genomes for use in the development of vaccines, therapeutics, and diagnostics for COVID-19 research.
- SARS-CoV-2 RNA controls. SARS-CoV-2 RNA controls are useful as quality control measures for the verification and validation of both NGS and reverse transcriptase-polymerase chain reaction (RT-PCR) diagnostic assays.

Our products in development

As part of our continuing effort to improve the processes of synthetic biology, we are currently developing next-generation BioXp systems and BioXp kits with an aim to radically transform rapid demand-response workflows in synthetic biology by consolidating supply chains and enabling global distributed manufacturing for both discovery and clinical applications. Our ultimate goal is to build what we describe as the Digital-to-Biological Converter (DBC). The DBC’s approach would begin not with oligonucleotides, which can take days to procure, but with DNA sequence data. The system we envision would take data and produce synthetic genes, or even convert those automatically into mRNA or protein. This would enable the “sequence-in, vaccines-out” concept that could replace the months-long manufacturing processes required today with a process that can be carried out in a matter of days. Each of the systems described below builds from the fundamental technology that serves as the basis of our BioXp 3250 system.

BioXp systems in development

BioXp 9600 system. This higher-throughput BioXp system leverages the foundational technology underlying the current BioXp 3250 system and has an advanced motion control system allowing for higher processing speed and greater reliability. It is designed to include additional reagent capacity and consumables that enable approximately three times as many DNA, mRNA and protein samples to be processed for each run while retaining all the functionalities of the BioXp 3250 system. In addition, we envision the BioXp 9600 system will be linked to our BioXp Oligo Printer system, which is also in development, enabling global distributed manufacturing through the launch of the BioXp DBC system. This system is currently in development with beta launch anticipated by the end of 2021 and full commercial launch anticipated in 2022.

Figure 9: Our BioXp 9600 high throughput system for synthetic DNA, mRNA and protein

BioXp Oligo Printer system. The BioXp Oligo Printer system is enabled by our proprietary enzymatic DNA synthesis reagent solution that has been successfully demonstrated in manual workflows. Unlike traditional oligonucleotide

synthesizers using hazardous chemicals (phosphoramidites) and newer oligonucleotide synthesis technologies using enzymatic chemistry (TdT), the BioXp Oligo Printer system uses a DNA ligation and amplification process to generate oligonucleotides from a made-to-stock universal library of short DNA building blocks. The BioXp Oligo Printer system will physically connect to the BioXp 9600 system as the front-end system for on-demand enzymatic DNA synthesis manufacturing of oligonucleotides of up to 100 nucleotides in length to complete the BioXp DBC system. In addition, we anticipate using this system in our facility to reduce cost of goods and to improve BioXp kit turnaround times for BioXp 3250 and BioXp 9600 customers. The BioXp Oligo Printer system may also be commercialized as a standalone instrument to serve the polymerase chain reaction (PCR) primer and oligonucleotide markets. The system is currently in development with commercial launch anticipated after 2022.

Figure 10: Our BioXp Oligo Printer system based on our proprietary enzymatic DNA synthesis technology

BioXp DBC system. This system is assembled through the integration of our BioXp Oligo Printer system and BioXp 9600 system, which we expect will have been individually developed. This system provides the ability to take digitized DNA code sent over the internet and automatically print DNA, mRNA and protein in a field-deployable system. We believe that by starting with a DNA sequence and made-to-stock biological components, the BioXp DBC system will disrupt the normal development cycles for precision medicine and infectious disease by providing a path towards an on-demand printer that can produce needle-ready vaccines with the push of a button. This system is currently in development with commercial launch anticipated after 2022.

Figure 11: Our BioXp DBC system for fully-integrated on-demand writing of synthetic DNA, mRNA and protein

BioXp Needle-Ready Vaccine Printer system. This system is enabled by the technology used to build the BioXp DBC system and is dependent on its completion. It builds off the BioXp DBC system and includes a module for DNA, mRNA, or protein scale-up with modules for quality control, lot release testing and fill and finish. The BioXp Needle-Ready Vaccine Printer system is designed to enable the globally distributed manufacturing of vaccines from digital sequence data, producing hundreds of doses of a DNA or mRNA vaccine per run with each run estimated to take a matter of days. This system is currently in development with commercial launch anticipated after 2022.

New BioXp kits in development

- BioXp rapid-scale mRNA synthesis kit. This kit will contain all the reagents necessary to rapidly produce up to 100 micrograms of biologically active mRNA from previously cloned DNA of up to 20 kb in length. Full commercial launch is anticipated in the first half of 2022.
- BioXp large-scale mRNA synthesis kit. This kit will contain all the reagents necessary to make 100 micrograms of biologically active synthetic mRNA using *de novo* synthesized, error-corrected gene fragments (i.e., an mRNA template) of up to 7.2 kb in length and will also include custom-cloning vector capabilities. Full commercial launch is anticipated in the first half of 2022.
- BioXp protein synthesis kit. This kit will contain all the reagents necessary to rapidly produce microgram-scale quantities of biologically active protein, with or without post-translational modifications, using *de novo* synthesized, error-corrected gene fragments (i.e., a protein template) of up to 7.2 kb in length and will include custom-cloning vector capabilities. We anticipate that this kit will enable broad adoption for the small-scale production of research grade protein for several workflows especially for biologics discovery and development. Full commercial launch is anticipated in the first half of 2022.

New benchtop reagents in development

- Vmax C1 cells. Transformation-ready competent cells for introducing plasmids for molecular cloning applications.

Our Biofoundry Services

We use our BioXp 3250 system, BioXp kits and benchtop reagents to perform biofoundry services for customers. Typically, these customers have not yet purchased our BioXp system or they have custom requirements. We apply sophisticated security protocols to these services designed to protect our customers' intellectual property rights, which is a key concern for customers.

The scale of our services is currently relatively small and is intended to facilitate new customer development. Our biofoundry services are performed in-house at our San Diego facility.

Our biofoundry services were established in 2020 as a value-added service intended to support customers both in their efforts to accelerate the discovery and development of therapeutics and vaccines to combat COVID-19, and to overcome challenges in their value chain created by the COVID-19 health crisis. These services enable a customer to order and receive any of the BioXp system endpoint-ready products, such as genes, clones, cell-free amplified DNA and variant libraries. As all offerings are built on the industry leading BioXp technology, customers experience the value of high quality products, with expedited turnaround times compared to similar offerings in the industry.

Importantly, our biofoundry services are strategically used in a consultative partner approach through our pilot program, allowing customers to see specific proof points prior to potentially purchasing a BioXp system. Additionally, our biofoundry services are employed to assist current BioXp system users with overflow peak volume needs or to create highly complex products, providing additional value to our BioXp installed base and creating deeper engagement with such customers. Finally, our service offerings represent a solution for those customers whose volume needs do not currently support a BioXp system purchase. In such situations, our service offerings further enable our consultative partner approach so as to engage more deeply with such customers and help demonstrate the value of the BioXp system to their ongoing research and development activities.

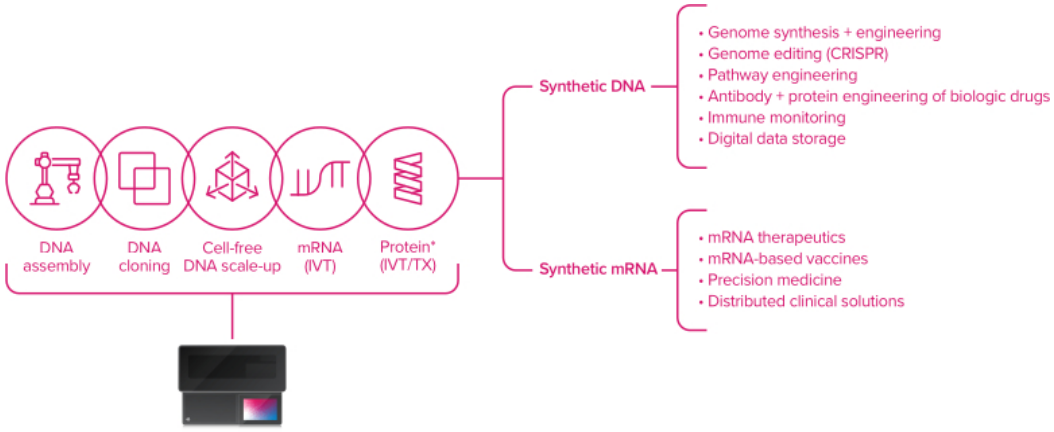
We believe that we are a world leader in genome synthesis and assembly technologies and are leveraging this capability to construct complete viral and bacterial genomes as a service for our customers. Over the past year, our custom genome synthesis service has primarily focused on producing variations of the SARS-CoV-2 genome, including new variants as they emerge. As many customers have similar interests, once constructed, many of these custom genomes become an off-the-shelf offering in our product catalog.

Workflow Solutions for Synthetic Biology Enabled Markets

Our current and future BioXp systems are intended to address the needs of the synthetic biology customer across discovery and pre-clinical development by providing an unmatched capability to synthesize high-quality DNA in as few as 8 hours and mRNA in less than 24 hours, exclusive of shipment times. With future system releases and extensions, we plan to address the continuum of research needs across the central dogma of molecular biology by

enabling cell-free production of high-quality synthetic DNA, mRNA and protein for the discovery, development and manufacturing of enabled products across a wide range of markets.

Figure 12: Our automated DNA and mRNA solutions for synthetic biology enabled workflows



*Future product offering

We are strategically focused on providing workflow solutions for markets with high-value enabled products such as those in healthcare and technology. These solutions are all based on our core portfolio of BioXp kits. Specific design software and BioXp kits (e.g., oligonucleotides) are employed depending on the desired enabled product. The appropriate application-specific BioXp kits are inserted into the BioXp system to perform the workflow solution tailored to meet the needs of the customer.

We target high-value application workflows within the synthetic biology-enabled markets. Key workflow examples are described below.

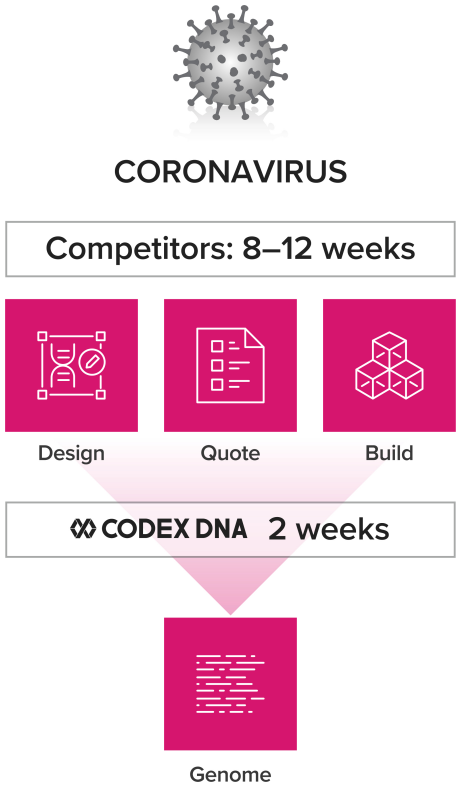
Synthetic DNA Application Workflows

We believe that with the BioXp system, scientists can perform rapid, high-throughput gene synthesis, regardless of vector size and complexity in a hands-free, automated fashion in 8 to 24 hours, exclusive of shipment times. We believe that our BioXp system offers a comprehensive value proposition that includes reduced turnaround time, increased throughput and scale, enhanced quality, complete workflow control and both synthetic DNA and mRNA formats. Our solutions allow customers to save time, improve scale and throughput and improve productivity for many synthetic biology enabled research and development workflows across multiple market segments, including the following:

1. *Synthetic DNA for genome synthesis and engineering*. DNA synthesis has become a fundamental tool throughout genetic research with increasing demand from scientists who are continuously looking to incorporate synthetic DNA into new cell-based discovery and production workflows. Addressing this growing demand requires the ability to quickly make large virtually error-free DNA molecules comprising entire gene sequences. Traditional molecular cloning and gene editing steps are tedious, manual in nature and require cellular transformation, which can take three to four weeks. Moreover, in addition to being time-consuming, classic genome engineering and DNA assembly techniques are limited in the size and complexity of constructs that can be engineered.

   BioXp system benefits: Overall, our automated workflow solution allows users to: (1) engineer genomes and vaccine scaffolds that were previously inaccessible due to size, complexity and resource limitations; (2) engineer fully-synthetic genomes lacking pathogenicity through rational redesign; and (3) rapidly pursue research and development of emerging strains or modify existing genomic constructs based on experimental results. Our BioXp system overcomes these barriers and enables rapid synthesis within days to weeks, as well as the ability to modify large constructs and full-length genomes.

Figure 13: Example of how using the BioXp in combination with our Gibson Assembly benchtop reagents can save significant time when engineering genomes



SARS-CoV-2 genome construction case study. By using several molecular biology tools that we developed over the last decade, we built all the parts of the full-length (30 kb) SARS-CoV-2 genome using Gibson Assembly reagents and the BioXp system in a single run, which can be completed in 8 to 24 hours, and then rapidly generated a completely synthetic version of the SARS-CoV-2 genome in just seven days, where comparable approaches could take as long as twelve weeks.

To support researchers worldwide in their fight against COVID-19, we have taken advantage of the rapid-iteration capabilities offered through our BioXp library kits to produce additional variants of the SARS-CoV-2 genome within just a few days. Our full-length SARS-CoV-2 synthetic genomes have been widely adopted for the development of various preventive and treatment measures. Synthetic genomes enable researchers to safely study the pandemic-causing virus and develop therapies and diagnostics without the highly regulated biosecurity facilities required for studying a dangerous pathogen.

2. *Synthetic DNA for genome editing*. CRISPR-powered genome editing has enabled significant improvements in the ability to fine-tune genomes. Originally discovered as an mRNA-based adaptive immune response in *E. coli*, the CRISPR/Cas9 system contains both guide mRNA for sequence-specific targeting and a Cas9 endonuclease that removes foreign DNA and allows integration of synthetic DNA into the host genome. That synthetic DNA is designed to specifically target a region in the host genome and make alterations (e.g. add genes, remove genes, correct mutations).

   BioXp system benefits: The system enhances productivity during the design phase of the customer's product development cycle by enabling rapid, automated synthesis of gene fragments, clones, and variant libraries. We believe that with the BioXp system, scientists can perform rapid, high-throughput gene synthesis and cloning of mRNA constructs into expression vectors, regardless of vector size and complexity, using Gibson

Assembly. In addition, our Gibson Assembly RapidAMP technology, which permits cell-free amplification of microgram quantities of DNA, means plasmid design no longer has to be tethered to an *E. coli* cloning system. In addition, our Gibson Assembly RapidAMP technology combines cloning and vector amplification in smaller mini-circle plasmids absent *E. coli*-based genes, thus improving overall transfection efficiency.

3. *Synthetic DNA for metabolic pathway engineering*. Metabolic engineering involves reconstructing and optimizing biosynthetic pathways in model organisms, creating robust “cellular factories” designed to carry out a specific task. Pathway modifications typically rely on recombinant or novel genes or gene circuits. Using recombinant or novel genes or gene circuits, metabolic pathways are modified or introduced into genomes of microbe hosts like *E. coli* or yeast. These genetically engineered hosts are routinely employed to more effectively produce valuable biomolecules for a variety of biomedical, industrial and research applications.

   BioXp system benefits: With the gene synthesis capabilities of our BioXp system and the complex genetic circuitry made possible with Gibson Assembly technology, we are able to improve the speed and accuracy of metabolic engineering for even the most complex genetic circuitry.

4. *Synthetic DNA for antibody and protein engineering of biologic drugs*. Biologics-based (e.g., antibody or protein) discovery of novel therapeutics is one of the most important areas of research for improving medical advances through engineering of antibodies or other proteins for cancer treatment, infectious diseases and inflammatory or autoimmune disorders. Monoclonal antibodies, antibody-drug conjugates, single-domain antibody variants, chimeric antigen receptor T cells (CAR-Ts) and T cell receptors (TCRs) have become invaluable therapies due to their robust recognition of targets and relatively lower side effects compared to traditional small molecule therapies.

   Desirable properties for therapeutic antibody products include high antigen-binding affinity, specificity, low immunogenicity, solubility, stability, manufacturability and adequate pharmacokinetics. Researchers involved in biologics discovery and antibody and protein engineering often leverage DNA variant library screening as an essential step in the discovery workflow. A major constraint in antibody discovery has been long lead times associated with sourcing custom-built DNA libraries used to screen new antibody variants.

Figure 14: Our synthetic DNA libraries significantly accelerate the build phase for antibody- and protein-based drug candidates

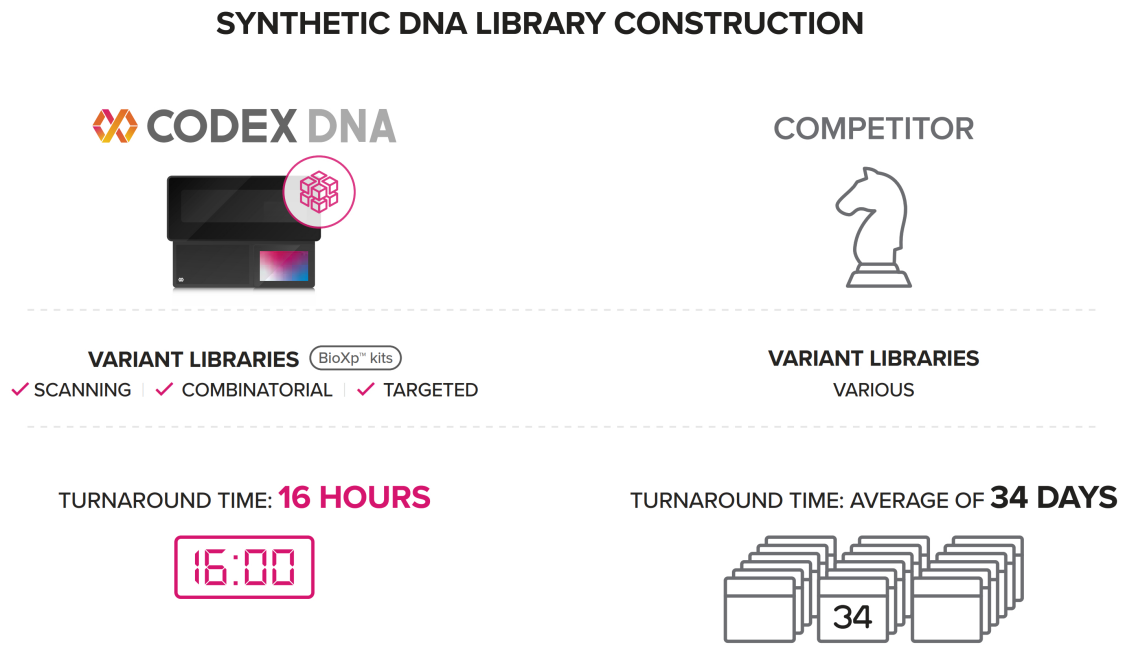


Figure 14 assumes a standard antibody or protein engineering workflow which requires the synthesis of two synthetic DNA libraries for both our BioXp system and the competitor. The turnaround time estimate for our competitors is based on the average product delivery times not including ship-days for similar products from IDT, a division of Danaher Corporation, Twist Bioscience Corporation, GENEWIZ Group, GenScript Biotech Corporation and Thermo Fisher Scientific Inc.

Customers are increasingly using our BioXp kits for variant libraries to accelerate the *design-build-test* phases for their antibody screening and optimizations stages. Specifically, we believe that utilizing libraries on the BioXp system across library synthesis, affinity maturation and codon optimization workflows accelerates research by improving productivity and reducing the time and costs associated with certain drug discovery and development programs. Additionally, we believe, with our broad menu and wide selection of library types, including combinatorial, scanning and custom libraries, we provide flexibility in antibody screening and optimization analysis to serve different needs (e.g., stability, epitope optimization) at various points in the workflow. Furthermore, these libraries are synthesized with our proprietary error-correction technology, resulting in high-fidelity genes, with what we believe to be the lowest error rate in the industry, with a median error rate of approximately one per 14 kb based on company testing.

Protein engineering is another synthetic biology enabled workflow of significant importance and caters to the growing need for improved enzymes and bioproducts for industrial production. Enzyme engineering typically begins with research to find a candidate with the best starting properties to use as a template followed by engineering cycles to find enzymes with enhanced properties.

After enzyme discovery, the build phase involves iterative rounds of library synthesis with an improved variant from the previous round selected as the template for the subsequent round. Subsequent build phase construction is rate limiting because of its sequential nature: design iterations cannot be conducted in parallel because the output from the previous phase is required as input for the next phase. Finding ways to shorten the time in this phase is key to reducing the overall project timeline. A second consideration is the burden of screening. Library synthesis can generate thousands or even hundreds of thousands of variants that must be screened to identify beneficial ones. Limiting the number of variants with a rational approach to library design combined with an automation system that amplifies and assembles constructs with high

fidelity is a key strategy to minimizing project timelines while also maximizing the probability of identifying the most beneficial variants in an unbiased manner.

BioXp system benefits: Our BioXp system provides an accelerated path for antibody and pathway engineering work flows and when compared to certain of the company's competitors determined by management to offer comparable services, reduces build phase time by over 70%. A key part of the accelerated timeline is the BioXp system's ability to deliver up to 32 libraries in 8 to 24 hours once the reagents are received, compared to the traditional method, which, depending on the method used, can take days or weeks. We believe adopting the BioXp system into the antibody or protein engineering workflow often results in the increased generation of validated leads.

5. *Immune monitoring*. Immune monitoring for patients receiving cancer immunotherapy is vital for understanding the process and efficacy throughout the course of the treatment. Characterizing the immune status for insights into the therapy's potential is essential, particularly in patients who are receiving novel immune-modulating therapies. Speed and efficiency of immune assays allow for real-time feedback and the ability to be agile in a patient's treatment regimen.

   BioXp system benefits: The BioXp system's high-throughput gene synthesis and flexible cloning modalities allow for quick screening and design of novel chimeric antigen receptors (CARs), engineered TCRs, and artificial transcription factors. Different CAR designs can therefore be investigated to enhance their tumor specificity or to fine-tune T cell activity. Further, the development of novel gene circuits or CARs to increase effectiveness of CAR-T therapy by engineering T cell mobility or mitigating immunosuppressive cues in the cancer microenvironment can help drive improved efficacy.

Synthetic mRNA Application Workflows

With the BioXp system, scientists can perform rapid, high-throughput synthesis of biologically active mRNA in a hands-off, automated fashion within 24 hours once the reagents are received. Our BioXp system is able to fully automate mRNA synthesis for the research market and offers what we believe to be a comprehensive value proposition that includes reduced turnaround time from weeks to days, enhanced quality and complete workflow control. Our solutions allow customers to address many target applications across multiple market segments.

1. *Synthetic mRNA for infectious disease vaccine discovery and development*. The need for rapid vaccine development in response to emerging pathogens has become increasingly clear during the COVID-19 pandemic. However, vaccine manufacturing is consistently complicated for manufacturers, regulators and public health officials, especially for endemic viruses (e.g., influenza), where manufacturers must adjust the vaccine to counter the virus' constant antigenic variation. To start a new influenza vaccine manufacturing campaign, a key material, the vaccine seed virus, must be changed frequently to match circulating strains in order to track the virus' antigenic evolution. The existing systems for accomplishing vaccine strain changes have required the shipment of viruses and other biological materials around the globe, which have caused delays in vaccine availability. Existing systems have also used legacy techniques such as egg-based virus cultivation, resulting in vaccine mismatches.

   In comparison, mRNA vaccine production is simple, cost-effective and can be easily adapted to accommodate new candidates within an established manufacturing pipeline. Given this, vaccinology has recently seen a shift toward synthetic mRNA approaches, which allow for rapid, scalable and cell-free manufacturing of prophylactic and therapeutic vaccines. For development of mRNA vaccines, *de novo* gene synthesis allows for increased specificity of antigen proteins, more efficient vaccine adjuvants, and safer specialized vectors. Through codon-optimization of these genes and vectors, targeted and safe vaccines can be created rapidly to treat newly emerging viral threats, such as influenza, coronaviruses and Ebola.

   Gene synthesis with codon-optimization and mutant libraries using the BioXp system is designed to accelerate the speed of vaccine development by improving the efficacy and safety of the resulting recombinant genes, adjuvants and vectors. Also, pairing antigen epitope mapping technology with the BioXp system's ability to rapidly iterate is accelerating rational design strategies for vaccine development.

   BioXp system benefits: We believe our end-to-end solution for the rapid and accurate production of cell free synthetic DNA and mRNA, when combined with our BioXp protein kit that is currently in development,

positions the BioXp system for rapid adoption within high-growth vaccine and therapeutic markets, as it allows for the acceleration of product development cycles by addressing critical bottlenecks. This is especially important for infectious disease vaccine development, such as for influenza, where the key bottleneck is the lack of quick strain *design-build-test* cycles close to flu season that makes vaccine response unpredictable.

2. *mRNA-based vaccines for precision medicine*. Neoantigens, or tumor mutated specific antigens, are major tumor rejection antigens, allowing tumors to activate the immune system and induce an efficient anti-tumor response. As personalized medicine for cancer therapeutics ramps up and becomes more feasible and affordable, individual patient neoantigen development is increasingly important. Identification of these neoantigens has greatly improved with recent advancements in deep sequencing and bioinformatics technologies. Gene synthesis and mRNA production then allow for these predicted neoantigens to be synthesized and tested for T cell reactivity, differentiating true immunogenic neoepitopes from putative ones. Since patients' mutated antigens are largely unique to the individual, speed is one of the most important goals in identifying and verifying true neoantigens for induction of the T cell-mediated immune response.

   BioXp system benefits: The BioXp system's on demand high-throughput gene and mRNA synthesis and flexible cloning into a variety of vectors allow for quick screening and development of the best personalized cancer treatments. In addition, our Gibson Assembly RapidAMP cloning and amplification process avoids the use of *E. coli*, thus eliminating endotoxin contamination and unwanted immunogenicity.

Figure 15: Our solution can deliver an average of 10 micrograms per well of biologically active mRNA in a single automated run

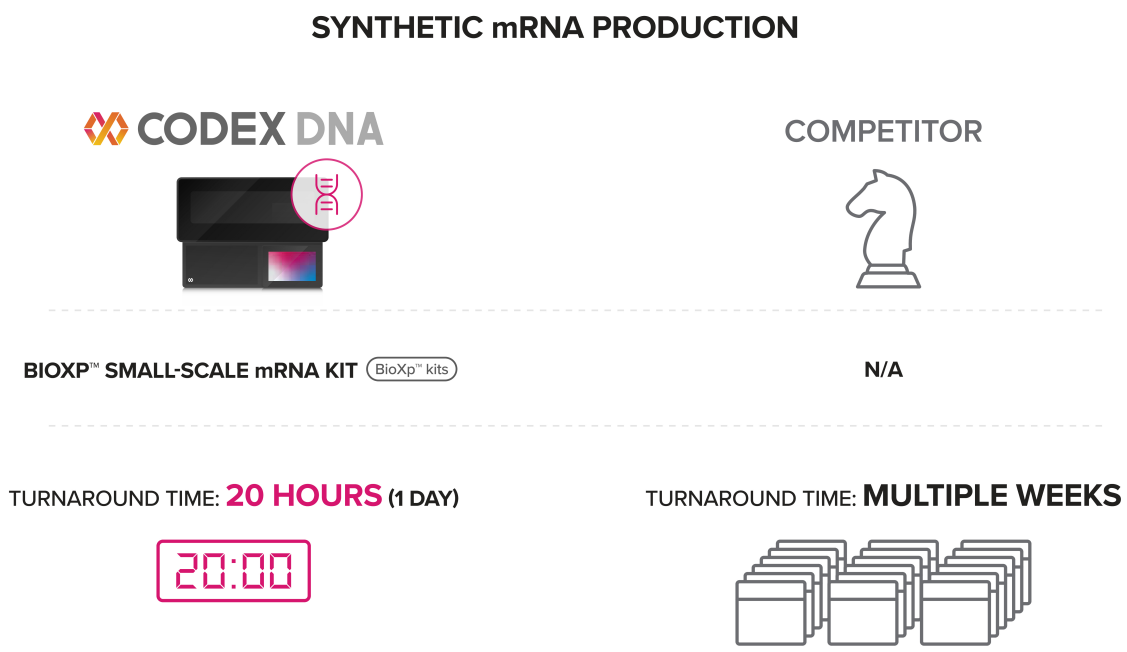


Figure 15 assumes optional runs of the BioXp system allow for pooling of up to 16 wells from a single kit, with each generating an average of 10 micrograms mRNA per well. The turnaround time estimate for our competitors is based on the general turnaround time for Aldevron, LLC, Trilink Biotechnologies, Inc., Bio-Synthesis, Inc. and others who were selected by management because of their comparable product offerings.

3. *mRNA-based therapeutics*. With COVID-19 vaccines leading the way, mRNA has become one of the more promising classes of therapeutics and is being validated by key industry players (e.g., Avantor, Inc.,

Moderna, Inc., and Maravai LifeSciences Holdings, Inc.) and emerging mRNA delivery companies (Precision NanoSystems Inc., Nutcracker Therapeutics, Inc.). Monoclonal antibody-based drugs require complex production and purification processes and aberrant post-translational modifications of the antibody are a problem. An mRNA-based approach is a possible solution, whereby the genetic information of the antibody, not the antibody itself, is delivered. Transient gene transfer aims at administering the mAb-encoding nucleotide sequences in DNA or mRNA form, rather than the mAb protein itself, directly to patients. This allows for the *in situ* production of biologicals in a cost- and labor-effective manner, potentially for a prolonged period of time. Although past research has been mainly focused on the development of plasmid DNA, the limitations associated with these "classical" approaches and the recent improvements in stability and translatability of *in vitro* transcribed (IVT) mRNA have recently led to an increased interest in mRNA as a delivery vector. In addition to safer pharmaceutical properties, such as no risk of genome integration, the transient expression of mRNA-encoded antibodies enables a more controlled exposure, with more protein production during peak expression compared to plasmid DNA.

4. BioXp system benefits: Our BioXp system can be used to rapidly produce small-scale, biologically active mRNA for accelerated iteration of the design-build-test paradigm for the identification of therapeutic candidates. In addition, a wide menu of on demand automated library synthesis enables the customer to further speed up iterative design-build-test paradigm during the drug discovery and development continuum. When library synthesis is used in combination with mRNA production, we estimate that a customer can reduce turnaround times by weeks or months when using the BioXp system for screening and optimizing the mRNA products that have the most desirable pharmaceutical properties.

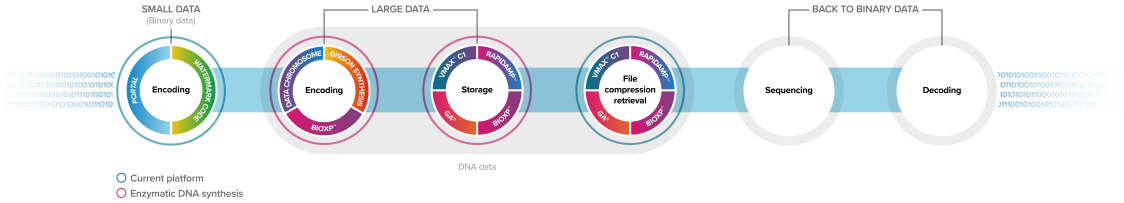
Workflow solutions in development

1. *Global distributed manufacturing of vaccines*: We aim to transform public health by enabling a new approach to producing vaccines, therapeutics and diagnostics. Based on our proprietary automated synthesis technology, we are building a self-contained system that can print life-saving treatments, starting only from information delivered digitally on our DBC system.

   By activating a global network of DBC systems, we believe it will be possible to accelerate the development and delivery of "on-demand" vaccines anywhere in the world, ultimately allowing rapid responses to disease outbreaks. We believe that the instantaneous electronic exchange of sequence data, followed by local gene synthesis and vaccine production, may replace the cumbersome isolation and shipment of viruses and nucleic acids between geographically dispersed sites where vaccines are manufactured. Also, by stocking systems with all of the materials needed for vaccine synthesis, the DBC network is designed to overcome many of the supply chain challenges that have emerged during the COVID-19 pandemic. Thus, we believe our technology will be able to replace antiquated centralized manufacturing systems with a modern distributed manufacturing systems.

2. *Synthetic DNA for digital data storage*: DNA data storage has been a growing area of interest due to its encoding power with a capacity to store more than 200 petabytes (each one million gigabytes) of data per gram of DNA. Our technology can be mapped to nearly all of the critical steps in the DNA data storage workflow, including (1) encoding a binary digital file into a DNA sequence data file, (2) synthesizing the DNA data file, (3) storing millions of DNA data files in one tube of DNA and (4) retrieving the DNA data file from the tube. Using our BioXp system, which is designed to have the capacity to store 108 kilobytes of data (e.g., single web pages and small images) per instrument per day, the entire DNA data storage workflow can be collapsed into a single automated system.

Figure 16: We envision our BioXp digital data storage solutions will be critical to enabling the broad-based use of distributed applications.



Our Technology

Our system is powered by many key innovations that provide unparalleled capabilities, notably:

Gene synthesis

Our robust gene synthesis process is proprietary and enables the simultaneous assembly of hundreds of oligonucleotide pools of up to several thousand kilobase pairs in length, including a wide range of complexity (e.g., 20-70% GC content, repetitive DNA sequence). Our proprietary error-correction process produces synthetic DNA sequences, virtually error-free, from beginning to end. BioXp gene synthesis kits leverage this proprietary gene synthesis technology, which involves:

- the design of single-stranded oligonucleotide sequences comprising a DNA sequence, and novel chemistry and thermal cycling parameters for the robust assembly of those chemically synthesized oligonucleotides into long double-stranded DNA products; and
- a two-step error-correction process where error-containing DNA products are removed through a combination of a mismatch-specific endonuclease working in concert with an exonuclease.

In the final step, only error-free genes are amplified by PCR resulting in high yields of error-free DNA. Because all applications currently rely on gene synthesis, this technology is used within every BioXp kit. We have also developed a second proprietary gene synthesis process that uses ultra-short oligonucleotides that assemble into high-fidelity synthetic genes without enzymatic error correction procedures.

Library synthesis

Our robust gene synthesis technology enables the construction of several DNA variant library types including:

- scanning libraries with varied single, contiguous amino acid sites, including site-saturation and alanine scanning libraries;
- combinatorial libraries with varied, multiple non-contiguous amino acids sites using degenerate bases to optimize protein binding and function; and
- targeted libraries, with specific mutations distributed over the sequence space to achieve the desired diversity.

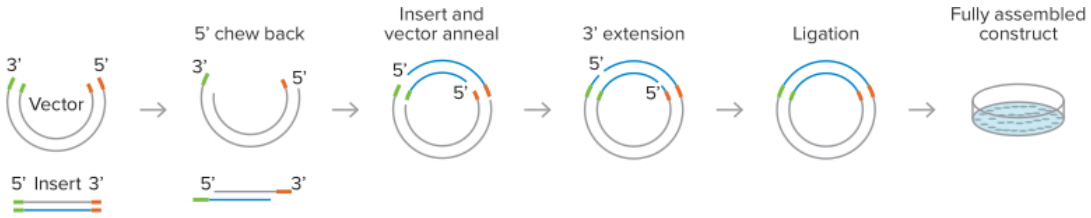
Our library synthesis technologies are powerful tools for manipulating protein structures for optimization studies in biologics discovery, protein engineering and several other disciplines. This technology is included in our BioXp library kits and enables the BioXp system to generate as many as 32 libraries per instrument in a single 8 hour run, with each library containing an amino acid diversity as high as 10^{10}.

DNA cloning

Our robust molecular cloning method is proprietary and commonly referred to as Gibson Assembly across the industry. The method can simultaneously combine as many as 10 DNA fragments based on sequence identity. It requires that the DNA fragments contain approximately 20 to 40 base pair overlaps with adjacent DNA fragments. These DNA fragments are mixed with a cocktail of three enzymes, along with buffer components. The three required enzyme activities are: exonuclease, DNA polymerase, and DNA ligase. The exonuclease splits DNA from one of its ends resulting in single-stranded regions on adjacent DNA fragments, which can anneal to each other. The DNA polymerase incorporates nucleotides to fill in any gaps. The DNA ligase covalently joins the DNA of adjacent

segments, thereby removing any imperfections in the DNA. The resulting product is different DNA fragments joined into one. Either linear or closed circular molecules can be assembled. With over 6,000 citations in scientific literature, Gibson Assembly is one of the most widely-used molecular cloning methods used to create recombinant DNA. It is named after its creator, Dr. Daniel Gibson, who is our Chief Technology Officer and co-founder. We believe that the Gibson Assembly method can be used to rapidly clone multiple DNA fragments into any vector in one hour or less without the use of restriction enzymes.

Figure 17: Gibson Assembly technologies for DNA assembly



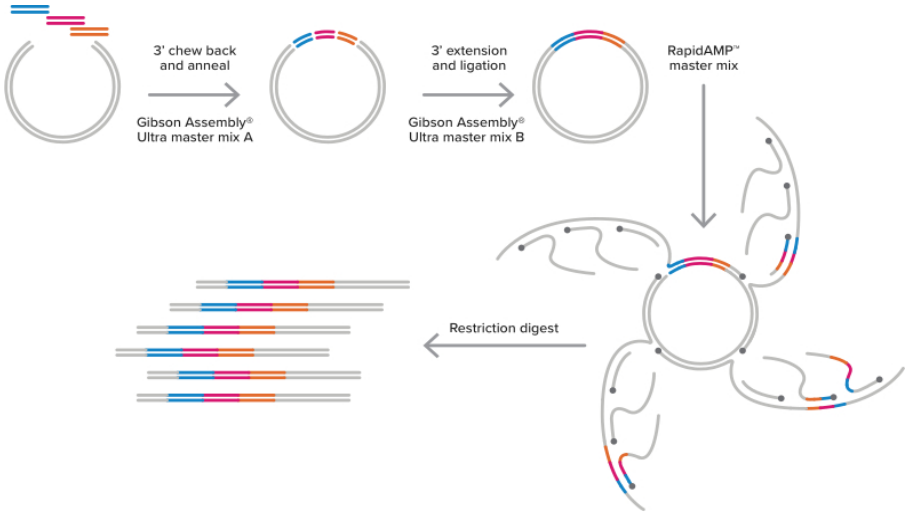
The BioXp cloning kits leverage Gibson Assembly in a proprietary fashion to bring together up to four gene fragments in up to four vectors, permitting larger DNA to be constructed and providing increased flexibility in cloning strategies. Multi-fragment assembly and cloning on the BioXp system gives customers the power to design, build, test and iterate genes more rapidly.

Cell-free amplification of cloned DNA

The Gibson Assembly process generates circular products that are permanently sealed by DNA ligase. We have taken advantage of these two essential features to develop a proprietary cell-free amplification process that combines our Gibson Assembly technology with components of the well-established rolling circle amplification (RCA) technology. Once the Gibson Assembly reactions are complete, reaction products are incubated for several hours in a mixture containing a DNA polymerase and random hexamers. The BioXp RapidAMP cell-free DNA amplification kit and the benchtop Gibson Assembly RapidAMP kit leverages this technology to allow users to assemble and amplify constructs to achieve transfection-ready DNA in a single day. With this technology, high-quality, high-fidelity DNA can be rapidly produced, all while eliminating tedious tasks associated with transformation, cell culture and *E. coli* harvest. Gibson Assembly RapidAMP reagents are available as a benchtop reagent kit or an automated cell-free amplification solution for the BioXp system. Benefits include:

- accelerated design-build-test cycles;
- endotoxin-free DNA products;
- an alternative to amplification strategies that fail due to biological reasons within host organisms; and
- propagation of DNA without unwanted vector elements.

Figure 18: Gibson method for cell-free DNA production



System engineering and automation

The BioXp system contains fluid processing and precise thermal control to run all applications, including the synthesis and scale-up of DNA and mRNA. The proprietary and highly reliable automation components of the BioXp system include patented thermalcycler technology and sample handling and sealing devices. Significant software development has resulted in an easy-to-use interface with robust diagnostics and error detection as well as remote access capability to quickly address any issues. Job processing commands are highly tuned, resulting in consistent performance and reliability. Key features of the BioXp 3250 system include:

- a high precision patented thermalcycler for precise control of thermal cycling parameters;
- a high-precision fluid handling system for accurate transfer and mixing of reagents;
- a high-reliability 5-axis motion control system for accurate positioning;
- an integrated camera system for confirmation of proper loading and reading barcodes on the components of BioXp kits;
- a touchscreen interface and integrated computer processor, which allows for simple, intuitive operation;
- internet connectivity enabling custom scripts to be loaded for each customer's needs, post-run data to be retrieved and remote service/updates to be performed;
- a proprietary sample handling system that allows movement of samples throughout the process; and
- a flexible system design that anticipates development of new protocols to continue collapsing customer workflows.

Cloud-based design and analytics

The BioXp portal includes design tools used to break down desired DNA sequences into building blocks sent to the user, ultimately to be synthesized and assembled on the BioXp system. Our predictive modeling of the complexity and level of difficulty ensures that the probability of success in building a DNA sequence is greater than 98%. The co-development process by our biologists and engineers has resulted in a proprietary combination of synthetic biology and automation. The BioXp system is highly flexible and is controlled by processing information from the cloud, tailored for a user's specific application. There is no need for the user to develop custom processing scripts or modify parameters because our ordering software and associated BioXp barcodes ensure that the desired application is processed.

Large and complex DNA synthesis up to complete genomes

Our gene synthesis technology in combination with the Gibson Assembly cloning process is what enables us to excel in the automated synthesis and engineering of large and complex DNA constructs. Our proprietary tools combine

novel DNA design, synthesis and assembly techniques to manufacture long DNA constructs, including the synthesis of a complete genome or chromosome. Using these technologies, our team has chemically synthesized several bacterial and viral genomes, including some of the largest chemically-defined structures ever synthesized in a laboratory.

The final genetic constructs required to develop many commercial applications are longer than those that can be readily synthesized using standard industry techniques. While a simple sequence of genes may be several thousand base pairs long, the genomes of many bacteria may be up to several million base pairs long, while the genomes of some viruses can exceed one million base pairs in length. Traditional DNA synthesis and assembly approaches are not practical for synthesizing genomes of that length.

Vmax host cell engineering

Vmax is an engineered form of *Vibrio natriegens*, which, under optimal conditions, has the fastest known growth rate of any non-pathogenic organism. Vmax has high-value applications in research and commercial production. Many high-value pharmaceuticals, industrial enzymes and chemicals are currently made in bacteria such as *E. coli.* We aim to improve the manufacturing of these products with Vmax, especially the high-value biologics. We are developing an advantaged Vmax strain and reagents for molecular cloning (Vmax C1) and have developed an advantaged Vmax strain for protein expression (Vmax X2) applications. We have commercialized Vmax X2 and intend to commercialize the Vmax C1 as benchtop reagents. We believe that, in one to two years, Vmax could be capable of challenging the dominance of the prevailing *E. coli* cell-based production systems that are used to produce many high-value pharmaceuticals, industrial enzymes and chemicals. We plan to monetize Vmax cell lines through arrangements with biopharmaceutical companies.

Research and Development

Our research and development team has been at the forefront of discovery and development of synthetic biology workflows for over 15 years, including more than 10 years of experience automating many of those processes. We believe that this experience gives us industry-leading know-how, intellectual property and time-to-market advantages with respect to new products. We have specific and valuable experience and knowledge related to problem solving and have a deep knowledge of applicable synthetic biology research and development methodologies. We have particularly strong technical core competencies related to constructing large and complex strands of DNA and automating synthetic biology applications across multiple end-to-end workflows.

The overarching goals of our research and development programs are to continue to bring new technologies to market that address the most pressing questions in synthetic biology solutions. Our research and development department hosts the key proprietary synthetic biology tools and technologies, with applications across a wide variety of industries, sponsors research and development efforts to apply those tools and develops new opportunities. To this end, we plan to focus our research and development efforts on the following areas:

- *Strategic partnerships*: We focus partnering efforts in the areas of mRNA vaccines, biologics discovery, cell engineering and DNA data storage validating our technology systems.
- *New capabilities and solutions for our current BioXp system*: Our development efforts include new reagent modules such as a protein synthesis kit and a large-scale mRNA synthesis kit. The BioXp protein synthesis kits will be designed to enable broad adoption for the small-scale production of research-grade protein for several workflows, especially for biologics discovery and development. The BioXp large-scale mRNA synthesis kit will contain all the reagents necessary to make 100 micrograms of biologically active synthetic mRNA and will include custom-cloning vector capabilities. In addition, we are developing a product line extension for our BioXp system in the form of a higher throughput BioXp 9600 automated workstation, which has approximately three times the processing capability of our current system.
- *New workflow solution-focused products*: In the near-to-medium term, our primary focus is on perfecting our enzymatic DNA synthesis reagent solution which will enhance our margins by allowing us to in-source the production of key reagent components. Once developed, this technology will be integrated into the BioXp Oligo Printer system, which will physically connect to the BioXp 9600 system as the front-end system for the on-demand enzymatic DNA synthesis manufacturing of oligonucleotides.
- *A distributed drug manufacturing system*: Longer term, we aim to develop reagent and instrumentation solutions that will enable the distributed manufacturing of biological materials on the BioXp DBC

system. Following this, we aim to develop the BioXp Needle-Ready Vaccine Printer system, a fully automated, push-button and walkaway printer that is designed to enable the distributed manufacturing of vaccines. This system is intended to produce several hundred doses of a DNA or mRNA vaccine per run in a matter of days.

As of June 1, 2021, we employed 25 employees in R&D, primarily located in San Diego, California. The R&D team consists of two teams, a scientific and an engineering team.

- ***Scientific Team***: Thirteen experienced scientists, approximately two-thirds of whom hold a Master's degree and one-third of whom hold a Ph.D. The majority of the scientists are molecular biologists with vast experience in building new technologies related to benchtop and automation procedures for DNA sequencing and synthetic biology workflows. The team is led by Dr. Daniel Gibson, who is responsible for some of the foundational discoveries in synthetic biology, including the Gibson Assembly method.
- ***Engineering Team***: Twelve personnel with expertise in software, fluidics, mechanical, electrical and embedded firmware development in both RUO and good manufacturing practice (GMP) environments. The team has decades of experience in applications of state-of-the-art engineering designs and solving complex systems for laboratory and medical devices. They are experts in translating the latest molecular biology workflows into reliable, repeatable robotic fluid handling steps processed under precise temperature controls.

Manufacturing

Our product portfolio includes the BioXp 3250 system, Gibson Assembly, Vmax X2 cells and biofoundry services. Our operational infrastructure ensures that the entire production line, including supply chain, reagent kit manufacturing, biofoundry services, quality control, process development, filling and packaging, quality assurance and logistics, is fully integrated and coordinated.

We utilize single-source third parties for assembly of key components of our BioXp instrument and other suppliers to provide key reagents. We have identified a list of our single-source suppliers for key reagents and have started to identify and validate new second-source suppliers for those key reagents. Having dual sources for certain of our raw materials will reduce the risk of a potential production delay caused by a disruption in the supply of a critical raw material or component. Our mitigation plans for these single-source key reagents is to have six to twelve months of safety stock inventory on hand as we qualify new second-source suppliers. For the key reagents where we cannot find a suitable second-source supplier, we plan to continue to maintain our six to twelve month safety stock inventory.

We create validation protocols for each potential new second-source supplier and only add those new second-source suppliers once they have met the validation requirements. We require testing on three separate lots of the new key reagent and we validate key reagent performance and expiration dating compared to the current key reagent performance and dating criteria. Each validation protocol is different as each key reagent will have different characteristics and testing protocols as well as acceptance criteria and expiration dating.

BioXp 3250 system manufacturing is contracted out to D&K Engineering, Inc. (D&K), a third-party ISO 13485 Certified and FDA registered contract manufacturer located in San Diego, California. D&K services several of the largest life science instrument companies. It has proven capabilities related to design optimization, new product launches and product line extensions, as well as an ability to facilitate a substantial scale-up of unit volumes, thereby supporting our growth for the foreseeable future. Its capabilities include GMP-compliant manufacturing, which may be relevant to our future product launches. We do not have a long term supply agreement with D&K, and rely on it to provide quotes and accept purchase orders that we issue from time-to-time. Our outsourced production strategy is intended to drive cost leverage and scale and avoid the high capital outlays and fixed costs related to constructing and operating a manufacturing facility. Under the terms of our relationship with D&K, we have historically benefited from volume-based pricing on our purchase orders. We perform final quality control testing of the BioXp 3250 system in-house at our facility in San Diego. Turnaround time for BioXp 3250 production is typically two to three weeks. We keep the contract manufacturer aware of our future supply needs based on a rolling three-quarter forecast and typically maintain less than thirty days of inventory.

In October 2015, we entered into a Supply Agreement with Integrated DNA Technologies, Inc. (IDT), a division of Danaher Corporation, which was amended in March 2020 (the Supply Agreement), pursuant to which IDT agreed to

supply us with oligonucleotides, which we use as reagents in our research and commercial operations. The prices of the oligonucleotides purchased pursuant to the Supply Agreement are fixed during the term of the Supply Agreement, subject to minimum ordering requirements. The Supply Agreement contains certain dedicated capacity representations, but does not commit IDT to supply any minimum amount of oligonucleotides outside of accepted purchase orders. The initial term of the Supply Agreement was for a period of five years, which expired in October 2020, but automatically renews for consecutive one-year terms, unless a cancellation notice is given by either party ninety days prior to the end of the then current term.

Figure 19: Manufacturing process for the BioXp 3250 system

Reagent manufacturing and storage is completed within our headquarters in San Diego, California. All reagents are manufactured, quality-control tested and released to inventory by our quality assurance department certifying that our reagents meet our quality standards. We maintain safety stocks of key reagents in quantities that we believe mitigate the effects of any supply disruptions. As a result, customer orders for reagents can typically be completed for next-day delivery. Key components of the reagents are sourced from well-established third parties, most notably, IDT and Eurofins Scientific SE.

Figure 20: Manufacturing of BioXp kits and benchtop kits

As of June 1, 2021, we had 14 employees dedicated to operations, with nine focused on manufacturing, four focused on quality control and one focused on logistics.

Commercial Operations

We commercially launched our current solution in September 2019, which now includes the BioXp 3250 system, BioXp kits with associated cloud-based application scripts, and benchtop reagent kits. From the initial launch of our solution through June 1, 2021, we have launched a total of eight BioXp kits, three benchtop reagent kits, and several other synthetic biology products, including 12 SARS-CoV-2 full-length genomes as well as our Vmax X2 cells. We have placed approximately 35 BioXp 3250 systems globally. We target customers in the fields of personalized medicine, biologics drug discovery, vaccine development, genome editing and cell and gene therapy. As of June 1, 2021, our customer base was composed of over 300 customers and included 15 of the 25 largest biopharmaceutical companies in the world ranked by 2020 revenue, excluding affiliates of those companies. Our customer base also includes leading academic research institutions, government institutions, CROs and synthetic biology companies.

One of our customers, NEB, accounted for 21% of our revenue for the year ended December 31, 2020, based on royalties paid under a Confidential Settlement Agreement. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations” for further discussion on our relationship with NEB.

As of June 1, 2021, we employed a commercial team of 48 employees, many with significant industry experience. Of the 48 commercial employees, 39 were in sales, marketing and corporate development. As of June 1, 2021, our commercial team included 21 quota carrying sales professionals spanning business development managers, inside sales and field application scientists. We employ a direct sales model in North America and four major European markets (United Kingdom, Germany, France and Benelux), while selling through more than 15 channel partners across Europe, the Middle East, Africa and Asia Pacific.

Our commercial team is focused on driving active placements of BioXp systems and maximizing their utilization at the most iterative, costly and time-consuming steps across our customers’ workflows. Potential customers can gain access to our system via direct purchases, services offerings or through strategic partnerships.

To maximize our commercial reach, we have distribution agreements with international channel partners for our products. These agreements allow us to reach approximately 60 countries globally, with key focus on networks in

Europe, the Middle East, Africa and Asia Pacific. We have a key European logistics hub in Italy in partnership with Bright Bioworks S.r.l and a relationship with a European software engineering company, Solvd, Inc., to support our customer portal and to provide European customer and technical support. We sell our products directly in the U.S., providing instrument field services through a hybrid of in-house and third party-contracted engineering support.

As of June 1, 2021, we employed a service and support team of nine employees focused on delivering an outstanding customer experience.

Competition

Our market is characterized by highly competitive and dynamic products, rapid technological advancements and continually evolving customer demands. We face competition from core synthetic biology systems, such as Thermo Fisher Scientific Inc.; Danaher Corporation; CureVac N.V.; GENEWIZ Group, which was acquired by Brooks Automation, Inc.; GenScript Biotech Corporation; DNA Script SAS; Integrated DNA Technologies, Inc.; Molecular Assemblies, Inc.; Nuclera Nucleics Ltd; Nutcracker Therapeutics, Inc.; Twist Bioscience Corporation; Aldevron, LLC; TriLink BioTechnologies, Inc. and others. Our competitors and their products and services are focused on discrete steps across various synthetic biology applications including gene synthesis, protein engineering, cell engineering, tools and automation, software, food and agriculture, materials, aquaculture, biopharmaceutical, health and others.

While our industry is composed of many companies offering services or discrete products, we believe there is a lack of an existing, comprehensive solution enabling end-to-end control of biologics and vaccine discovery and development workflows in-house.

Arrangements with Commercial and Governmental Entities

We believe that our technology is applicable to discovery and development in the following fields: vaccines, biologics, diagnostics, agriculture, animal health and food science. In the ordinary course of business, we enter into arrangements with commercial channel partners and others to maximize our commercial reach. For example:

- Our BioXp system allowed for rapid and accurate production of the SARS-CoV-2 spike protein gene used in the COVID-19 vaccine developed by Pfizer, Inc.
- We are in the process of establishing evaluation and service agreements with several smaller vaccine and therapeutically focused biotechnology companies.
- We have completed multiple outlicense and service/supply agreements with diagnostic product providers, enabling engineered synthetic controls for laboratory proficiency and diagnostic kits or drug screening services.
- We provided biofoundry services to Cellibre, Inc. and provided enriched libraries of synthetic DNA related to its cellular agriculture services.
- Several customers, including the La Jolla Institute for Immunology, have successfully used our solutions, including the BioXp 3250, to produce biologically active mRNA for use in vaccine development for oncology applications.
- We have licensed our DNA technology to a food sciences company for cellular engineering in plant-based meat products.
- For product development and commercialization, we have entered into early access and beta test agreements with target customers to obtain their feedback on near-launch products prior to global product launch. Recent examples include Vmax C1 beta test material transfer agreements and BioXp script development agreements.
- We have also granted non-exclusive research product outlicenses to three research reagent providers under our Gibson Assembly patents and receive ongoing royalties on their sales of licensed products.

We are a sub-awardee of a multimillion-dollar, multiyear grant from the United States Department of Agriculture relating to screening and prevention of citrus greening diseases. We also work with several U.S. government laboratories and large state health laboratories to ensure prompt access to synthetic genomes useful for monitoring pandemic response.

We enter into these arrangements in the ordinary course of business and do not consider any one of them to be material to our business.

Intellectual Property

Protection of our intellectual property is fundamental to the long-term success of our business and is an important commercial strategy. Like other companies in the life sciences industry, we seek to protect our significant technologies by pursuing and maintaining patent protection. We also seek to protect aspects of our business as confidential know-how and as trade secrets. Our commercial success depends in part upon our ability to obtain and maintain protection afforded by laws directed toward intellectual property rights, to defend and enforce these rights and to operate without infringing the intellectual property rights of others.

The patent positions for high-technology, life sciences companies like ours are generally uncertain and can involve complex legal, scientific and factual issues. Issued patents are subject to interpretation as to their scope and applicability, and that uncertainty is typically not resolved in whole or in party except in litigation. Patent applications involve even more uncertainty because the scope of claims pending in a patent application may be significantly reduced or otherwise changed in order to obtain the grant of a patent. Moreover, even if granted, the scope, validity and enforceability of granted claims can be challenged in a variety of proceedings. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the relevant patent office, or made a misleading statement, during prosecution. Third parties may also raise similar claims before administrative bodies in the United States or abroad, outside of the context of litigation *per se*. Such mechanisms include *ex parte* re-examination, *inter partes* review, post-grant review, derivation and pre- and post-grant opposition proceedings.

As a result, we cannot guarantee that any of our products or technologies will be protected or remain protectable by enforceable patents. We cannot predict whether any particular patent application that we are currently pursuing in any particular jurisdiction will be granted as a patent or whether the claims of any patents we obtain will sufficiently exclude others from making, using or selling products or services in competition to us. Nor can we guarantee that third parties will not circumvent our patent claims by designing around them.

Changes in the patent laws or interpretation of the patent laws in the United States or in other jurisdictions could increase these uncertainties and the costs surrounding prosecution of patent applications and enforcement or defense of issued patents. For instance, under the Leahy-Smith America Invents Act (the America Invents Act), enacted in September 2011, the United States transitioned to a first inventor to file system in which, assuming that other requirements for patentability are met, the first inventor to file a patent application on a given invention is entitled to a patent on the invention regardless of whether a third party was the first to invent the claimed invention. The America Invents Act also provides for third-party submission of prior art to the USPTO during patent prosecution and additional procedures to challenge the validity of a patent after grant, including post-grant review and *inter partes* review. The America Invents Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Furthermore, the courts have held that patent claims that recite laws of nature are not patent eligible, but patent claims that recite sufficient additional features that provide practical assurance that claimed processes are genuine inventive applications of those laws may be patent eligible. But what constitutes a “sufficient” additional feature is the subject of uncertainty. The USPTO has published and continues to revise and publish guidelines for patent examiners to apply when examining claims for patent eligibility as the case law continues to evolve. Patent eligibility is also an area of the law under continual development in other jurisdictions around the world.

In addition, U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained.

Our patent portfolio includes more than 300 pending or issued cases worldwide. The portfolio focuses on instruments, devices and methods for synthesizing and assembling high-fidelity DNA, while also including genome engineering and editing technologies. The instrument portfolio includes domestic (U.S.) and foreign patents for the BioXp and the DBC instruments, which allow users to synthesize DNA molecules of specific sequence from pre-synthesized oligonucleotides or directly from digital DNA sequence using nucleotides, thus allowing users to rapidly synthesize DNA molecules on demand in their own laboratory. Further protection is provided by method patents

relating to molecular biology processes performed on the instruments, patents protecting a key instrument component and a bio-security component useable with the instruments to counter misuse. The DNA synthesis portfolio features the widely used Gibson Assembly method, a staple method in DNA laboratories around the world that allows users to join multiple DNA fragments in a single reaction.

Other highlights of the portfolio include a genome editing technology that provides an alternative technique to CRISPR/Cas9, a technology for generating synthetic genomes that permits the user to “pop in” novel genome segments containing pre-programmed functions, and a “watermarking” DNA data storage method for encoding human readable text conveying a non-genetic message into nucleic acid sequences. The portfolio also includes issued patents directed to “endotoxin free” *Vibrio* organisms that provide researchers with the ability to use the ultra-fast-growing *Vibrio natriegens* (Vmax) organism in research and production applications with reduced risks of endotoxin in the product. More recently filed patent applications relate to a technology focused on building DNA molecules of ultra-high fidelity suitable for synthetic biology applications, and a technology permitting users to synthesize any possible DNA sequence at high fidelity from a library having a limited number of oligonucleotide members.

The portfolio contains U.S. patents or allowed U.S. applications relating to the BioXp and DBC instruments, and our Gibson Assembly methods and several foreign patents relating to the BioXp systems and Gibson Assembly. The portfolio also contains U.S. patents or allowed U.S. applications relating to our fast-growing *Vibrio natriegens* host cell organisms and numerous granted foreign patents for our various DNA synthesis methods.

The portfolio includes patents and pending patent applications in three main technology areas of instrumentation, DNA synthesis and assembly and genome engineering, as follows:

Instrumentation

As of March 1, 2021, this section of the portfolio contains one allowed U.S. patent application relating to the BioXp and an issued U.S. patent for the DBC. In Australia, we have patents for both BioXp and DBC; and in Japan we have a patent for BioXp and a pending application for DBC. Other patent applications are pending in the EPO, Canada, China, Israel, and India. The nominal terms of the foregoing patents (including any patents granted on the pending applications) will expire in 2033. In addition, the portfolio contains patents to a key instrument component, a lid engineered to enclose a sample retention area within the very small confines of a laboratory instrument, issued in the U.S., Australia, and China, with a corresponding application pending in the EPO. The nominal terms of the foregoing patents (including any patent granted on the pending application) will expire in 2035. This section of the portfolio also features two U.S. patents relating to a bio-security component to counter misuse of the BioXp and DBC instruments; the nominal term of these patents will expire in 2035.

DNA Synthesis and Assembly

This section of the portfolio features the Gibson Assembly patents, and contains patents in the U.S., Europe (validated in seven European Patent Convention (EPC) member countries), Japan, India, Israel, and Canada, with pending applications in China and Singapore. The nominal terms of the foregoing patents (including any patents granted on the pending applications) will expire in 2029. In addition, this section includes a recently filed U.S. application and PCT application, and a second recently filed U.S. application, each relating to advanced methods of enzymatic DNA synthesis from a pre-manufactured library of components. These applications are still unpublished and remain confidential. Additionally, as of March 1, 2021, this section of the portfolio features:

- patents for our advanced error correction technology in the U.S., Europe (validated in seven EPC member countries), Japan, Australia, and China, expiring in 2033; corresponding applications are pending in Israel, India, Singapore. The portfolio also contains patents to an earlier error correction technology issued in the U.S., Europe (validated in six EPC member countries), Japan, Canada, and Australia, expiring in 2026;
- a pending U.S. application to a “PCR variant” method for assembling DNA molecules. The nominal term of any patent granted on this application would expire in 2037;
- patents covering our earlier (pre-Gibson Assembly) DNA assembly methods issued in the U.S. (two patents), Canada (one patent), Malaysia (one patent), and Europe (two patents, each validated in six EPC member countries), expiring in 2026;

- patents relating to a method of sequencing and retrieving individualized or monoclonized nucleic acids from a solid support, issued in the U.S. (four patents) and Europe (three patents, each validated in eight EPC member countries), expiring in 2027;
- issued patents to a PEG-mediated DNA assembly method in Europe (validated in seven EPC member countries), Australia, and Singapore, expiring in 2033, with corresponding applications pending in the U.S., Japan, Israel, India, Canada, and China;
- patents relating to a method of building large DNA molecules, issued in the U.S., Europe (validated in six EPC member countries), Japan, India, China, Australia, Singapore, and Malaysia, expiring in 2028; and
- issued patents to our Rolling Circle Amplification method in the U.S., Europe (validated in six EPC member countries), China, India, Australia, Israel, Brazil, and Hong Kong, expiring in 2026.

Genome engineering

This portfolio family contains one U.S. patent covering a vector useful in Vibrio organisms, expiring in 2036. This family also contains applications for a low endotoxin *Vibrio natriegens* host cell in the U.S. (allowed), Europe and Canada, which if granted as patents would expire in 2037. Additionally, this portfolio contains pending U.S. and European applications relating to a Vibrio organism that remains culturable after storage at low temperatures, which if granted would expire in 2038. Additionally, as of March 1, 2021, this section of the portfolio features:

- a recently allowed U.S. patent application covering our genome editing “pop in cassette” technology, as well as pending foreign applications in Canada and Australia;
- one recently allowed U.S. patent application relating to a method of editing a gene (an alternate method to CRISPR-Cas9). This family also includes patents relating to methods of cloning donor genomes and making synthetic cells issued in the U.S. (two patents), Europe (one patent validated in five EPC member countries), Japan (three patents), China (two patents), India (one patent), Australia (one patent) and Israel (two patents), expiring in 2030;
- patents relating to methods of creating synthetic cells and nucleic acid constructs issued in the U.S. (two patents), Europe (two patents, each validated in six EPC member countries), Japan (two patents), Canada (two patents), Australia (two patents) and Taiwan (one patent), expiring in 2026;
- patents relating to transplantation of a Mycoplasma genome issued in the U.S., Europe (validated in five EPC member countries), Japan, China, India, Australia, Israel and Singapore, expiring in 2028;
- patents relating to encoding identifying watermark sequences into genomes issued in the U.S., Europe (validated in six EPC member countries), Canada, Australia and South Africa, expiring in 2030; and
- patents relating to a method of transferring a genome from a bacteria into a yeast host cell issued in the U.S. and Europe (validated in the UK, Germany, and France), expiring in 2033.

We protect other valuable aspects of our business as confidential know-how, and, if eligible, as trade secrets. For example, we protect certain aspects of our manufacturing processes as trade secrets. Although trade secret protection does not expire as long as the protected information is kept secret from the public, it can be challenging to maintain such efforts. We implement measures designed to protect our trade secrets and other confidential proprietary information, including by physically restricting access to our premises and physically or electronically securing our confidential information, as well as by requiring our employees, consultants, scientific advisors, contractors and commercial partners to execute non-disclosure agreements. However, third parties may independently develop the subject matter of trade secrets that we hold, in which case we have no remedy if such parties should use such subject matter in furtherance of their own commercial interests. Further, while the law may provide remedies against third-party misappropriation or other unlawful access to our trade secrets and other proprietary information, such remedies may be difficult to obtain in practice and may not make our business whole even if successfully obtained. As a result, we may be unable to obtain meaningful benefits from laws intended to protect trade secrets or similar intellectual property rights.

In addition, third parties may initiate litigation against us alleging infringement, misappropriation or other violation of their proprietary rights or seeking a declaration of their noninfringement of our intellectual property rights. An adverse result in any such proceeding could include enjoining of the commercialization of our products, result in significant damages and have a material adverse effect on our business. Even if we are successful in any such

litigation, we may be required to incur significant costs and dedicate significant personnel time in defending such litigation.

Government Regulation

FDA Medical Device Regulation

The development, testing, manufacturing, marketing, post-market surveillance, distribution, promotion, advertising and labeling of certain of medical devices are subject to regulation in the United States by the FDA under the Federal Food, Drug, and Cosmetic Act (FDC Act) and comparable state and international agencies. FDA defines a medical device as an instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent or other similar or related article, including any component part or accessory, which is (i) intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or prevention of disease, in man or other animals, or (ii) intended to affect the structure or any function of the body of man or other animals and which does not achieve any of its primary intended purposes through chemical action within or on the body of man or other animals and which is not dependent upon being metabolized for the achievement of any of its primary intended purposes. Medical devices to be commercially distributed in the United States must receive from the FDA either clearance of a premarket notification, known as 510(k), or premarket approval pursuant to the FDC Act prior to marketing, unless subject to an exemption.

The FDA classifies medical devices into one of three classes. Devices deemed to pose lower risk to the patient are placed in either class I or II, which, unless an exemption applies, requires the manufacturer to submit a pre-market notification requesting FDA clearance for commercial distribution pursuant to Section 510(k) of the FDC Act. This process, known as 510(k) clearance, requires that the manufacturer demonstrate that the device is substantially equivalent to a previously cleared and legally marketed 510(k) device or a “pre-amendment” class III device for which pre-market approval applications (PMAs) have not been required by the FDA. This FDA review process typically takes from four to twelve months, although it can take longer. Most class I devices are exempted from this 510(k) premarket submission requirement. If no legally marketed predicate device can be identified for a new device to enable the use of the 510(k) pathway, the new device is automatically classified under the FDC Act as class III, which generally requires PMA approval. However, FDA can reclassify or use *de novo* classification for a device that meets the FDC Act standards for a class II device, permitting the device to be marketed without PMA approval. To grant such a reclassification, FDA must determine that the FDC Act’s general controls alone, or general controls and special controls together, are sufficient to provide a reasonable assurance of the device’s safety and effectiveness. The *de novo* classification route is generally less burdensome than the PMA approval process.

Devices deemed by the FDA to pose the greatest risk, such as life-sustaining, life-supporting, or implantable devices, or those deemed not substantially equivalent to a legally marketed predicate device, are placed in class III. Class III devices typically require PMA approval. To obtain PMA approval, an applicant must demonstrate the reasonable safety and effectiveness of the device based, in part, on data obtained in clinical studies. All clinical studies of investigational medical devices to determine safety and effectiveness must be conducted in accordance with FDA’s investigational device exemption (IDE) regulations, including the requirement for the study sponsor to submit an IDE application to FDA, unless exempt, which must become effective prior to commencing human clinical studies. PMA reviews generally last between one and two years, although they can take longer.

Additionally, modifications that could significantly affect the safety and effectiveness of any FDA cleared or approved products, such as changes to the intended use or technological characteristics of the products, will require new 510(k) clearances or PMAs for those distributed in the U.S., or similar foreign marketing authorizations for those distributed outside of the U.S., or require the manufacturer to recall or cease marketing the modified devices until these clearances or approvals are obtained. In particular, even after approval of a PMA, a new PMA or PMA supplement may be required in the event of a modification to the device, its labeling or its manufacturing process. Supplements to a PMA may require the submission of the same type of information required for an original PMA, except that the supplement is generally limited to that information needed to support the proposed change from the product covered by the original PMA.

If we decide to expand our products in the future to include clinical or diagnostic products that are regulated by FDA as medical devices, we will be required to delay marketing and commercialization while we obtain premarket clearance or approval from the FDA. There would be no assurance that we could ever obtain such clearance or approval. Obtaining the requisite regulatory approvals, including the FDA quality system inspections that are required for PMA approval, can be expensive and time consuming. The regulatory approval process for such

products may be significantly delayed, may be significantly more expensive than anticipated, and may conclude without such products being approved by the FDA. Without timely regulatory clearance or approval, we will not be able to launch or successfully commercialize any diagnostic or clinical medical devices that we may develop in the future.

If regulated as a medical device, after a medical device is placed on the market, numerous regulatory requirements apply, including but not limited to the quality manufacturing requirements set forth in the QSRs, labeling regulations, the FDA's general prohibition against promoting products for unapproved or "off label" uses, registration and listing, the Medical Device Reporting regulation, and the Reports of Corrections and Removals regulation. The FDA can enforce pre- and post-market requirements by unannounced inspection, market surveillance and other means. If the FDA finds a violation, it can institute a wide variety of enforcement actions, ranging from an untitled regulatory letter or a warning letter, to more severe sanctions such as fines, injunctions and civil penalties; recall or seizure of products; operating restrictions, partial suspension or total shutdown of production; refusing requests for 510(k) clearance or PMA approval of new products; withdrawing 510(k) clearance or PMA approvals already granted; and criminal prosecution.

Products Labeled and Marketed for Research Use Only

We label and sell our products for research use only (RUO) and expect to sell them to academic institutions, life sciences and research laboratories that conduct research, and pharmaceutical and biotechnology companies for non-diagnostic and non-clinical purposes. Our RUO products are not intended or promoted for use in clinical practice in the diagnosis of disease or other conditions, and they are labeled for research use only. Accordingly, we believe our products, as we currently intend to market them, are not subject to regulation by FDA. Although FDA regulations require that RUO products be labeled with "For Research Use Only. Not for use in diagnostic procedures," the regulations do not subject such products to the FDA's jurisdiction or the broader pre- and post-market controls for medical devices.

In November 2013, the FDA issued a final guidance on products labeled RUO, which, among other things, reaffirmed that a company may not make any clinical or diagnostic claims about an RUO product, stating that merely including a labeling statement that the product is for research purposes only will not necessarily render the device exempt from the FDA's clearance, approval, or other regulatory requirements if the totality of circumstances surrounding the distribution of the product indicates that the manufacturer knows its product is being used by customers for diagnostic uses or the manufacturer intends such a use. These circumstances may include, among other things, written or verbal marketing claims regarding a product's performance in clinical or diagnostic applications and a manufacturer's provision of technical support for such activities. If FDA were to determine, based on the totality of circumstances, that our products labeled and marketed for RUO are intended for diagnostic purposes, they would be considered medical devices that will require clearance or approval prior to commercialization. Further, sales of devices for diagnostic or clinical purposes may subject us to additional healthcare regulation. We continue to monitor the changing legal and regulatory landscape to ensure our compliance with any applicable rules, laws and regulations.

As discussed above, although our products are currently labeled and sold for research purposes only, the regulatory requirements related to marketing, selling, and supporting such products could be uncertain and depend on the totality of circumstances. This uncertainty exists even if such use by our customers occurs without our consent. If the FDA or other regulatory authorities assert that any of our RUO products are subject to regulatory clearance or approval, our business, financial condition, or results of operations could be adversely affected.

In the future, certain of our products or related applications could become subject to regulation as medical devices by the FDA. For example, if we wish to label and expand product lines to address the diagnosis of disease or for use for a clinical purpose, regulation by governmental authorities in the United States and other countries will become an increasingly significant factor in development, testing, production, labeling, promotion, and marketing. Products that we may develop in the diagnostic, clinical, and healthcare markets, depending on their intended use, may be regulated as medical devices or in vitro diagnostic products (IVDs) by the FDA and comparable agencies in other countries. In the United States, distribution or marketing of medical devices will require us to comply with pre-market and post-market controls imposed by the FDA, unless an exemption applies, and we would be required to obtain either prior 510(k) clearance or prior premarket approval from the FDA before commercializing such medical device.

Laboratory Developed Tests (LDTs)

In some cases, our customers may use our RUO products in their own LDTs or in other FDA-regulated products for clinical diagnostic use, which can also increase our liability. LDTs are developed, validated and used within a single laboratory. In the past, the FDA generally exercised enforcement discretion for LDTs and did not require clearance or approval prior to marketing. On October 3, 2014, FDA issued two draft guidances that proposed to actively regulate LDTs using a risk-based approach, which would have required 510(k)s or PMAs for certain “moderate” or “high” risk devices. However, in late November 2016, FDA announced that it would not finalize the 2014 draft LDT guidance. More recently, the FDA has issued warning letters to genomics labs for illegally marketing certain genetic tests without prior FDA clearance or approval, noting that the FDA has not created a legal “carve-out” for LDTs and retains discretion to take action when appropriate, such as when certain genomic tests raise significant public health concerns. As manufacturers develop more complex genetic tests and diagnostic software, the FDA may increase its regulation of LDTs.

In August 2020, the HHS announced rescission of guidance and other informal issuances of the FDA regarding premarket review of LDT absent notice-and-comment rulemaking, stating that, absent notice-and-comment rulemaking, those seeking approval or clearance of, or an emergency use authorization, for an LDT may nonetheless voluntarily submit a premarket approval application, premarket notification or an Emergency Use Authorization request, respectively, but are not required to do so. The impact of this HHS rescission policy, including whether or how this policy will be implemented under the current administration, as well as other legislative, executive, and agency actions of the current administration remains unclear. The Biden administration has also issued a “regulatory freeze” memorandum that directs department and agency heads to review any new or pending rules of the prior administration. Any restrictions or heightened regulatory requirements on LDTs, IVDs, or RUO products by the FDA, HHS, Congress, or state regulatory authorities may decrease the demand for our products, increase our compliance costs, and negatively impact our business and profitability. We will continue to monitor and assess the impact of changing regulatory landscape on our business.

International Medical Device Regulation

To the extent we decide to seek regulatory marketing authorization for certain of our products in countries outside of the United States, we or our partners, or collaborators, will need to obtain regulatory marketing authorization for such products for the intended use in the jurisdiction where such products will be marketed. Regulatory clearance or approval in one jurisdiction does not mean that we will be successful in obtaining regulatory marketing authorization in other jurisdictions where we conduct business.

Sales of such medical products outside the United States will likely be subject to foreign regulatory requirements, which can vary greatly from country to country, as well as FDA regulation on export of medical devices. The European Commission has adopted numerous directives and standards that address regulation of the design, manufacture, labeling, clinical studies and post-market vigilance for medical devices. Under the centralized authorization procedure, devices that comply with the requirements of a relevant directive will be entitled to bear the CE conformity marking, indicating that the device conforms to the essential requirements of the applicable directives and, accordingly, can be marketed throughout the European Union and European Economic Area member states. The European Medical Device Regulation (MDR), which will replace Europe’s Medical Device Directive (MDD), will be effective on May 26, 2021. Additionally, the In Vitro Diagnostic Regulation (IVDR 2017/746), which addresses several weaknesses of the In Vitro Diagnostic Directive (IVDD 98/79/EC), will apply starting on May 26, 2022. Compliance with these and other regulations outside of the United States will increase our compliance costs and exposure to liability.

Other Government Regulations

In the United States, various federal and state regulators, including governmental agencies like the Consumer Financial Protection Bureau and the Federal Trade Commission, have adopted, or are considering adopting, laws and regulations concerning personal information and data security. Certain state laws may be more stringent or broader in scope, or offer greater individual rights, with respect to personal information than federal, international or other state laws, and such laws may differ from each other, all of which may complicate compliance efforts. For example, the CCPA, which increases privacy rights for California residents and imposes obligations on companies that process their personal information, came into effect on January 1, 2020. Among other things, the CCPA requires covered companies to provide new disclosures to California consumers and provide such consumers new data protection and privacy rights, including the ability to opt-out of certain sales of personal information. The CCPA

provides for civil penalties for violations, as well as a private right of action for certain data breaches that result in the loss of personal information. This private right of action may increase the likelihood of, and risks associated with, data breach litigation. In addition, laws in all 50 U.S. states require businesses to provide notice to consumers whose personal information has been disclosed as a result of a data breach. State laws are changing rapidly and there is discussion in the U.S. Congress of a new comprehensive federal data privacy law to which we would become subject if it is enacted.

Although we take measures to protect sensitive data from unauthorized access, use or disclosure, our information technology and infrastructure may be vulnerable to attacks by hackers or viruses or breached due to employee error, malfeasance or other malicious or inadvertent disruptions. Any such breach or interruption could compromise our networks and the information stored there could be accessed by unauthorized parties, manipulated, publicly disclosed, lost or stolen. Any such access, breach or other loss of information could result in legal claims or proceedings, and liability under federal or state laws that protect the privacy of personal information, such as the Health Insurance Portability and Accountability Act of 1996 (HIPAA), the Health Information Technology for Economic and Clinical Health Act, and regulatory penalties. Notice of breaches must be made to affected individuals, the Secretary of the Department of HHS, and for extensive breaches, notice may need to be made to the media or State Attorneys General. Such a notice could harm our reputation and our ability to compete.

In the future, to the extent we develop any clinical or diagnostic medical devices, our operations in the United States and abroad will be subject to various healthcare laws and enforcement by the applicable government agencies. Such laws include, without limitation, federal and state anti-kickback or anti-referral laws; healthcare fraud and abuse laws; false claims laws; federal and state privacy and security laws, such as HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009 (HITECH), CCPA, and CPRA; Physician Payments Sunshine Act and related state transparency and manufacturer reporting laws; marketing compliance and advertising laws; and other laws and regulations applicable to medical device manufacturers. If we expand our business outside of the United States, we would be subject to additional laws and regulations in countries where we conduct business, including but not limited to the GDPR. These laws may impact our operations directly, or indirectly through our contractors, agents, or customers, and may impact, among other things, our sales and marketing strategy.

If our operations are found to be in violation of any of the federal, state, and foreign laws described above or any other current or future fraud and abuse or other healthcare laws and regulations that apply to us, we may be subject to significant penalties, including significant criminal, civil, and administrative penalties, damages, fines, imprisonment for individuals, exclusion from participation in government programs, such as Medicare and Medicaid, and we could be required to curtail or cease our operations. Any of the foregoing consequences could seriously harm our business and our financial results.

Given the evolving nature of our industry, legislative bodies or regulatory authorities may adopt additional regulation or expand existing regulation to include our products and services. Changes to the current regulatory framework, including the imposition of additional or new regulations, could arise at any time, and we may be unable to obtain or maintain comparable regulatory authorization for our products and services, if required. These regulations and restrictions may materially and adversely affect our business, financial condition, and results of operations.

Facilities

Our principal facility is located at 9535 Waples Street in San Diego, California and functions as our worldwide headquarters. The facility is approximately 28,000 sq. ft. on two stories and was leased from BioMed Realty. The lease expires in January 2025 and has an option to extend for an additional five years at the then current fair market value rental rate for comparable office and laboratory space. The 9535 Waples building contains infrastructure for reagent manufacturing and for research and development of new products, as well as for supporting supply chain, logistics, and office space for administrative and commercial functions. The facility includes wet labs for both reagent manufacturing and research and development on both floors as well as specialized labs for instrument engineering to support the development of new instruments. A designated instrument services lab space supports our current instrument installed base customers.

Employees and Human Capital

As of June 1, 2021, we had 101 full-time employees in the United States and seven full-time employees located internationally. Our team includes: 48 in commercial sales, marketing, and support, 14 in manufacturing and

operations, 13 in research and development, 12 in engineering, and 21 in general and administrative functions. None of our employees is represented by a labor union or covered by a collective bargaining agreement. We consider our relationship with our employees to be good.

Our people and culture objectives include, as applicable, identifying, recruiting, retaining, and integrating our existing and new employees, advisors and consultants into our company and culture. The principal purposes of our cash and equity incentive plans are to attract, retain and reward personnel through the granting of cash-based and stock-based compensation awards, in order to increase stockholder value and the success of our company by incentivizing such individuals to perform to the best of their abilities and achieve our short- and long-term business goals.

We offer other elements of compensation to our employees like health and wellness benefits. Our full-time employees are eligible to participate in our health plans, including medical, dental and vision benefits; flexible spending accounts; short-term and long-term disability insurance; and life and accidental death and disability insurance. We believe that providing a 401(k) savings plan for our employees also promotes financial wellness during retirement.

A great culture attracts great people. We strive to create an environment where our people are always innovating and creating solutions that will change the world. We have a customer first mindset which includes understanding customer needs and delivering value every day. We grow and develop our people, and similarly, we are relentless about growing the impact of synthetic biology. We build trust by conducting our business with honesty, integrity and respect. We also listen and collaborate to promote an inclusive environment.

Legal Proceedings

From time to time, we are involved in claims and legal proceedings or investigations, that arise in the ordinary course of business. Such matters could have an adverse impact on our reputation, business and financial condition and divert the attention of our management from the operation of our business. These matters are subject to many uncertainties and outcomes that are not predictable.

Codexis Trademark Litigation

In May 2020 Codexis, Inc. (Codexis) filed a complaint against us relating to our CODEX DNA name based on its rights in the CODEX and CODEXIS mark in the U.S. District Court, Northern District of California for federal and common law trademark infringement and unfair competition/false designation (the Complaint). Codexis seeks injunctive relief, including that we cease all use of the term CODEX and any other trademark confusingly similar to the marks CODEX and CODEXIS and not apply for registration of or register the CODEX mark or any other mark confusingly similar to the CODEX or CODEXIS marks, transfer to Codexis all domain names and social media accounts/user names that include the term “codex” and pay damages (consisting of Codexis’s actual damages, a disgorgement of our profits and punitive damages as permitted by California common law) as well as attorneys’ fees and costs.

According to the Complaint, Codexis primarily operates in the field of protein engineering and began using the CODEXIS and CODEX marks in or before 2006 and 2007, respectively. Codexis also asserts that it owns U.S. Trademark Registrations 3177355, 3779907, 87706489, 87706494 for the marks CODEXIS, CODEX, CODEXIS & Design, and CODEXIS PROTEIN ENGINEERING EXPERTS & Design for biochemical, chemical and scientific research services and product development and chemicals and biochemicals for research and commercial applications pertaining to chemistry, pharmaceuticals and medicines, among other things.

We do not currently own a U.S. trademark registration or U.S. trademark application for CODEX or Codex DNA but we do not believe there is any material customer confusion as a result of our use of the CODEX DNA name. In April 2020, we began using the name CODEX DNA, a rebrand from our prior name SGI-DNA to empower scientific researchers in academic and commercial setting. We plan to vigorously defend ourselves. This litigation is in the discovery phase and no dispositive motions have been filed. If we cannot resolve this matter with Codexis, then a jury trial is set for March 2022.

Eurofins Pharma Non-Competition/Non-Solicitation Litigation

In October 2018, Eurofins Pharma US Holdings II, Inc. (EPUSH II) and Eurofins DiscoverX Corporation (Eurofins DiscoverX) (collectively, Plaintiffs) filed a complaint against Todd R. Nelson, SGI-DNA, Inc. (SGI-DNA, which is our

prior name) and Synthetic Genomics, Inc. (our former parent company, and together with Dr. Nelson and SGI-DNA, the Defendants) to enforce non-competition and non-solicitation provisions of an agreement.

In September 2017, EPUSH II acquired DiscoveRx (now Eurofins DiscoverX), with Dr. Nelson as the acting Chief Executive Officer. As a condition of the closing, in July 2017, Dr. Nelson signed a Confirmation of Sales of Shares of Stock and Goodwill by Merger with Covenant Not to Compete Agreement (the Non-Compete Agreement). The Non-Compete Agreement established that Dr. Nelson would transfer stock and goodwill. In addition, the Non-Compete Agreement stipulated that for a period of three years, Dr. Nelson agreed not to hire, influence or solicit any employee of DiscoveRx or its affiliates. He also agreed to disclose the Non-Compete Agreement and its restrictions to any future employer and to notify EPUSH II of any employment with another entity during the three-year period. According to the complaint, in July 2018, Dr. Nelson became the Chief Executive Officer of SGI-DNA but failed to provide notice of the employment to EPUSH II. Subsequently, Dr. Nelson allegedly also solicited and hired two Eurofins DiscoverX employees. In August 2018, Plaintiffs sent a letter to Dr. Nelson and SGI-DNA claiming that Dr. Nelson breached the Non-Compete Agreement and seeking concessions from Defendants. Defendants have denied liability, challenged the enforceability of the Non-Compete Agreement and rejected Plaintiffs' demands.

The complaint, filed in the Superior Court of California, County of San Diego, charges Dr. Nelson with breach of contract, SGI-DNA with tortious interference, and both with unfair competition. The complaint seeks permanent injunctive relief, monetary damages and other equitable relief (including restitution) against the Defendants. The civil jury trial, initially scheduled for April 24, 2020, has been rescheduled to August 27, 2021.

On April 9, 2021, the Defendants filed a motion for summary judgment, or in the alternative, summary adjudication, with regard to all causes of action. A hearing on this motion has been scheduled for June 25, 2021.

MANAGEMENT

Executive Officers, Key Employees and Directors

The following table sets forth the names, positions and ages of our executive officers, key employees and directors as of March 31, 2021:

Name	Age	Position
Executive Officers:		
Todd R. Nelson	54	President, Chief Executive Officer & Director
Timothy E. Cloutier	47	Senior Vice President, Commercial Operations
Daniel G. Gibson	44	Chief Technology Officer
Jennifer I. McNealey	47	Chief Financial Officer
Key Employees:		
Thomas H. Braden	65	Vice President, Global Operations
Justin O. Emory	42	Vice President, Information Technology
Laura B. Puga	41	Vice President, People and Culture
Madoo Varma	64	Vice President, Corporate Development
Laurence Warden	57	Vice President, Engineering and Instrumentation
Non-Employee Directors:		
Sharon Kedar[4]	46	Director
Andrea L. Jackson[2][3][4]	42	Director
Jami D. Nachtsheim[2][3][5]	62	Director
William F. Snider[1][2]	51	Director
Christine A. Tsingos[1][6]	62	Director
Franklin R. Witney[1][2]	67	Chair of the Board of Directors

(1) Member of the audit committee
(2) Member of the compensation committee
(3) Member of the corporate governance and nominating committee
(4) Ms. Jackson replaced Ms. Kedar on the board of directors in May 2021
(5) Ms. Nachtsheim joined the board of directors in June 2021
(6) Ms. Tsingos joined the board of directors in May 2021

Executive Officers

Todd R. Nelson. Dr. Nelson has served as our President and Chief Executive Officer and a member of our board of directors since July 2018. Prior to joining our company, Dr. Nelson served as the Chief Executive Officer of several life science companies through expansive phases of financial and commercial growth. From December 2014 until its acquisition by Beacon Discovery, Inc. in September 2017, Dr. Nelson served as Chief Executive Officer of DiscoverX Corporation, a leading developer and manufacturer of reagents intended for drug discovery. From September 2011 to October 2014, Dr. Nelson served as Chief Executive Officer of MP Biomedicals, LLC a global manufacturer and distributor of products and services for the life science, fine chemicals, diagnostics and dosimetry markets. From June 2007 to January 2011, Dr. Nelson served as Chief Executive Officer of eBioscience, Inc., a manufacturer and distributor of immunology reagents used in pharmaceutical research. Dr. Nelson also previously served as Vice President of Global Corporate Development and Strategy at Life Technologies Corporation (now Thermo Fisher Scientific Inc.), as First Vice President Global Securities and Economics at Merrill Lynch & Co., and as Global Head of Life Sciences at RBC Capital Markets LLC. Dr. Nelson currently serves on the board of directors of Tonbo Biosciences Corporation and TCRx Corporation. Dr. Nelson received a B.A. in Psychology, a Ph.D. from the University of Minnesota and an M.B.A. in Finance from the Carlson School of Management at the University of

Minnesota. Dr. Nelson also completed clinical fellowship training at Mayo Graduate School of Medicine in clinical chemistry from 1996 to 1998.

We believe that Dr. Nelson is qualified to serve on our board of directors due to his leadership track record, broad experience in the life sciences industry, and his service as our chief executive officer and president.

Timothy E. Cloutier. Dr. Cloutier has served as our Senior Vice President of Commercial Operations since September 2020. From April 2019 to August 2020, Dr. Cloutier served as Vice President of Marketing and Portfolio Strategy at BioLegend, Inc., global developer and manufacturer of antibodies and reagents used in biomedical research. While at BioLegend, Dr. Cloutier led the development and execution of strategic business, marketing, and commercial plans. From May 2016 to April 2019, Dr. Cloutier served as Director of Strategic Marketing and Portfolio Management at Progenity, Inc. a biotechnology company that provides molecular and diagnostic prenatal tests. From January 2013 to May 2016, Dr. Cloutier served as Director of Commercialization Operations at Illumina, Inc., a developer and manufacturer of integrated systems for the analysis of genetic variation and biological function. Dr. Cloutier received a B.S. in Zoology from Michigan State University and a Ph.D. in Biochemistry from the Albert Einstein College of Medicine.

Daniel G. Gibson. Dr. Gibson has served as our Chief Technology Officer since August 2018. From February 2011 to August 2018, Dr. Gibson served in various roles at Synthetic Genomics, Inc., our former parent company and a biotechnology company focused on synthetic biology, including Principal Scientist and Vice President of DNA Technology. Dr. Gibson was responsible for developing new synthetic biology technology for application in a broad range of industries. Since 2004, Dr. Gibson has also served as a professor in the synthetic biology group at the J. Craig Venter Institute, a non-profit genomics research institute. Dr. Gibson earned a B.S. in Biological Sciences from the State University of New York at Buffalo and a Ph.D. in Molecular Biology from the University of Southern California.

Jennifer I. McNealey. Ms. McNealey has served as our Chief Financial Officer since March 2021. From February 2015 to March 2021, she served as Vice President of Investor Relations and Strategy at Calithera Biosciences, Inc., a clinical-stage biopharmaceutical company. Prior to that, Ms. McNealey served as an advisor to other biotechnology companies, and founded Laurient, LLC, an independent research company focused on the biotechnology and pharmaceutical industries. Ms. McNealey has also served as a portfolio manager and biotechnology analyst at Franklin Templeton Investments, Amerindo Investment Advisors and Morgan Stanley Dean Witter Advisors. Ms. McNealey currently serves as a member of the board of directors of Antibe Therapeutics, Inc. and Enzon Pharmaceuticals, Inc. Ms. McNealey received a B.A. and an M.H.A. from Cornell University.

Each of our executive officers serves at the discretion of our board of directors and holds office until his successor is duly elected and qualified or until his earlier resignation or removal.

Key Employees

Thomas H. Braden**.** Mr. Braden has served as our Vice President of Global Operations since July 2018. From March 2016 to July 2018, Mr. Braden served as a Biotech Consultant at Braden Consulting, LLC, a consulting services company. From March 2009 to March 2016, Mr. Braden served as Vice President of Global Operations at eBioscience, Inc., a manufacturer and distributor of reagents and key substances used in pharmaceutical research. Mr. Braden has previously served as Vice President of Operations of several life sciences companies including Pharmingen Inc. and Invitrogen Corporation and as an independent Biotechnology Consultant for DiscoverX Corporation, Tonbo Biosciences Corporation, and Tearfilm Incorporated. Mr. Braden earned a B.S. in Biology/Chemistry from Eastern Kentucky University.

Justin O. Emory. Mr. Emory has served as our Vice President of Information Technology since January 2021. From August 2015 to January 2021, Mr. Emory held various information technology leadership roles at Illumina, Inc., a developer and manufacturer of integrated systems for the analysis of genetic variation and biological function. While at Illumina, Mr. Emory was responsible for leading the commercial digital transformation across marketing, sales and service. Mr. Emory earned a B.S. in Business Administration in Management Information Systems and Production Operations Management from California State University, Chico.

Laura B. Puga**.** Ms. Puga has served as our Vice President of People and Culture since October 2019. From May 2017 to July 2019, Ms. Puga held various roles in human resources at DexCom, Inc., a company that develops,

manufactures, and distributes continuous glucose monitoring systems for diabetes management. From March 2015 to May 2017, Ms. Puga served as Associate Director of Human Resources, Global Operations and Quality at Illumina, Inc., a developer and manufacturer of integrated systems for the analysis of genetic variation and biological function. Ms. Puga earned a B.S. in Industrial and Labor Relations from Cornell University and an M.B.A in Managerial and Organizational Behavior from the University of Chicago Booth School of Business.

Madoo Varma. Dr. Varma has served as our Vice President of Corporate Development since January 2021. From January 2019 to December 2020, Dr. Varma served as Head of External Innovation and Business Development at Danaher Corporation, Molecular Devices, a global life science and technology innovator, which Dr. Varma joined via Danaher's acquisition of Labcyte, Inc. From January 2018 to January 2019, Dr. Varma served in various roles, including as a consultant and as Vice President of Business Development at Labcyte, Inc., a global biotechnology tools company. From April 2017 to December 2017, Dr. Varma served as an advisor to various life science start-ups and for a not-for-profit funding agency. From January 2016 to April 2017, Dr. Varma served as Managing Director, Licensing & Ventures at SRI International, a non-profit scientific research institute, where Dr. Varma was responsible for monetizing SRI International's small molecule and biologic assets to bio pharma companies. From January 2006 to January 2016, Dr. Varma served as General Manager, DNA sequencing incubation effort at Intel Corporation, a semiconductor technology company. Dr. Varma has over 25 years' experience serving in senior leadership roles in business and R&D management functions, including positions held at Applied Biosystems, Inc., Intel Corporation, Agilent Technologies, Inc., Genelabs Technologies, Inc. and Adeza Biomedical Corporation. In addition, Dr. Varma has had the unique experience of straddling both traditional biotech, diagnostics, and life sciences tool companies, as well as high tech focused on bioelectronics/digital health. Dr. Varma earned a B.S. from Delhi University and a Ph.D. in Genetics from Punjab Agricultural University in India. Dr. Varma earned her post-doctorate from Cambridge University on a Common-Wealth Scholarship.

Laurence Warden. Mr. Warden has served as our Vice President of Engineering and Instrumentation since March 2019. From June 2013 to March 2019, Mr. Warden served as Vice President of Engineering and Instrumentation at Synthetic Genomics, Inc., our former parent company and a biotechnology company focused on synthetic biology. Mr. Warden earned a B.A. in Industrial Arts from San Diego State University.

Non-Employee Directors

Andrea L. Jackson. Ms. Jackson has served as a member of our board of directors since May 2021. Ms. Jackson is a Director at Northpond Ventures, a science, medical and technology focused venture capital firm founded in 2018. Prior to joining Northpond in March 2020, Ms. Jackson served as the commercial lead at Farcast Biosciences, an oncology clinical diagnostic company. Prior to Farcast Ms. Jackson held various senior commercial leadership roles in life science startups and large companies such as PerkinElmer, Inc. and Millipore. Before her operating roles, Ms. Jackson worked on JPMorgan's Healthcare Investment Banking team and focused on life science tools, diagnostics, and biotechnology companies. Ms. Jackson is a board director of other emerging growth companies, including Current Health, NanoView Biosciences, Octave Bioscience, Outcomes4Me, Scitara Corporation, Syapse, Inc., VieCure and Vizgen. Ms. Jackson received an M.B.A. from Kellogg School of Management at Northwestern University and a B.A., with honors, from Washington University in St. Louis.

We believe that Ms. Jackson is qualified to serve on our board of directors because of her operational expertise and her experience as an investor in emerging growth companies.

Jami D. Nachtsheim. Ms. Nachtsheim has served as a member of our board of directors since June 2021. From June 1980 until her retirement in June 2000, Ms. Nachtsheim served in a variety of positions at Intel Corporation, a semiconductor company, most recently as Corporate Vice President of the Sales and Marketing Group and Director of Worldwide Marketing. Since April 2016, Ms. Nachtsheim has served on the board of directors of Intuitive Surgical, Inc., a developer, manufacturer and marketer of robotic products designed to improve clinical outcomes of patients through minimally invasive surgery. Since March 2019, Ms. Nachtsheim has served on the board of directors of Cerus Corporation, a biomedical products company. Ms. Nachtsheim has previously served as a member of the board of directors of several privately held companies, including FEI Company, Affymetrix, Inc., Southwall Technologies Inc., ACT Conferencing, Inc. and Vixel Corporation. Ms. Nachtsheim received a B.S. in Business Management from Arizona State University.

We believe that Ms. Nachtsheim is qualified to serve on our board of directors because of her extensive experience in the life science industry and her service as a director of various public and private companies.

William F. Snider. Mr. Snider has served as a member of our board of directors since September 2019. Since 2006, Mr. Snider has served as Partner at BroadOak Capital Partners, LLC, a merchant bank with a focus on the life sciences industry. Prior to joining BroadOak, Mr. Snider was a general partner and co-founder of Emerging Technology Partners, LLC, a life sciences focused venture capital firm. Prior to Emerging Technology Partners, he was a vice president and portfolio manager at T. Rowe Price Group, Inc., a global investment management firm, where his responsibilities included managing mutual funds and institutional client portfolios. Mr. Snider also serves on the board of directors of Halo Labs, Inc., Science and Medicine Group, IXRF Systems, Inc., Cellaria Bio, Tonbo Biotechnologies, Inc., Empire Genomics and MdBio Foundation. Mr. Snider is a CFA charterholder and earned a B.S.E. in Finance and an M.B.A from the Wharton School at the University of Pennsylvania.

We believe Mr. Snider is qualified to serve on our board of directors because of his extensive experience as an investor in the life sciences industry and his service on a number of boards of biotechnology companies.

Christine A. Tsingos*. Ms. Tsingos* has served as a member of our board of directors since May 2021. From 2002 until her retirement in April 2019, Ms. Tsingos served as the Executive Vice President and Chief Financial Officer of Bio-Rad Laboratories, Inc. Prior to 2002, Ms. Tsingos held executive positions at Autodesk, Inc., The Cooper Companies, Inc. and Attest Systems, Inc. Ms. Tsingos also serves on the board of directors of Envista Holdings, Inc., Onto Innovation Inc. (formerly Nanometrics Incorporated) and Varex Imaging Corporation. Ms. Tsingos earned her B.A. in International Studies from the American University in Washington D.C. and an M.B.A in International Business from the George Washington University.

We believe Ms. Tsingos is qualified to serve on our board of directors because of her over 25 years of financial and operational experience and experience serving on other boards of directors.

Franklin R. Witney. Dr. Witney has served as a member of our board of directors since December 2020. Since September 2016, Dr. Witney has served as an Operating Partner at Ampersand Capital Partners, a private equity firm. From July 2011 to March 2016, Dr. Witney served as President and Chief Executive Officer of Affymetrix, Inc., a provider of life science products and molecular diagnostic products, until Affymetrix, Inc. was acquired by Thermo Fisher Scientific Inc. From April 2009 to May 2011, Dr. Witney served as President and Chief Executive Officer of Dionex Corporation, a provider of analytical instrumentation and related accessories and chemicals. From December 2008 to April 2009, Dr. Witney served as Affymetrix's Executive Vice President and Chief Commercial Officer. From July 2002 to December 2008, Dr. Witney served as President and Chief Executive Officer of Panomics Inc. Dr. Witney currently serves on the board of directors of PerkinElmer Inc. and Cerus Corporation and the private companies Nexcelom Biosciences LLC, and Emulate, Inc. He has previously served on the boards of Gyros Protein Technologies, RareCyte Inc., GeneOptx and Canopy Bioscience. Dr. Witney earned a B.S. in microbiology from the University of Illinois and a M.S, in microbiology and Ph.D in molecular and cellular biology from Indiana University.

We believe Dr. Witney is qualified to serve on our board of directors because of his substantial experience in in the life science industry, which he acquired in various roles as officer and director of public and private companies.

Family Relationships

There are no family relationships among any of our directors or executive officers.

Board Composition

Our board of directors consists of six members. After the completion of this offering, the number of directors will be fixed from time to time by our board of directors, subject to the terms of our amended and restated certificate of incorporation and amended and restated bylaws. Each of our current directors will continue to serve as a director until the election and qualification of his or her successor, or until his or her earlier death, resignation or removal.

Our amended and restated certificate of incorporation will provide that our board of directors will be divided into three classes with staggered three-year terms. Only one class of directors will be elected at each annual meeting of stockholders, with the other classes continuing for the remainder of their respective three-year terms. Our current directors will be divided among the three classes as follows:

- the Class I directors will be Todd R. Nelson and William F. Snider, and their terms will expire at the annual meeting of stockholders to be held in 2022;

- the Class II directors will be Andrea L. Jackson and Franklin R. Witney, and their terms will expire at the annual meeting of stockholders to be held in 2023; and
- the Class III directors will be Christine A. Tsingos and Jami D. Nachtsheim, and their terms will expire at the annual meeting of stockholders to be held in 2024.

At each annual meeting of stockholders, upon the expiration of the term of a class of directors, the successor to each such director in the class will be elected to serve from the time of election and qualification until the third annual meeting following his or her election and until his or her successor is duly elected and qualified, in accordance with our amended and restated certificate of incorporation. Any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one third of our directors.

This classification of our board of directors may have the effect of delaying or preventing changes in control of our company.

Director Independence

Upon the completion of this offering, our common stock will be listed on the Nasdaq Global Select Market. Under the rules of Nasdaq, independent directors must comprise a majority of a listed company's board of directors within one year of the completion of this offering. In addition, the rules of Nasdaq require that, subject to specified exceptions, each member of a listed company's audit, compensation and corporate governance and nominating committees be independent. Audit committee members and compensation committee members must also satisfy the independence criteria set forth in Rule 10A-3 and Rule 10C-1, respectively, under the Exchange Act. Under the rules of Nasdaq, a director will only qualify as an "independent director" if, in the opinion of that company's board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director.

To be considered to be independent for purposes of Rule 10A-3 and under the rules of Nasdaq, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors or any other board committee: (1) accept, directly or indirectly, any consulting, advisory or other compensatory fee from the listed company or any of its subsidiaries or (2) be an affiliated person of the listed company or any of its subsidiaries.

To be considered independent for purposes of Rule 10C-1 and under the rules of Nasdaq, the board of directors must affirmatively determine that each member of the compensation committee is independent, including a consideration of all factors specifically relevant to determining whether the director has a relationship to the company which is material to that director's ability to be independent from management in connection with the duties of a compensation committee member, including: (i) the source of compensation of such director, including any consulting, advisory or other compensatory fee paid by the company to such director and (ii) whether such director is affiliated with the company, a subsidiary of the company or an affiliate of a subsidiary of the company.

Our board of directors undertook a review of its composition, the composition of its committees and the independence of our directors and considered whether any director has a material relationship with us that could compromise his or her ability to exercise independent judgment in carrying out his or her responsibilities. Based upon information requested from and provided by each director concerning his or her background, employment and affiliations, including family relationships, our board of directors has determined that Andrea Jackson, Jami D. Nachtsheim, William F. Snider, Christina A Tsingos and Franklin R. Witney, representing five of our six directors, do not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each of these directors is "independent" as that term is defined under the rules of Nasdaq.

In making these determinations, our board of directors considered the current and prior relationships that each non-employee director has with our company and all other facts and circumstances our board of directors deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each non-employee director, and the transactions involving them described in the section titled "Certain Relationships and Related Party Transactions."

Board Leadership Structure

Our board of directors is currently chaired by Franklin R. Witney. As a general policy, our board of directors believes that separation of the positions of Chair of our board of directors and Chief Executive Officer reinforces the independence of our board of directors from management, creates an environment that encourages objective oversight of management's performance and enhances the effectiveness of our board of directors as a whole. As such, Todd R. Nelson serves as our Chief Executive Officer while Mr. Witney serves as the Chair of our board of directors but is not an officer.

Role of the Board in Risk Oversight

Our board of directors has an active role, as a whole and also at the committee level, in overseeing the management of our risks. Our board of directors is responsible for general oversight of risks and regular review of information regarding our risks, including credit risks, liquidity risks and operational risks. The compensation committee is responsible for overseeing the management of risks relating to our executive compensation plans and arrangements. The audit committee is responsible for overseeing the management of risks relating to accounting matters and financial reporting. The corporate governance and nominating committee is responsible for overseeing the management of risks associated with the independence of our board of directors and potential conflicts of interest. Although each committee is responsible for evaluating certain risks and overseeing the management of such risks, our entire board of directors is regularly informed through discussions from committee members about such risks.

Board Committees

Our board of directors has an audit committee, a compensation committee and a nominating and corporate governance committee, each of which has the composition and the responsibilities described below.

Audit Committee

The members of our audit committee are Christine A. Tsingos, Franklin R. Witney and William F. Snider. Ms. Tsingos is the chair of our audit committee and is an audit committee financial expert, as that term is defined under the SEC rules implementing Section 407 of the Sarbanes-Oxley Act, and possesses financial sophistication, as defined under the rules of Nasdaq. Our audit committee oversees our corporate accounting and financial reporting process and assists our board of directors in monitoring our financial systems. Our audit committee also:

- selects, retains, compensates, evaluates, oversees, and where appropriate, terminates the independent registered public accounting firm to audit our consolidated financial statements;
- helps to ensure the independence and performance of the independent registered public accounting firm;
- approves audit and non-audit services and fees;
- reviews consolidated financial statements and discusses with management and the independent registered public accounting firm our annual audited and quarterly consolidated financial statements, the results of the independent audit and the quarterly reviews and the reports and certifications regarding internal controls over financial reporting and disclosure controls;
- prepares the audit committee report that the SEC requires to be included in our annual proxy statement;
- reviews reports and communications from the independent registered public accounting firm;
- reviews the adequacy and effectiveness of our internal controls and disclosure controls and procedure;
- reviews our policies on risk assessment and risk management;
- reviews the overall adequacy and effectiveness of our legal, regulatory, and ethical compliance programs and reports regarding compliance with applicable laws, regulations, and internal compliance programs;
- reviews related party transactions; and
- establishes and oversees procedures for the receipt, retention and treatment of accounting related complaints and the confidential submission by our employees of concerns regarding questionable accounting or auditing matters.

Our audit committee operates under a written charter, which satisfies the applicable rules of the SEC and the listing standards of Nasdaq.

Compensation Committee

The members of our compensation committee are Franklin R. Witney, Andrea L. Jackson and William F. Snider. Mr. Witney is the chair of our compensation committee. Our compensation committee oversees our compensation policies, plans and benefits programs. The compensation committee also:

- oversees our overall compensation philosophy and compensation policies, plans and benefit programs;
- reviews and recommends for approval to the board of directors compensation for our executive officers and directors;
- prepares the compensation committee report that the SEC will require to be included in our annual proxy statement; and
- administers our equity compensation plans.

Our compensation committee operates under a written charter, which satisfies the applicable rules of the SEC and the listing standards of Nasdaq.

Nominating and Corporate Governance Committee

The members of our nominating and corporate governance committee are Jami D. Nachtsheim and Andrea L. Jackson. Ms. Nachtsheim is the chair of our nominating and corporate governance committee. Our nominating and corporate governance committee oversees and assists our board of directors in reviewing and recommending nominees for election as directors. Specifically, the nominating and corporate governance committee:

- identifies, evaluates and makes recommendations to our board of directors regarding nominees for election to our board of directors and its committees;
- considers and makes recommendations to our board of directors regarding the composition of our board of directors and its committees;
- reviews developments in corporate governance practices;
- evaluates the adequacy of our corporate governance practices and reporting;
- evaluates the performance of our board of directors and of individual directors; and
- reviews and monitors conflicts of interest situations, and approves or prohibits any involvement in matters that may involve a conflict of interest or taking of a corporate opportunity.

Our nominating and corporate governance committee operates under a written charter, which satisfies the applicable rules of the SEC and the listing standards of Nasdaq.

Director Compensation

Prior to this offering, we have not implemented a formal policy with respect to compensation payable to our non-employee directors. From time to time, we have granted cash retainers and equity awards to attract them to join our board of directors and for their continued service on our board of directors. We reimburse our directors for expenses associated with attending meetings of our board of directors and its committees.

In connection with this offering, we have adopted and our stockholders approved the terms of our non-employee director compensation policy.

Name	Fees Earned or Paid in Cash($)	Option Awards ($)	All Other Compensation ($)	Total ($)
Sharon Kedar	—	—	—	—
William F. Snider	—	—	—	—
Franklin R. Witney	3,383[(1)]	—	—	3,383

(1) Consists of a prorated portion of a $70,000 annual retainer that was offered to Mr. Witney beginning in December 2020.

Dr. Nelson was our only employee who served as a director during 2020. See the section titled “Executive Compensation” for information about Dr. Nelson’s compensation, which includes compensation Dr. Nelson received for serving as our Chief Executive Officer during 2020.

Non-Employee Director Compensation Policy

Prior to preparing for this offering, we did not have a formal policy with respect to compensation payable to our non-employee directors for their service as directors. In connection with this offering, our board of directors has adopted and our stockholders approved a new compensation policy for our non-employee directors that became effective as of the date of the effectiveness of the registration statement of which this prospectus forms a part. It is designed to attract, retain, and reward non-employee directors.

Under this compensation policy, each non-employee director will receive the cash and equity compensation for board services described below. We also will continue to reimburse our non-employee directors for reasonable, customary and documented travel expenses to board of directors meetings.

The compensation policy includes a maximum annual limit of $750,000 of cash compensation and equity awards that may be paid, issued, or granted to a non-employee director in any fiscal year, increased to $1,000,000 in an individual’s first year of service as a non-employee director. For purposes of this limitation, the value of equity awards is based on the grant date fair value (determined in accordance with GAAP). Any cash compensation paid, or equity awards granted to a person for their services as an employee, or for their services as a consultant (other than as a non-employee director) or prior to the effective date of the compensation policy, will not count for purposes of the limitation. The maximum limit does not reflect the intended size of any potential compensation or equity awards to our non-employee directors.

Cash Compensation.

Following the completion of this offering, non-employee directors will be entitled to receive the following cash compensation for their services under the outside director compensation policy:

- $40,000 per year for service as a board member;
- $35,000 per year for service as non-executive chair of the board;
- $20,000 per year for service as chair of the audit committee;
- $10,000 per year for service as member of the audit committee;
- $15,000 per year for service as chair of the compensation committee;
- $7,500 per year for service as a compensation committee member;
- $10,000 per year for service as chair of the nominating and corporate governance committee; and
- $5,000 per year for service as a member of the nominating and corporate governance committee.

Each non-employee director who serves as the chair of a committee will receive only the additional annual cash fee as the chair of the committee, and not the annual fee as a member of the committee, provided that any non-employee director who serves as the non-executive chair will receive the annual fee for service as a board member and an additional annual fee as the non-executive chair. All cash payments to non-employee directors are paid quarterly in arrears on a pro-rated basis.

Equity Compensation.

Initial Award: Each person who first becomes a non-employee director following the effective date of the policy will receive, on the first trading date on or after the date on which the person first becomes a non-employee director, an initial award of options to purchase 100,000 shares of our common stock (the Initial Award). The Initial Award will vest as to one-thirty-sixth of the shares subject to the Initial Award each month following the grant date, subject to the non-employee director’s continued service through the applicable vesting date. If the person was a member of our board of directors and also an employee, becoming a non-employee director due to termination of employment will not entitle them to an Initial Award.

Annual Award: Each non-employee director automatically will receive, on the date of each annual meeting of our stockholders following the effective date of the policy, an annual award of options to purchase 50,000 shares of our common stock (the Annual Award; provided, however, that a non-employee director who has not been a director for at least six months prior to the date of the applicable annual meeting of our stockholders will not receive an Annual

Award. Each Annual Award will vest in its entirety on the earlier of (x) the one year anniversary of the Annual Award's grant date, or (y) the day immediately prior to the date of the next annual meeting of our stockholders that follows the grant date of the Annual Award, subject to the non-employee director's continued service through the applicable vesting date.

In the event of a "change in control" (as defined in our 2021 SIP), each non-employee director will fully vest in their outstanding company equity awards issued under the director compensation policy, including any Initial Award or Annual Award, immediately prior to the consummation of the change in control provided that the non-employee director continues to be a non-employee director through such date. The term of each option granted under this compensation policy is ten years, subject to earlier termination as provided in the 2021 SIP.

Compensation Committee Interlocks and Inside Participation

None of the members of our board of directors who serve on our compensation committee is or has been an officer or employee of our company. None of our executive officers currently serves, or in the past fiscal year has served, as a member of the board of directors or compensation committee (or other board committee performing equivalent functions or, in the absence of any such committee, the entire board of directors) of any entity that has one or more executive officers serving on our board of directors or compensation committee.

Code of Business Conduct and Ethics

We have adopted a written code of business conduct and ethics that will apply to our directors, officers and employees, including our principal executive officer, principal financial officer, principal accounting officer or controller or persons performing similar functions. The code of business conduct and ethics is available on our website at www.codexdna.com. We intend to disclose future amendments to such code, or any waivers of its requirements, applicable to any principal executive officer, principal financial officer, principal accounting officer or controller or persons performing similar functions or our directors on our website identified above or in a Current Report on Form 8-K. Information contained on the website is not incorporated by reference into this prospectus and should not be considered to be part of this prospectus. The inclusion of our website address in this prospectus is for reference only, and our website is not incorporated by reference into this prospectus.

EXECUTIVE COMPENSATION

Our named executive officers for 2020, which consist of each person who served as our principal executive officer during 2020 and our next two most highly compensated executive officers during 2020, are:

- Todd R. Nelson, our President and Chief Executive Officer;
- Daniel G. Gibson, our Chief Technology Officer; and
- Timothy E. Cloutier, our Senior Vice President Commercial Operations.

Summary Compensation Table

The following table sets forth information regarding the compensation of our named executive officers for the year ended December 31, 2020.

Name and Principal Position	Year	Salary ($)	Bonus ($)[1]	Option Awards ($)[2]	All Other Compensation ($)[3]	Total ($)
Todd R. Nelson *President and Chief Executive Officer*	2020	583,846	150,000	-	1,932	783,779
Daniel G. Gibson *Chief Technology Officer*	2020	324,923	40,000	-	732	375,655
Timothy E. Cloutier[4][5] *Senior Vice President Commercial Operations*	2020	79,615	-	8,209	267	88,091

(1) Due to the effects of COVID-19 pandemic, the Company did not meet its management incentive compensation plan targets and consequently no bonuses were payable under such plan. However, the board of directors exercised its discretionary authority to award bonuses to management, based on services performed in 2020, including awards of $150,000 to Todd R. Nelson and $40,000 to Dan G. Gibson. Timothy E. Cloutier was not eligible for a discretionary bonus based on his hire date

(2) The amounts reported represent the aggregate grant-date fair value of the stock options awarded to the named executive officer in 2020, calculated using the Black-Scholes option-pricing model.

(3) The amounts reported reflect insurance premiums paid by, or on behalf of, the Company during 2020 with respect to life insurance for the benefit of such named executive officer.

(4) Dr. Cloutier joined Codex DNA as Senior Vice President of Commercial Operations in September 2020, and therefore the compensation set forth in the table above reflects the amount earned for the portion of 2020 in which he was employed by Codex DNA.

(5) Dr. Cloutier began his employment with Codex DNA in September 2020 and was not eligible for a bonus in 2020.

Outstanding Equity Awards at Fiscal Year-End

The following table sets forth information concerning outstanding equity awards held by each of our named executive officers as of December 31, 2020:

	Option Awards				
Name	Grant Date[1]	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Option Exercise Price ($)[2]	Option Expiration Date
Daniel G. Gibson	3/8/19	34,569	44,446[3]	$0.39	3/8/29
	10/24/19	36,458	46,875[3]	$0.72	10/24/29
Timothy E. Cloutier	10/22/20	-	30,000[4]	$0.72	10/22/30

(1) Each of the equity awards was granted pursuant to our 2019 Plan.
(2) This column represents the fair market value of a share of our common stock on the date of grant, as determined by our board of directors.
(3) Twenty five percent of the shares subject to the award vested on March 8, 2020, and one-forty-eighth of the shares subject to the award shall vest each month thereafter on the same day of the month.
(4) Twenty five percent of the shares subject to the award vest on the one year anniversary of September 15, 2020, and one-forty-eighth of the shares subject to the award shall vest each month thereafter on the same day of the month.

Employment Arrangements With Our Named Executive Officers

Todd R. Nelson

We have entered into a confirmatory employment agreement with Dr. Nelson, our President and Chief Executive Officer. The confirmatory employment agreement has no specific term and provides for at-will employment. Dr. Nelson's current annual base salary is $618,000, and Dr. Nelson's annual target bonus is 50% of his annual base salary.

Daniel G. Gibson

We have entered into a confirmatory employment agreement with Dr. Gibson, our Chief Technology Officer. The confirmatory employment agreement has no specific term and provides for at-will employment. Dr. Gibson's current annual base salary is $339,000, and Dr. Gibson's annual target bonus is 35% of his annual base salary.

Timothy E. Cloutier

We have entered into a confirmatory employment agreement with Dr. Cloutier, our Senior Vice President, Commercial Operations. The confirmatory employment agreement has no specific term and provides for at-will employment. Dr. Cloutier's current annual base salary is $300,000, and Dr. Cloutier's annual target bonus is 30% of his annual base salary.

Potential Payments Upon Termination or Change in Control

We intend to enter into a change in control severance agreement with each of our named executive officers that provides for the severance and change in control benefits only in the circumstances as described below. Each change in control severance agreement will supersede any prior agreement or arrangement the named executive officer may have had with us that provides for severance and/or change in control payments or benefits.

Each change in control severance agreement will terminate on the date that all of the obligations of the parties to the change in control severance agreement have been satisfied.

If a named executive officer's employment is terminated outside the period beginning three months before a change in control and ending 12 months following a change in control (the change in control period), either (i) by us (or any of our subsidiaries) without "cause" (and other than by reason of death or disability) or (ii) by the named executive officer for "good reason" (as such terms are defined in the named executive officer's change in control severance

agreement), the named executive officer will receive the following benefits if he timely signs and does not revoke a release of claims in our favor:

- a lump-sum payment equal to 12 months (in the case of Dr. Nelson), nine months (in the case of Dr. Gibson) or six months (in the case of Dr. Cloutier) of the named executive officer's annual base salary as in effect immediately prior to such termination (or if such termination is due to a resignation for good reason based on a material reduction in base salary, then as in effect immediately prior to the reduction); and
- payment of premiums for coverage under the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended (COBRA), for the named executive officer and the named executive officer's eligible dependents, if any, for up to 12 months (in the case of Dr. Nelson), nine months (in the case of Dr. Gibson) or six months (in the case of Dr. Cloutier), or taxable monthly payments for the equivalent period in the event payment of the COBRA premiums would violate, or be subject to an excise tax under, applicable law.

If, within the change in control period, the named executive officer's employment is terminated either (i) by us (or any of our subsidiaries) without cause (and other than by reason of death or disability) or (ii) by the named executive officer for good reason, the named executive officer will receive the following benefits if the named executive officer timely signs and does not revoke a release of claims in our favor:

- a lump-sum payment, less applicable withholdings, equal to the sum of (x) 18 months (in the case of Dr. Nelson), 12 months (in the case of Dr. Gibson) or nine months (in the case of Dr. Cloutier) of the named executive officer's annual base salary as in effect immediately prior to such termination (or if such termination is due to a resignation for good reason based on a material reduction in base salary, then as in effect immediately prior to the reduction or if greater, at the level in effect immediately prior to the change in control) and (y) in the case of Dr. Nelson and Dr. Gibson only, 150% and 100%, respectively, of the named executive officer's target annual bonus as in effect for the fiscal year in which the termination occurs;
- payment for premiums for coverage under COBRA for the named executive officer and the named executive officer's eligible dependents, if any, for up to 18 months (in the case of Dr. Nelson), 12 months (in the case of Dr. Gibson) or nine months (in the case of Dr. Cloutier); and
- 100% accelerated vesting and exercisability (as applicable) of all outstanding equity awards and, in the case of an equity award with performance-based vesting unless otherwise specified in the applicable equity award agreement governing such award, all performance goals and other vesting criteria will be deemed achieved at 100% of target levels.

If any of the amounts provided for under these change in control severance agreements or otherwise payable to our named executive officers would constitute "parachute payments" within the meaning of Section 280G of the Code and could be subject to the related excise tax, the named executive officer would be entitled to receive either full payment of benefits under his change in control severance agreement or such lesser amount which would result in no portion of the benefits being subject to the excise tax, whichever results in the greater amount of after-tax benefits to the named executive officer. The change in control severance agreements do not require us to provide any tax gross-up payments.

Employee Benefit and Stock Plans

2021 Stock Incentive Plan (2021 SIP)

In May 2021, our board of directors adopted, and our stockholders approved, our 2021 SIP. Our 2021 SIP became effective on the business day immediately prior to the effective date of the registration statement of which this prospectus forms a part. Our 2021 SIP provides for the grant of incentive stock options, within the meaning of Section 422 of the Code, to our employees and any parent and subsidiary corporations' employees, and for the grant of nonstatutory stock options, stock appreciation rights, restricted stock, RSUs and performance awards to our employees, directors, and consultants and our parent and subsidiary corporations' employees and consultants. Our 2021 Plan terminated immediately prior to the effectiveness of the 2021 SIP with respect to the grant of future awards.

Authorized Shares. Subject to the adjustment provisions of and the automatic increase described in our 2021 SIP, a total of 3,500,000 shares of our common stock are reserved for issuance pursuant to our 2021 SIP. In addition, subject to the adjustment provisions of our 2021 SIP, the shares reserved for issuance under our 2021 SIP also will include (i) any shares that, as of the day immediately prior to the effective date of the registration statement of which this prospectus forms a part, have been reserved but not issued pursuant to any awards granted under the 2021 Plan, and are not subject to any awards thereunder, plus (ii) any shares subject to stock options, RSUs, or similar awards granted under our 2021 Equity Incentive Plan or our 2019 Plan that, on or after the effective date of the registration statement of which this prospectus forms a part, expire or otherwise terminate without having been exercised or issued in full, are tendered to or withheld by us for payment of an exercise price or for tax withholding obligations, or are forfeited to or repurchased by us due to failure to vest (provided that the maximum number of shares that may be added to our 2021 SIP pursuant to the foregoing is 2,459,970 shares). Subject to the adjustment provisions of our 2021 SIP, the number of shares available for issuance under our 2021 SIP will also include an annual increase on the first day of each fiscal year beginning with the 2022 fiscal year and ending on the ten year anniversary of the date our board of directors approved the 2021 SIP, in an amount equal to the least of:

- 5,250,000 shares of our common stock;
- 5% of the total number of shares of all classes of our common stock outstanding on the last day our immediately preceding fiscal year; or
- a lesser number of shares determined by the administrator.

If a stock option or stock appreciation right granted under the 2021 SIP expires or becomes unexercisable without having been exercised in full or is surrendered pursuant to an exchange program or, with respect to restricted stock, RSUs or stock-settled performance awards, is forfeited to, or repurchased by, us due to failure to vest, then the unpurchased shares (or for awards other than stock options or stock appreciation rights, the forfeited or repurchased shares) which were subject thereto will become available for future issuance under the 2021 SIP (unless the 2021 SIP has terminated). With respect to stock appreciation rights, only the net shares actually issued will cease to be available under the 2021 SIP and all remaining shares under stock appreciation rights will remain available for future issuance under the 2021 SIP (unless the 2021 SIP has terminated). Shares that have actually been issued under the 2021 SIP under any award will not be returned to the 2021 SIP; provided, however, that if shares issued pursuant to awards of restricted stock, RSUs or performance awards are repurchased or forfeited to us due to failure to vest, such shares will become available for future grant under the 2021 SIP. Shares used to pay the exercise price of an award or to satisfy the tax withholding obligations related to an award will become available for future issuance under the 2021 SIP. To the extent an award is paid out in cash rather than shares, the cash payment will not result in a reduction in the number of shares available for issuance under the 2021 SIP.

Plan Administration. Our compensation committee administers our 2021 SIP and may further delegate authority to one or more subcommittees or officers to the extent such delegation complies with applicable laws. Subject to the provisions of our 2021 SIP, the administrator has the power to administer our 2021 SIP and make all determinations deemed necessary or advisable for administering our 2021 SIP, including but not limited to: the power to determine the fair market value of our common stock; select the service providers to whom awards may be granted; determine the number of shares covered by each award; approve forms of award agreements for use under our 2021 SIP; determine the terms and conditions of awards (including, but not limited to, the exercise price, the time or times when the awards may be exercised (which may be based on performance criteria), any vesting acceleration or waiver or forfeiture restrictions, and any restriction or limitation regarding any award or the shares relating thereto); construe and interpret the terms of our 2021 SIP and awards granted under it, including but not limited to determining whether and when a change in control has occurred; establish, amend, and rescind rules and regulations relating to our 2021 SIP, and adopt sub-plans relating to the 2021 SIP; interpret, modify, or amend each award, including but not limited to the discretionary authority to extend the post-termination exercisability period of awards; allow participants to satisfy tax withholding obligations in any manner permitted by the 2021 SIP; delegate ministerial duties to any of our employees; authorize any person to take any steps and execute, on our behalf, any documents required for an award previously granted by the administrator to be effective; temporarily suspend the exercisability of an award if the administrator deems such suspension to be necessary or appropriate for administrative purposes, provided that, unless prohibited by applicable laws, such suspension shall be lifted in all cases not less than ten trading days before the last date that the award may be exercised; allow a participant to defer the receipt of payment of cash or the delivery of shares that would otherwise be due to such participant under an award; and make any determinations necessary or appropriate under the adjustment provisions of the 2021 SIP. The administrator also has the authority to institute and determine the terms of an exchange program under which

outstanding awards are surrendered or cancelled in exchange for awards of the same type (which may have higher or lower exercise prices and different terms), awards of a different type, or cash; participants would have the opportunity to transfer any outstanding awards to a financial institution or other person or entity selected by the administrator; or the exercise price of an outstanding award is increased or reduced. The administrator's decisions, interpretations, and other actions will be final and binding on all participants and holders of awards to the full extent permitted by law.

Stock Options. Our 2021 SIP permits the grant of options. The exercise price of options granted under our 2021 SIP must be at least equal to the fair market value of our common stock on the date of grant, except that options may be granted with a lower exercise price to a service provider who is not a U.S. taxpayer, or pursuant to certain transactions. The term of an option is determined by the administrator, provided that the term of an incentive stock option may not exceed ten years. With respect to any employee who owns more than 10% of the voting power of all classes of our outstanding stock or the stock of any parent or subsidiary, the term of an incentive stock option granted to such participant must not exceed five years and the exercise price must equal at least 110% of the fair market value on the grant date. The administrator determines the methods of payment of the exercise price of an option, which may include cash, check or wire transfer, cashless exercise, net exercise, promissory note, shares, or other consideration or method of payment acceptable to the administrator, to the extent permitted by applicable law. After the termination of service of an employee, director, or consultant, he or she may exercise his or her option for the period of time stated in his or her option agreement. In the absence of a specified time in an award agreement, if termination is due to death or disability, the option will remain exercisable for six months. In all other cases, in the absence of a specified time in an award, the option will remain exercisable for thirty days. These exercise periods may be tolled in certain circumstances, for example if exercise prior to the end of the applicable period is not permitted because of applicable laws, other than the rules of any stock exchange or quotation system on which the common stock is listed or quoted. However, in no event may an option be exercised later than the expiration of its term. To the extent that the aggregate fair market value of the shares with respect to which incentive stock options under Code Section 422(b) are exercisable for the first time by a participant during any calendar year (under all of our plans and agreements) exceeds $100,000, the incentive stock options whose value exceeds $100,000 will be treated as nonstatutory stock options.

Stock Appreciation Rights. Our 2021 SIP permits the grant of stock appreciation rights. Stock appreciation rights allow the recipient to receive the appreciation in the fair market value of our common stock between the exercise date and the date of grant. The term of stock appreciation rights is determined by the administrator. After the termination of service of an employee, director, or consultant, he or she may exercise his or her stock appreciation right for the period of time stated in his or her stock appreciation rights agreement. In the absence of a specified time in an award agreement, if termination is due to death or disability, the stock appreciation rights will remain exercisable for six months. In all other cases, in the absence of a specified time in an award agreement, the stock appreciation rights will remain exercisable for thirty days following the termination of service. These exercise periods may be tolled in certain circumstances, for example if exercise prior to the end of the applicable period is not permitted because of applicable laws, other than the rules of any stock exchange or quotation system on which the common stock is listed or quoted. However, in no event may a stock appreciation right be exercised later than the expiration of its term. Subject to the provisions of our 2021 SIP, the administrator determines the other terms of stock appreciation rights, including when such rights become exercisable and whether to pay any increased appreciation in cash or with shares of our common stock, or a combination thereof, except that the per share exercise price for the shares to be issued pursuant to the exercise of a stock appreciation right must be no less than 100% of the fair market value per share on the date of grant.

Restricted Stock. Our 2021 SIP permits the grant of restricted stock. Restricted stock awards are grants of shares of our common stock that vest in accordance with terms and conditions established by the administrator. The administrator determines the number of shares of restricted stock granted to any employee, director, or consultant and, subject to the provisions of our 2021 SIP, determines the terms and conditions of such awards. The administrator has the authority to impose whatever conditions to vesting it determines to be appropriate (for example, the administrator will be able to set restrictions based on the achievement of specific performance goals or continued service to us); provided, however, that the administrator, in its sole discretion, may accelerate the time at which any restrictions will lapse or be removed. Recipients of restricted stock awards generally have voting rights with respect to such shares upon grant without regard to vesting, unless the administrator provides otherwise, but recipients of restricted stock will not be entitled to receive dividends and other distributions with respect to shares

while such shares are unvested, unless the administrator provides otherwise. Shares of restricted stock that do not vest will be subject to our right of repurchase or forfeiture.

Restricted Stock Units. Our 2021 SIP permits the grant of RSUs. Each RSU will represent an amount equal to the fair market value of one share of our common stock. Subject to the provisions of our 2021 SIP, the administrator determines the terms and conditions of RSUs, including the vesting criteria and the form and timing of payment. The administrator has the authority to set vesting criteria based upon the achievement of company-wide, divisional, business unit, or individual goals (including, but not limited to, continued employment or service), or any other basis determined by the administrator in its discretion. The administrator, in its sole discretion, may pay earned RSUs in the form of cash, in shares, or in some combination of both. Notwithstanding the foregoing, the administrator, in its sole discretion, may reduce or waive any criteria that must be met to earn the RSUs.

Performance Awards. Our 2021 SIP permits the grant of performance awards. Performance awards are awards that will result in a payment to a participant only if performance goals established by the administrator are achieved or the awards otherwise vest. The administrator will set objectives or vesting provisions, that, depending on the extent to which they are met, will determine the value the payout for the performance awards. The administrator may set vesting criteria based on the achievement of company-wide, divisional, business unit, or individual goals (including, but not limited to, continued employment or service), or any other basis determined by the administrator in its discretion. Each performance award's threshold, target, and maximum payout values are established by the administrator on or before the grant date. After the grant of a performance award, the administrator, in its sole discretion, may reduce or waive any performance objectives or other vesting provisions for such performance award. The administrator, in its sole discretion, may pay earned performance awards in the form of cash, in shares, or in some combination thereof.

Non-Employee Directors. Our 2021 SIP provides that all outside (non-employee) directors will be eligible to receive all types of awards (except for incentive stock options) under our 2021 SIP. In order to provide a maximum limit on the awards that can be made to our non-employee directors, our 2021 SIP provides that in any given fiscal year, a non-employee director will not be paid, issued, or granted cash retainer fees and equity awards (including awards granted under the 2021 SIP) with an aggregate value greater than $750,000, but this limit is increased to $1,000,000 in connection with his or her initially joining our board of directors (in each case, excluding awards granted to him or her as a consultant or employee). The value of each equity award will be determined according to GAAP. The maximum limits do not reflect the intended size of any potential grants or a commitment to make grants to our outside directors under our 2021 SIP in the future.

Non-Transferability of Awards. Unless the administrator provides otherwise or as otherwise required by applicable laws, our 2021 SIP generally does not allow for the transfer of awards and only the recipient of an award may exercise an award during his or her lifetime. If the administrator makes an award transferable, such award will contain such additional terms and conditions as the administrator deems appropriate.

Certain Adjustments. If any extraordinary dividend or other extraordinary distribution (whether in cash, shares, other securities, or other property), recapitalization, stock split, reverse stock split, reorganization, merger, consolidation, split-up, spin-off, combination, reclassification, repurchase, or exchange of shares of our common stock or other of our securities, other change in our corporate structure affecting the shares, or any similar equity restructuring transaction affecting our shares occurs (including a change in control), the administrator, to prevent diminution or enlargement of the benefits or potential benefits intended to be provided under the 2021 SIP, will adjust the number and class of shares that may be delivered under the 2021 SIP or the number, class, and price of shares covered by each outstanding award, and the numerical share limits set forth in our 2021 SIP. The conversion of any of our convertible securities and ordinary course repurchases of our shares or other securities will not be treated as an event that will require adjustment under the 2021 SIP.

Dissolution or Liquidation. In the event of our proposed dissolution or liquidation, the administrator will notify each participant, at such time prior to the effective date of such proposed transaction as the administrator determines. To the extent it has not been previously exercised, awards will terminate immediately prior to the consummation of such proposed transaction.

Merger or Change in Control. Our 2021 SIP provides that in the event of a merger or change in control, as defined under our 2021 SIP, each outstanding award will be treated as the administrator determines, without a requirement to obtain a participant's consent, including, without limitation, that such award will be continued by the successor

corporation or a parent or subsidiary of the successor corporation or that the vesting of any such awards may accelerate automatically upon consummation of such transaction. An award generally will be considered continued if, following the transaction, (i) the award gives the right to purchase or receive the consideration received in the transaction by holders of our shares or (ii) the award is terminated in exchange for an amount of cash or property, if any, equal to the amount that would have been received upon the exercise or realization of the award at the closing of the transaction, which payment may be subject to any escrow applicable to holders of our common stock in connection with the transaction or subjected to the award's original vesting schedule. The administrator will not be required to treat all awards or portions thereof the vested and unvested portions of an award, or all participants similarly.

In the event that a successor corporation or its parent or subsidiary does not continue an outstanding award (or some portion of such award), then such award will fully vest, all restrictions on such award will lapse, all performance goals or other vesting criteria applicable to such award will be deemed achieved at 100% of target levels, and such award will become fully exercisable, if applicable, for a specified period prior to the transaction, unless specifically provided for otherwise under the applicable award agreement or other written agreement with the participant. The award will then terminate upon the expiration of the specified period of time. Unless specifically provided for otherwise under the applicable award agreement or other written agreement with the participant, if an option or stock appreciation right is not continued, the administrator will notify the participant in writing or electronically that such option or stock appreciation right will be exercisable for a period of time determined by the administrator in its sole discretion and the option or stock appreciation right will terminate upon the expiration of such period.

With respect to awards granted to an outside director, in the event of a change in control, all of his or her options and stock appreciation rights, if any, will vest fully and become immediately exercisable, all restrictions on his or her restricted stock and RSUs will lapse, and all performance goals or other vesting requirements for his or her performance awards will be deemed achieved at 100% of target levels, and all other terms and conditions met unless specifically provided otherwise under the applicable award agreement, a Company policy related to director compensation, or other written agreement with the participant, that specifically references this default rule.

Clawback. Awards granted under the 2021 SIP will be subject to recoupment under any clawback policy that we are required to adopt pursuant to the listing standards of any national securities exchange or association on which our stock is listed or as otherwise required by applicable laws, and the administrator will also be able to specify in an award agreement that the participant's rights, payments, or benefits with respect to an award will be subject to reduction, cancellation, forfeiture, or recoupment upon the occurrence of certain specified events.

Amendment and Termination. The administrator will have the authority to amend, alter, suspend, or terminate our 2021 SIP, provided we will obtain stockholder approval of any amendment to the extent necessary or desirable to comply with applicable laws. However, no amendment, alteration, suspension or termination of our 2021 SIP or an award under it may, materially impair the existing rights of any participant without the participant's consent. Our 2021 SIP will continue in effect until it is terminated, provided that incentive stock options may not be granted after the ten year anniversary of the date our board of directors or stockholders approved the 2021 SIP, whichever was earlier, and the automatic annual share increase will end on the ten year anniversary of the date our board of directors or stockholders approved the 2021 SIP, whichever was earlier.

2021 Employee Stock Purchase Plan (ESPP)

In May 2021, our board of directors adopted, and our stockholders approved, our ESPP. Our ESPP will continue in effect for a term of twenty years, unless terminated earlier according to the provisions described below and included in our ESPP.

Authorized Shares. Subject to the adjustment provisions of our ESPP, a total of 350,000 shares of our common stock are available for sale under our ESPP. In addition, subject to the adjustment provisions of our ESPP, our ESPP also provides for annual increases in the number of shares of our common stock that will be available for sale under our ESPP on the first day of each fiscal year beginning with the fiscal year following the fiscal year in which the first enrollment date (if any) occurs, equal to the least of:

- 1,050,000 shares of our common stock;

- 1% of the outstanding shares of all classes of our common stock as of the last day of the immediately preceding fiscal year; or
- a lesser number of shares determined by the administrator.

Plan Administration. Our compensation committee administers our ESPP. The administrator has full and exclusive discretionary authority to: construe, interpret and apply the terms of the ESPP; delegate ministerial duties to any of our employees; designate separate offerings under the ESPP; designate our subsidiaries and affiliates as participating in the ESPP; determine eligibility; adjudicate all disputed claims filed under the ESPP; and to establish such procedures that it deems necessary or advisable for the administration of the ESPP, including, but not limited to, adopting such procedures, sub-plans, and appendices to the enrollment agreement as are necessary or appropriate to permit participation in the ESPP by employees who are foreign nationals or employed outside the U.S. The administrator's findings, decisions, and determinations are final and binding on all participants to the full extent permitted by law.

Eligibility. Generally, all of our employees are eligible to participate if they are a common law employee providing services to us, or any participating subsidiary, and are customarily employed for at least twenty hours per week and more than five months in any calendar year.

However, an employee may not be granted rights to purchase shares of our common stock under our ESPP if such employee:

- immediately after the grant would own capital stock or hold outstanding options to purchase such stock possessing 5% or more of the total combined voting power or value of all classes of our capital stock; or
- holds rights to purchase shares of our common stock under all of our employee stock purchase plans that accrue at a rate that exceeds $25,000 worth of shares of our common stock for each calendar year in which such option is outstanding at any time.

Offering Periods and Purchase Periods. Our ESPP includes a component that allows us to make offerings intended to qualify under Section 423 of the Code and a component that allows us to make offerings not intended to qualify under Section 423 of the Code to designated companies, as described in our ESPP. Offering periods will begin and end on such dates as may be determined by the administrator in its discretion, in each case on a uniform and nondiscriminatory basis, and may contain one or more purchase periods. No offering period may last more than 27 months.

Contributions. Our ESPP permits participants to purchase shares of our common stock through contributions (in the form of payroll deductions or otherwise to the extent permitted by the administrator) in an amount established by the administrator in its discretion and on a uniform and nondiscriminatory basis for all options to be granted on any enrollment date. Unless otherwise determined by the Administrator during any purchase period, a participant may not increase the rate of his or her contributions and may only decrease the rate of his or her contributions one time. During any offering period. a participant may increase or decrease the rate of his or her contributions to become effective as of the beginning of the next purchase period occurring in such offering period.

Exercise of Purchase Right. Amounts contributed and accumulated by the participant will be used to automatically purchase shares of our common stock at the end of each purchase period. During each purchase period, a participant may purchase a fixed number of shares of our common stock in an amount that the administrator may establish from time to time in its discretion and on a uniform and nondiscriminatory basis for all options to be granted on any enrollment date. The purchase price of the shares will be 85% of the lower of the fair market value of our common stock on the first trading day of each offering period or on the exercise date. If the fair market value of our common stock on the exercise date is less than the fair market value on the first trading day of the offering period, participants will be withdrawn from the current offering period following their purchase of shares of our common stock on the purchase date and will be automatically re-enrolled in a new offering period. Participants may end their participation at any time during an offering period and will be paid their accrued contributions that have not yet been used to purchase shares of our common stock. Participation ends automatically upon termination of employment with us.

Non-Transferability. A participant may not transfer rights granted under our ESPP. If the compensation committee permits the transfer of rights, it may only be done by will, the laws of descent and distribution or as otherwise provided under our ESPP.

Certain Adjustments. If any dividend or other distribution (whether in cash, common stock, other securities, or other property), recapitalization, stock split, reverse stock split, reorganization, merger, consolidation, split-up, spin-off, combination, reclassification, repurchase, or exchange of shares of our common stock or other of our securities, other change in our corporate structure affecting the common stock occurs (other than ordinary dividends or other ordinary distributions), the administrator, to prevent diminution or enlargement of the benefits or potential benefits intended to be provided under our ESPP, will adjust the number and class of shares that may be delivered under our ESPP, the purchase price per share, the class and the number of shares of common stock covered by each option that has not yet been exercised, and the numerical limits set out in our ESPP.

Dissolution or Liquidation. Our ESPP provides that in the event of our proposed dissolution or liquidation, any offering period then in progress will be shortened by setting a new exercise date, and will terminate immediately prior to the consummation of such proposed dissolution or liquidation, unless otherwise provided by the administrator. The administrator will notify each participant that the exercise date has been changed and that the participant's option will be exercised automatically on the new exercise date unless prior to such date the participant has withdrawn from the offering period.

Merger or Change in Control. Our ESPP provides that in the event of a merger or change in control, as defined under our ESPP, a successor corporation may assume or substitute each outstanding purchase right. If the successor corporation refuses to assume or substitute for the outstanding purchase right, the offering period then in progress will be shortened, and a new exercise date will be set that will be before the date of the proposed merger or change in control. The administrator will notify each participant that the exercise date has been changed and that the participant's option will be exercised automatically on the new exercise date unless prior to such date the participant has withdrawn from the offering period.

Amendment; Termination. The administrator will have the authority to amend, suspend, or terminate our ESPP, except that, subject to certain exceptions described in our ESPP, no such action may adversely affect any outstanding rights to purchase shares of our common stock under our ESPP. Our ESPP automatically will terminate in 2041, unless we terminate it sooner.

2021 Equity Incentive Plan (2021 Plan)

In March 2021, our board of directors adopted, and our stockholders approved, our 2021 Plan. Prior to its termination, our 2021 Plan permitted the grant of incentive stock options, within the meaning of Section 422 of the Code, to our employees and any parent and subsidiary corporations' employees, and for the grant of nonstatutory stock options, stock appreciation rights, restricted stock, and RSUs to our employees, directors and consultants and our parent and subsidiary corporations' employees and consultants.

Authorized Shares. Subject to the adjustment provisions contained in the 2021 Plan, the maximum aggregate number of shares of our common stock that may be subject to awards and sold under the 2021 Plan was 6,000,000 shares. Our 2021 Plan was terminated in connection with this offering, and accordingly, no shares will be available for issuance under the 2021 Plan following the completion of this offering. Our 2021 Plan will continue to govern outstanding awards granted thereunder. As of June 14, 2021, options to purchase 1,806,765 shares of our common stock remained outstanding under our 2021 Plan.

Plan Administration. Our board of directors or one or more committees appointed by our board of directors administers our 2021 Plan. Subject to the provisions of our 2021 Plan, our administrator has the power to administer the plan, including but not limited to: the power to interpret the terms of our 2021 Plan and awards granted under it; prescribe, amend, and rescind rules relating to our 2021 Plan, including creating sub-plans; and determine the terms of the awards, including the exercise price, the number of shares of our common stock subject to each such award, the exercisability of the awards and the form of consideration, if any, payable upon exercise. Our administrator also has the authority to modify or amend existing awards, including the power to extend the post-termination exercisability period of awards and to extend the maximum term of an option and to allow participants to defer the receipt of the payment of cash or the delivery of shares that otherwise would be due to such participant under an award. The administrator also has the authority to institute and determine the terms and conditions of an

exchange program under which outstanding awards may be surrendered or cancelled in exchange for awards of the same type which may have a higher or lower exercise price or different terms, awards of a different type or cash; participants would have the opportunity to transfer any outstanding awards to a financial institution or other person or entity selected by the administrator; or the exercise price of an outstanding award is reduced or increased. The administrator may make all other determinations our administrator deems necessary or advisable for administering the 2021 Plan.

Options. Prior to its termination, stock options could have been granted under our 2021 Plan. The exercise price of options granted under our 2021 Plan must at least be equal to the fair market value of our common stock on the date of grant. The term of an option may not exceed ten years, except that with respect to incentive stock options and any participant who owns stock representing more than 10% of the voting power of all classes of our outstanding stock, the term must not exceed five years and the exercise price must equal at least 110% of the fair market value on the grant date. The administrator will determine the methods of payment of the exercise price of an option, which may include cash, shares or other property acceptable to the administrator, as well as other types of consideration permitted by applicable law. After termination of an employee, director, or consultant, he or she may exercise his or her option for the period of time as specified in the applicable option agreement. If termination is due to death or disability, the option generally will remain exercisable for at least six months. In all other cases, the option will generally remain exercisable for at least thirty days. However, in no event may an option be exercised later than the expiration of its term. Subject to the provisions of our 2021 Plan, the administrator determines the other terms of options.

Stock Appreciation Rights. Prior to its termination, stock appreciation rights could have been granted under our 2021 Plan. Stock appreciation rights allow the recipient to receive the appreciation in the fair market value of our common stock between the exercise date and the date of grant. Stock appreciation rights may not have a term exceeding ten years. After the termination of service of an employee, director, or consultant, he or she may exercise his or her stock appreciation right for the period of time stated in his or her award agreement. However, in no event may a stock appreciation right be exercised later than the expiration of its term. Subject to the provisions of our 2021 Plan, the administrator determines the other terms of stock appreciation rights, including when such rights become exercisable and whether to pay any increased appreciation in cash or with shares of our common stock, or a combination thereof, except that the per share exercise price for the shares of our common stock to be issued pursuant to the exercise of a stock appreciation right will be no less than 100% of the fair market value per share on the date of grant.

Restricted Stock. Prior to its termination, restricted stock could have been granted under our 2021 Plan. Restricted stock awards are grants of shares of our common stock that vest in accordance with terms and conditions established by the administrator. The administrator will determine the number of shares of restricted stock granted to any employee, director, or consultant and, subject to the provisions of our 2021 Plan, will determine the terms and conditions of such awards. The administrator may impose whatever conditions for lapse of the restriction on the shares it determines to be appropriate (for example, the administrator may set restrictions based on the achievement of specific performance goals or continued service to us); provided, however, that the administrator, in its sole discretion, may accelerate the time at which any restrictions will lapse or be removed. Recipients of restricted stock awards generally will have voting and dividend rights with respect to such shares upon grant without regard to the restriction, unless the administrator provides otherwise. Shares of restricted stock as to which the restrictions have not lapsed are subject to our right of repurchase or forfeiture.

Restricted Stock Units. Prior to its termination, RSUs could have been granted under our 2021 Plan. RSUs are bookkeeping entries representing an amount equal to the fair market value of one share of our common stock. Subject to the provisions of our 2021 Plan, the administrator will determine the terms and conditions of RSUs, including the vesting criteria (which may include achievement of company-wide, business unit, or individual goals, including continued employment or service to us) and the form and timing of payment. Notwithstanding the foregoing, the administrator, in its sole discretion, may reduce or waive any vesting criteria that must be met to receive a payout.

Non-Transferability of Awards. Unless the administrator provides otherwise, our 2021 Plan generally does not allow for the transfer of awards and only the recipient of an award may exercise an award during his or her lifetime.

Certain Adjustments. In the event of certain changes in our capitalization, to prevent diminution or enlargement of the benefits or potential benefits available under our 2021 Plan, the administrator will adjust the number and class of shares that may be delivered under our 2021 Plan or the number, class, and price of shares covered by each outstanding award.

Dissolution or liquidation. In the event of our proposed liquidation or dissolution, the administrator will notify participants as soon as practicable prior to the date of the proposed transaction. To the extent it has not been previously exercised, an award will terminate immediately prior to the consummation of such proposed transaction.

Merger or Change in Control. Our 2021 Plan provides that in the event of a merger or change in control, as defined under the 2021 Plan, each outstanding award will be treated as the administrator determines, including, without limitation, that (i) awards will be assumed, or substantially equivalent awards will be substituted, by the acquiring or succeeding corporation with appropriate adjustments as to the number and kind of shares and prices; (ii) upon written notice, awards will be terminated upon or immediately prior to the consummation of such merger or change in control; (iii) outstanding awards will vest and become exercisable, realizable, or payable, or restrictions applicable to an award will lapse, in whole or in part prior to or upon consummation of such merger or change in control, and, to the extent the administrator determines, terminate upon or immediately prior to the effectiveness of such merger or change in control; (iv) awards will be terminated in exchange for an amount of cash or property or awards will be replaced with other rights or property selected by the administrator in its sole discretion; or (v) any combination of the foregoing. If a successor corporation or its parent or subsidiary does not assume or substitute for the award, then the participant will fully vest in and have the right to exercise all of his or her outstanding options and stock appreciation rights, all restrictions on restricted stock and RSUs will lapse, and, with respect to awards with performance-based vesting, all performance goals or other vesting criteria will be deemed achieved at 100% of target levels and all other terms and conditions met. If an option or stock appreciation right is not assumed or substituted in the event of a merger or change in control, the administrator will notify the applicable participant in writing or electronically that the award will be exercisable for a period of time determined by the administrator, and the option or stock appreciation right will terminate upon the expiration of such period.

An award that vests, is earned or paid-out upon the satisfaction of one or more performance goals will not be considered assumed if we or our successor modifies any of such performance goals without the participant's consent; provided, however, a modification to such performance goals only to reflect the successor corporation's post-change in control corporate structure will not be deemed to invalidate an otherwise valid award assumption.

Amendment; Termination. As noted above, the 2021 Plan was terminated in connection with the adoption of the 2021 SIP and no further awards will be granted thereunder. All outstanding awards will continue to be governed by their existing terms.

2019 Stock Plan (2019 Plan)

Our board of directors adopted, and our stockholders approved, our 2019 Plan in March 2019. Our 2019 Plan was terminated in connection with the adoption of our 2021 Plan. Prior to its termination, our 2019 Plan allowed for the grant of incentive stock options, within the meaning of Section 422 of the Code, to our employees and our parent and subsidiary companies' employees, and for the grant of nonstatutory stock options, RSUs, and the direct award or sale of our common stock, to our employees, outside directors, and consultants and our parent and subsidiary companies' employees and consultants. Prior to its termination, only stock options were issued under the 2019 Plan.

Authorized Shares. Our 2019 Plan was terminated in connection with the adoption of our 2021 Plan, and accordingly, no shares are available for issuance under the 2019 Plan. Our 2019 Plan will continue to govern outstanding awards granted thereunder. As of June 14, 2021, options to purchase 428,258 shares of our common stock remained outstanding under our 2019 Plan.

Plan Administration. Our board of directors or one or more committees of our board of directors, or the administrator, administers our 2019 Plan. Subject to the provisions of the 2019 Plan, the administrator has the full authority and discretion to take any actions it deems necessary or advisable for the administration of the 2019 Plan. All decisions, interpretations, and other actions of the administrator are final and binding on all participants and all persons deriving their rights from a participant in the 2019 Plan.

Options. Prior to its termination, stock options could have been granted under our 2019 Plan. Except as specifically set forth in the 2019 Plan, the exercise price per share of all options must have equaled at least 100% of the fair market value per share of our common stock on the date of grant, as determined by the administrator. The term of a stock option may not exceed ten years. With respect to any participant who owned more than 10% of the total combined voting power of all classes of our outstanding stock as of the grant date, the term of an incentive stock option granted to such participant could not exceed five years and the exercise price per share must have equaled at least 110% of the fair market value per share of our common stock on the date of grant, as determined by the administrator. Within the limitations of the 2019 Plan, and without stockholder approval, our board of directors may modify, reprice, extend, or assume outstanding options (including increasing or reducing the exercise price) or may accept the cancellation of outstanding options (whether granted by us or another issuer) in return for the grant of new options, a different type of award for the same or a different number of shares and at the same or a different exercise price (if applicable) or cash, or may permit participants to transfer any outstanding options granted under the 2019 Plan to a financial institution or other person or entity selected by the board of directors.

After termination of an employee, director, or consultant, he or she may exercise his or her option for the period of time as specified in the applicable option agreement. If termination is due to disability, the option generally will remain exercisable for at least six months, and if the termination is due to death, the option generally will remain exercisable for at least twelve months. In all other cases, the option will generally remain exercisable for at least three months. However, an option generally may not be exercised later than the expiration of its term.

Non-Transferability of Awards. Our 2019 Plan generally does not allow for the transfer or assignment of awards. Options may be transferred only by a beneficiary designation or by will or by the laws of descent and distribution. If so provided by the administrator, nonstatutory options may be transferred to certain family members by gift or domestic relations orders.

Certain Adjustments. In the event of a subdivision of our outstanding stock, a declaration of a dividend payable in shares, a combination or consolidation of our outstanding stock into a lesser number of shares, a reclassification, or any other increase or decrease in the number of issued shares of stock effected without receipt of consideration by us, the 2019 Plan will be appropriately adjusted by the administrator as to the number and kind of securities subject to the 2019 Plan, the exercise price of each outstanding option, and the number and kind of securities subject to outstanding awards under the 2019 Plan, provided that our administrator will make any adjustments as may be required by Section 25102(o) of the California Corporations Code.

Corporate Transactions. Our 2019 Plan provides that, in the event that we are a party to a merger or consolidation, or in the event of a sale of all or substantially all of our stock or assets, all shares acquired under our 2019 Plan and all options and other awards outstanding on the effective date of the transaction will be treated in the manner described in the definitive transaction agreement (or, in the event the transaction does not entail a definitive agreement to which we are a party, in the manner determined by the administrator, with such determination having final and binding effect on all parties), which agreement or determination need not treat all options and awards (or all portions of an option or an award) in an identical manner. In the event that we are a party to a merger or consolidation, or in the event of a sale of all or substantially all of our stock or assets, and the successor corporation does not assume or substitute for an award (or portion thereof), the participant holding such award will fully vest in and have the right to exercise his or her option (or portion thereof) that is not assumed or substituted for, all restrictions on any award of shares and RSUs (or portions thereof) not assumed or substituted for will lapse, and with respect to awards with performance-based vesting (or portions thereof) not assumed or substituted for, all performance goals or other vesting criteria will be deemed achieved at 100% of target levels and all other terms and conditions met, in each case ,unless specifically provided otherwise under an award agreement or other written agreement. In addition, if an option (or portion thereof) is not assumed or substituted for in connection with a merger or consolidation, or in the event of a sale of all or substantially all of our stock or assets, each participant holding an option will be notified in writing or electronically that such option (or applicable portion) will be exercisable for period of time determined in our sole discretion and will terminate upon the expiration of such period.

Amendment; Termination. As noted above, the 2019 Plan was terminated in connection with the adoption of the 2021 Plan and no further awards will be granted thereunder. All outstanding awards will continue to be governed by their existing terms.

Executive Incentive Compensation Plan

In May 2021, our board of directors adopted an Executive Incentive Compensation Plan (the Bonus Plan), effective on the date adopted by our board of directors. The Bonus Plan will be administered by our board of directors or a committee appointed by our board of directors. Unless and until our board of directors determines otherwise, our compensation committee will be the administrator of the Bonus Plan. The Bonus Plan allows our compensation committee to provide incentive awards to selected employees, including our named executive officers, determined by our compensation committee, which may be based upon performance goals established by our compensation committee. Our compensation committee, in its sole discretion, may establish a target award for each participant under the Bonus Plan, which may be expressed as a percentage of the participant's average annual base salary for the applicable performance period or a fixed dollar amount or such other amount or based on such other formula or factors as the compensation committee determines.

Under the Bonus Plan, our compensation committee will determine the performance goals, if any, applicable to awards, which goals may include, without limitation: attainment of research and development milestones; bookings; business divestitures and acquisitions; capital raising; cash flow; cash position; contract awards or backlog; corporate transactions; customer renewals; customer retention rates from an acquired company, subsidiary, business unit or division; earnings (which may include any calculation of earnings, including but not limited to earnings before interest and taxes, earnings before taxes, earnings before interest, taxes, depreciation and amortization and net taxes); earnings per share; expenses; financial milestones; gross margin; growth in stockholder value relative to the moving average of the S&P 500 Index or another index; internal rate of return; leadership development or succession planning; license or research collaboration arrangements; market share; net income; net profit; net sales; new product or business development; new product invention or innovation; number of customers; operating cash flow; operating expenses; operating income; operating margin; overhead or other expense reduction; patents; procurement; product defect measures; product release timelines; productivity; profit; regulatory milestones or regulatory-related goals; retained earnings; return on assets; return on capital; return on equity; return on investment; return on sales; revenue; revenue growth; sales bookings; sales results; sales growth; savings; stock price; time to market; total stockholder return; working capital; unadjusted or adjusted actual contract value; unadjusted or adjusted total contract value; and individual objectives such as peer reviews or other subjective or objective criteria. As determined by our compensation committee, the performance goals may be based on GAAP or non-GAAP results and any actual results may be adjusted by our compensation committee for one-time items or unbudgeted or unexpected items and/or payment of actual awards when determining whether the performance goals have been met. The performance goals may be based on any factors our compensation committee determines relevant, including, without limitation, on an individual, divisional, portfolio, project, business unit, segment or company-wide basis. Any criteria used may be measured on such basis as our compensation committee determines. The performance goals may differ from participant to participant and from award to award.

Our compensation committee, at any time prior to payment of an actual award, may increase, reduce or eliminate a participant's actual award, or increase, reduce or eliminate the amount allocated to the bonus pool. The actual award may be below, at or above a participant's target award, in our compensation committee's discretion. Our compensation committee may determine the amount of any increase, reduction or elimination based on such factors as it deems relevant, and it will not be required to establish any allocation or weighting with respect to the factors it considers.

Actual awards generally will be paid in cash (or its equivalent) in a single lump sum. The compensation committee reserves the right to settle an actual award with a grant of an equity award with such terms and conditions, including any vesting requirements, as determined by the compensation committee. Unless otherwise determined by our compensation committee, to earn an actual award, a participant must be employed by us (or an affiliate of us, as applicable) on the date the bonus is paid. Payment of bonuses occurs as soon as practicable after the end of the applicable performance period, but no later than the dates set forth in the Bonus Plan. All awards under the Bonus Plan will be subject to reduction, cancellation, forfeiture, or recoupment in accordance with any clawback policy that we are required to adopt pursuant to any rule, regulation or law. Our compensation committee may also impose such other clawback, recovery or recoupment provisions with respect to an award under the Bonus Plan as it may determine is necessary or appropriate.

Our board of directors or its compensation committee will have the authority to amend or terminate the Bonus Plan provided such action does not alter or impair the existing rights of any participant with respect to any earned bonus without the participant's consent. The Bonus Plan will remain in effect until terminated in accordance with the terms of the Bonus Plan.

401(k) plan

We maintain a 401(k) retirement savings plan for the benefit of our employees, including our named executive officers who remain employed with us, and who satisfy certain eligibility requirements. Under the 401(k) plan, eligible employees may elect to defer a portion of their compensation, within the limits prescribed by the Code, on a pre-tax or after-tax (Roth) basis, through contributions to the 401(k) plan. The 401(k) plan authorizes employer matching and discretionary contributions. The 401(k) plan is intended to qualify under Sections 401(a) and 501(a) of the Code. As a tax-qualified retirement plan, pre-tax contributions to the 401(k) plan and earnings on those pre-tax contributions are not taxable to the employees until distributed from the 401(k) plan, and earnings on Roth contributions are not taxable when distributed from the 401(k) plan.

Limitation of Liability and Indemnification

Our amended and restated certificate of incorporation and amended and restated bylaws, each to be effective upon the completion of this offering, will provide that we will indemnify our directors and officers, and may indemnify our employees and other agents, to the fullest extent permitted by Delaware law. Delaware law prohibits our amended and restated certificate of incorporation from limiting the liability of our directors for the following:

- any breach of the director's duty of loyalty to us or to our stockholders;
- acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;
- unlawful payment of dividends or unlawful stock repurchases or redemptions; and
- any transaction from which the director derived an improper personal benefit.

If Delaware law is amended to authorize corporate action further eliminating or limiting the personal liability of a director, then the liability of our directors will be eliminated or limited to the fullest extent permitted by Delaware law, as so amended. Our amended and restated certificate of incorporation does not eliminate a director's duty of care and, in appropriate circumstances, equitable remedies, such as injunctive or other forms of non-monetary relief, remain available under Delaware law. This provision also does not affect a director's responsibilities under any other laws, such as the federal securities laws or other state or federal laws. Under our amended and restated bylaws, we will also be empowered to purchase insurance on behalf of any person whom we are required or permitted to indemnify.

In addition to the indemnification required in our amended and restated certificate of incorporation and amended and restated bylaws, we have entered into an indemnification agreement with each member of our board of directors and each of our officers prior to the completion of the offering. These agreements provide for the indemnification of our directors and officers for certain expenses and liabilities incurred in connection with any action, suit, proceeding or alternative dispute resolution mechanism or hearing, inquiry or investigation that may lead to the foregoing, to which they are a party, or are threatened to be made a party, by reason of the fact that they are or were a director, officer, employee, agent or fiduciary of our company, or any of our subsidiaries, by reason of any action or inaction by them while serving as an officer, director, agent or fiduciary, or by reason of the fact that they were serving at our request as a director, officer, employee, agent or fiduciary of another entity. In the case of an action or proceeding by or in the right of our company or any of our subsidiaries, no indemnification will be provided for any claim where a court determines that the indemnified party is prohibited from receiving indemnification. For certain directors, serving on the board at the direction of another entity who may also provide the director certain indemnification rights, we have agreed to be primarily responsible for amounts required to be indemnified. We believe that these charter and bylaw provisions and indemnification agreements are necessary to attract and retain qualified persons as directors and officers.

The limitation of liability and indemnification provisions in our amended and restated certificate of incorporation and amended and restated bylaws may discourage stockholders from bringing a lawsuit against directors for breach of their fiduciary duties. They may also reduce the likelihood of derivative litigation against directors and officers, even though an action, if successful, might benefit us and our stockholders. Moreover, a stockholder's investment may be harmed to the extent we pay the costs of settlement and damage awards against directors and officers pursuant to these indemnification provisions. Insofar as indemnification for liabilities arising under the Securities Act, may be permitted to our directors, officers and controlling persons pursuant to the foregoing provisions, or otherwise, we have been advised that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act, and is, therefore, unenforceable. There is no pending litigation or proceeding naming any of our

directors or officers as to which indemnification is being sought, nor are we aware of any pending or threatened litigation that may result in claims for indemnification by any director or officer.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

Other than compensation arrangements, including employment, termination of employment and change in control arrangements, with our directors and executive officers, including those discussed in the sections titled “Management” and “Executive Compensation,” and the registration rights described in the section titled “Description of Capital Stock—Registration Rights,” the following is a description of each transaction since January 1, 2019 and each currently proposed transaction in which:

- we have been or are to be a participant;
- the amount involved exceeded or exceeds $120,000; and
- any of our directors, executive officers or holders of more than 5% of our outstanding capital stock, or any immediate family member of, or person sharing the household with, any of these individuals or entities, had or will have a direct or indirect material interest.

Sales of Securities

Acquisition of SGI-DNA, Inc. by GATTACA Mining, LLC

In March 2019, GATTACA Mining, LLC (GATTACA), an entity owned and controlled by Todd R. Nelson, our President and Chief Executive Officer, purchased 100% of the issued and outstanding shares of SGI-DNA, Inc. (which subsequently changed its name to Codex DNA, Inc.) from SGI for (i) $10.0 million in cash, paid through the issuance of a secured promissory note by GATTACA, (ii) a participation right equal to the proceeds a holder of 6% of our fully diluted ownership would receive upon a change of control of the company, and (iii) the issuance of a warrant to purchase common stock equal to 6% of our fully diluted ownership. At the time of this transaction, the aggregate consideration was valued at approximately $9.0 million (see Note 3 of our Consolidated Financial Statements). In connection with our Series A convertible preferred stock financing, both the participation right and warrant were amended (x) to replace the 6% participation right with (i) a participation right upon a change in control of the company equal to the value of net proceeds the holder of 1,081,745 shares of common stock of the company (which was equal to 6% of our fully diluted ownership at the time of the Series A convertible preferred stock financing) would receive in such transaction, and (ii) the right to receive future warrants equal to 3% of the amount of equity securities of the company sold in any future equity financing primarily for capital raising purposes (subject to certain exceptions), and with the exercise price equal to the lowest purchase price paid in such equity round, and (y) to change the terms of the existing warrant such that the warrant would automatically net exercise upon an initial public offering to purchase (a) 1,081,745 shares of common stock of the company less (b) such number of shares equal to the aggregate exercise price of $3.00 divided by the per share offering price in an initial public offering.

Assumption and Cancellation of certain Secured Promissory Notes

In August 2019, the Company assumed certain secured promissory notes, in the aggregate principal amount of $1.5 million, issued to BroadOak Fund IV, LLC, a holder of more than 5% of our capital stock, and Dr. Nelson, by GATTACA (the Secured Promissory Notes). GATTACA used the proceeds of these secured promissory notes to make unsecured working capital advances to Codex DNA, Inc. The principal and interest of the Secured Promissory Notes, totaling approximately $1.6 million and $261 thousand for BroadOak Fund IV, LLC and Dr. Nelson, respectively, were cancelled in connection with the issuance of 541,677 and 90,747 shares of Series A convertible preferred stock to BroadOak Fund IV, LLC and Dr. Nelson, respectively, at a conversion price of $2.88 per share, which was the same price as that paid by cash investors for Series A convertible preferred stock.

Convertible Preferred Stock Issuances

In December 2019, we issued and sold an aggregate of 4,980,055 shares of our Series A-1 convertible preferred stock at a purchase price of $3.61 per share for an aggregate purchase price of $18.0 million. These shares of Series A-1 convertible preferred stock will convert into an aggregate of 4,980,055 shares of common stock immediately prior to the completion of this offering.

The table below sets forth the number of shares of Series A-1 convertible preferred stock sold to our directors, executive officers and holders of more than 5% of our capital stock:

Investor	Shares of Series A-1 Preferred Stock		Total Purchase Price
BroadOak Fund IV, LLC	277,368	$	999,999
DH Life Science LLC	542,158	$	1,954,650
Northpond Ventures, LP	4,160,529	$	14,999,999

In August 2019, we issued and sold an aggregate of 7,599,274 shares of our Series A convertible preferred stock at a purchase price of $2.88 per share for an aggregate purchase price of $21.9 million. These shares of Series A convertible preferred stock will convert into an aggregate of 7,599,274 shares of common stock upon the completion of this offering.

The table below sets forth the number of shares of Series A convertible preferred stock sold to our directors, executive officers and holders of more than 5% of our capital stock:

Investor	Shares of Series A Preferred Stock		Total Purchase Price
BroadOak Fund IV, LLC	541,677	$	1,558,082
DH Life Science LLC	1,751,999	$	5,039,452
Northpond Ventures, LP	5,214,851	$	14,999,999
Todd R. Nelson	90,747	$	261,027

Warrants to Purchase Convertible Preferred Stock

In connection with the Company's Series A-1 convertible preferred stock financing in December 2019, we issued a warrant to purchase up to 154,022 shares of Series A-1 Preferred Stock (the A-1 Warrants) to SGI, our former parent and holder of more than 5% of our capital stock, at an exercise price of $3.61 per share, which was the cash purchase price paid by investors in the Series A-1 convertible preferred stock financing..

Investors' Rights Agreement

We are party to an Amended and Restated Investors' Rights Agreement with certain holders of our capital stock, including BroadOak Fund IV LLC, DH Life Science LLC, Northpond Ventures, LP, GATTACA, and Dr. Nelson. Under our investors' rights agreement, certain holders of our capital stock have the right to demand that we file a registration statement or request that their shares of our capital stock be covered by a registration statement that we are otherwise filing. See the section titled "Description of Capital Stock—Registration Rights" for additional information regarding these registration rights.

Voting Agreement

We are party to an Amended and Restated Voting Agreement with certain holders of our capital stock, including BroadOak Fund IV LLC, DH Life Science LLC, Northpond Ventures LP, GATTACA, and Dr. Nelson. Upon the consummation of this offering, the obligations of the parties to the voting agreement to vote their shares so as to elect certain nominees, as well as the other rights and obligations under the agreement, terminated and none of our stockholders have any special rights regarding the nomination, election or designation of members of our board of directors. Our existing certificate of incorporation contains provisions regarding election of members of the board of directors that correspond to the voting agreement; however, such provisions will be removed in the amended and restated certificate of incorporation that will be effective at the closing of this offering.

Indemnification Agreements

We have entered into separate indemnification agreements with each of our directors and executive officers, in addition to the indemnification provided for in our amended and restated certificate of incorporation and bylaws. The indemnification agreements and our amended restated certificate of incorporation and bylaws that will be in effect upon the closing of this offering require us to indemnify our directors, executive officers and certain controlling

persons to the fullest extent permitted by Delaware law. See the section titled “Executive Compensation—Limitation of Liability and Indemnification” for additional information.

Equity Grants to Executive Officers and Directors

We have granted options to our named executive officers and certain of our non-employee directors as more fully described in the sections titled “Director Compensation” and “Executive Compensation.”

Synthetic Genomics

As of December 31, 2020, we had incurred fees from SGI of approximately $227,000 for services relating to intellectual property matters, including patent filings and patent prosecution.

Related Party Transaction Policy

Our audit committee will have the primary responsibility for reviewing and approving or disapproving “related party transactions,” which are transactions between us and related persons in which the aggregate amount involved exceeds or may be expected to exceed $120,000 and in which a related person has or will have a direct or indirect material interest. The charter of our audit committee will provide that our audit committee shall review and approve or ratify any related party transaction.

We have adopted a formal written policy providing that we are not permitted to enter into any transaction that exceeds $120,000 and in which any related person has a direct or indirect material interest without the consent of our audit committee. In approving or rejecting any such transaction, our audit committee is to consider the relevant facts and circumstances available and deemed relevant to our audit committee, including whether the transaction is on terms no less favorable than terms generally available to an unaffiliated third party under the same or similar circumstances and the extent of the related person’s interest in the transaction.

PRINCIPAL STOCKHOLDERS

The following table sets forth the beneficial ownership of our common stock as of March 31, 2021 by:

- each person, or group of affiliated persons, who is known by us to beneficially own more than 5% of our common stock;
- each of the named executive officers;
- each of our directors; and
- all of our current executive officers and directors as a group.

We have determined beneficial ownership in accordance with the rules of the SEC, and thus it represents sole or shared voting or investment power with respect to our securities. Unless otherwise indicated below, to our knowledge, the persons and entities named in the table have sole voting and sole investment power with respect to all shares that they beneficially owned, subject to community property laws where applicable. The information does not necessarily indicate beneficial ownership for any other purpose, including for purposes of Sections 13(d) and 13(g) of the Exchange Act.

We have based our calculation of the percentage of beneficial ownership prior to this offering on 21,562,269 shares of our common stock outstanding as of March 31, 2021, after giving pro forma effect to the automatic conversion of all of our outstanding convertible preferred stock and the automatic exercise of all of our outstanding warrants issued to SGI into an aggregate of 16,315,096 shares of common stock immediately prior to the completion of this offering. We have based our calculation of the percentage of beneficial ownership after this offering on 28,228,934 shares of our common stock outstanding immediately after the completion of this offering, assuming no exercise by the underwriters of their option to purchase additional shares. We have deemed shares of our common stock subject to stock options that are currently exercisable or exercisable within 60 days of March 31, 2021, to be outstanding and to be beneficially owned by the person holding the stock option for the purpose of computing the percentage ownership of that person. We did not deem these shares outstanding, however, for the purpose of computing the percentage ownership of any other person.

Unless otherwise indicated, the address of each beneficial owner listed in the table below is c/o Codex DNA, Inc., 9535 Waples Street, Suite 100, San Diego, CA 92121-2993.

	Shares Beneficially Owned Prior to this Offering		Shares Beneficially Owned After this Offering	
Name of Beneficial Owner	**Shares**	**Percentage**	**Shares**	**Percentage**
5% and Greater Stockholders:				
Northpond Ventures, LP[(1)]	9,375,380	43.5 %	9,375,380	33.2 %
GATTACA Mining LLC[(2)]	6,000,000	27.8 %	6,000,000	21.3 %
BroadOak Fund IV, LLC[(3)]	2,319,045	10.8 %	2,319,045	8.2 %
Danaher Innovation Center LLC[(4)]	2,294,157	10.6 %	2,294,157	8.1 %
Synthetic Genomics, Inc.[(5)]	1,235,767	5.7 %	1,235,767	4.4 %
Named Executive Officers and Directors:				
Todd R. Nelson[(6)]	6,090,747	28.3 %	6,090,747	21.6 %
Daniel G. Gibson[(7)]	87,937	0.4 %	87,937	0.3 %
Timothy E. Cloutier	—	— %	—	
Andrea L. Jackson[(8)]	—	— %	—	
Sharon Kedar[(9)]	—	— %	—	
Jami D. Nachtsheim[(10)]	—	— %	—	
William F. Snider[(11)]	2,319,045	10.8 %	2,319,045	8.2 %
Christine A. Tsingos[(12)]	—	— %	—	
Franklin R. Witney	—	— %	—	
All executive officers and directors as a group (10 persons)[(13)]	8,497,729	39.4 %	8,497,729	30.1 %

(1) Consists of 9,375,380 shares held of record by Northpond Ventures, LP. Northpond Ventures, LP is managed by Northpond Ventures GP, LLC (Northpond GP LLC) and Michael Rubin is the managing member of Northpond GP LLC. Each of Northpond GP LLC and Mr. Rubin may also be deemed to beneficially own the shares held by Northpond Ventures, LP. Andrea L. Jackson, a member of our board of directors, is a Director of Northpond Ventures, LLC, an investment firm affiliated with Northpond Ventures, LP and Northpond GP LLC. Ms. Jackson disclaims beneficial ownership of such shares except to the extent of her pecuniary interest therein, if any. The address of Northpond Ventures, LP is 7500 Old Georgetown Rd, Suite 850, Bethesda, MD 20814.

(2) Consists of 6,000,000 shares held of record by GATTACA. Todd R. Nelson is the managing member of GATTACA and may be deemed to have voting and dispositive power over the shares held by GATTACA. The address of GATTACA is P.O. Box 676273, Rancho Santa Fe, CA 92067.

(3) Consists of 2,319,045 shares held of record by BroadOak Fund IV, LLC. BroadOak Asset Management, LLC is the manager and general partner of BroadOak Fund IV, LLC, and BroadOak Capital Partners, LLC is the managing member of BroadOak Asset Management, LLC. William F. Snider is a partner and manager of BroadOak Capital Partners, LLC. Each of Mr. Snider and BroadOak Capital Partners, LLC may be deemed to have voting and dispositive power over the shares held by BroadOak Fund IV, LLC, and each disclaims beneficial ownership of such shares except to the extent of his/its indirect pecuniary interest therein, if any. The address for BroadOak Fund IV, LLC is 4800 Montgomery Lane Suite 230, Bethesda, MD 20814.

(4) Consists of 2,294,157 shares held of record by Danaher Innovation Center LLC. Danaher Innovation Center LLC is an indirect, wholly owned subsidiary of Danaher Corporation. The address of Danaher Innovation Center LLC is 2200 Pennsylvania Avenue, N.W., Suite 800W, Washington, DC 20037. These shares were

held by DH Life Sciences LLC, another wholly owned subsidiary of Danaher Corporation, as of March 31, 2021, and were transferred to Danaher Innovation Center LLC on April 23, 2021.

(5) Consists of 1,235,767 shares subject to outstanding warrants which are exercisable within 60 days of December 30, 2020 held by Synthetic Genomics, Inc. The address for Synthetic Genomics, Inc. is 11149 North Torrey Pines Road, La Jolla, CA 92037.

(6) Consists of 90,747 shares held of record by Todd R. Nelson and the shares referenced in footnote 2.

(7) Consists of 81,173 shares held of record by Daniel G. Gibson and 6,764 shares issuable pursuant to stock options exercisable with 60 days of March 31, 2021.

(8) Ms. Jackson joined the board of directors in May 2021.

(9) Ms. Kedar disclaims beneficial ownership of the shares referenced in footnote 1, except to the extent of her pecuniary interest therein, if any. Ms. Kedar resigned from our board of directors in May 2021.

(10) Ms. Nachtsheim joined the board of directors in June 2021.

(11) Consists of the shares referenced in footnote 3. Mr. Snider disclaims beneficial ownership of such shares except to the extent of his pecuniary interest therein, if any.

(12) Ms. Tsingos joined the board of directors in May 2021.

(13) Consists of (i) 8,490,965 shares beneficially owned by our current executive officers and directors, and (ii) 6,764 shares issuable pursuant to stock options held by such directors and officers and exercisable within 60 days of March 31, 2021.

DESCRIPTION OF CAPITAL STOCK

The following descriptions of our capital stock and certain provisions of our amended and restated certificate of incorporation and amended and restated bylaws are summaries and are qualified by reference to the amended and restated certificate of incorporation and the amended and restated bylaws that will be in effect upon completion of this offering. Copies of these documents will be filed with the SEC as exhibits to our registration statement, of which this prospectus forms a part. The descriptions of the common stock and preferred stock reflect changes to our capital structure that will occur upon the completion of this offering.

Immediately prior to the completion of this offering and the filing of our amended and restated certificate of incorporation to be effective upon completion of this offering, our authorized capital stock will consist of 100,000,000 shares of common stock, par value $0.0001 per share, and 5,000,000 shares of preferred stock, par value $0.0001 per share.

Immediately prior to the completion of this offering, all the outstanding shares of our convertible preferred stock will automatically convert into an aggregate of 15,079,329 shares of our common stock.

Unless previously exercised, immediately prior to the completion of this offering, that certain Warrant to Purchase Common Stock, dated March 8, 2019, issued to SGI will automatically net exercise into 1,081,745 shares of our common stock and that certain Warrant to Purchase Stock of the Company, dated December 19, 2019, issued to SGI, will automatically net exercise into 154,022 shares of our common stock.

In connection with the 2021 Loan Agreement, the Company issued to SVB a warrant to purchase a number of shares of preferred stock (the Preferred Warrant). Unless previously exercised, following this offering, the Preferred Warrant will be exercisable for 62,406 shares of common stock. If the Company chooses to draw any more funds under the Loan Agreement, the number of shares into which the Preferred Warrant is exercisable shall be increased by a number of shares equal to 1.5% of such draw divided by the then applicable warrant price. Unless previously exercised, the Preferred Warrant will expire on March 4, 2031.

Based on shares of common stock outstanding as of March 31, 2021, and after giving pro forma effect to the automatic conversion of all of our outstanding convertible preferred stock and the automatic exercise of all of our outstanding warrants issued to SGI into an aggregate of 16,315,096 shares of common stock immediately prior to the completion of this offering and the issuance of 6,666,665 shares of common stock in this offering, there will be 28,228,934 shares of common stock outstanding upon the completion of this offering. As of March 31, 2021, we had 28 stockholders of record.

Common Stock

Voting Rights

Each holder of common stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, including the election of directors. Our amended and restated certificate of incorporation and amended and restated bylaws to be in effect upon the completion of this offering do not provide for cumulative voting rights. Because of this, the holders of a plurality of the shares of common stock entitled to vote in any election of directors can elect all of the directors standing for election, if they should so choose. With respect to matters other than the election of directors, at any meeting of the stockholders at which a quorum is present or represented, the affirmative vote of a majority of the voting power of the shares present in person or represented by proxy at such meeting and entitled to vote on the subject matter shall be the act of the stockholders, except as otherwise required by law. The holders of a majority of the stock issued and outstanding and entitled to vote, present in person or represented by proxy, shall constitute a quorum for the transaction of business at all meetings of the stockholders.

Dividends

Subject to preferences that may be applicable to any then-outstanding preferred stock, holders of our common stock are entitled to receive dividends, if any, as may be declared from time to time by our board of directors out of legally available funds.

Liquidation

In the event of our liquidation, dissolution or winding up, holders of our common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then-outstanding shares of preferred stock.

Rights and Preferences

Holders of our common stock have no preemptive, conversion, subscription or other rights, and there are no redemption or sinking fund provisions applicable to our common stock. The rights, preferences and privileges of the holders of our common stock are subject to and may be adversely affected by the rights of the holders of shares of any series of our preferred stock that we may designate in the future.

Fully Paid and Nonassessable

All of our outstanding shares of common stock are, and the shares of common stock to be issued in this offering, upon payment and delivery in accordance with the underwriting agreement, will be fully paid and nonassessable.

Preferred Stock

Upon the completion of this offering, our board of directors will have the authority, without further action by the stockholders, to issue up to 5,000,000 shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, redemption rights, liquidation preferences, sinking fund terms and the number of shares constituting any series or the designation of such series, any or all of which may be greater than the rights of common stock. The issuance of preferred stock could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing a change in our control or other corporate action. Upon the completion of this offering, no shares of preferred stock will be outstanding, and we have no present plan to issue any shares of preferred stock.

Common Stock Options

As of March 31, 2021, we had outstanding options to purchase an aggregate of 484,630 shares of our common stock, with a weighted-average exercise price of $0.59 per share, under our 2019 Plan.

As of March 31, 2021, we had outstanding options to purchase an aggregate of 662,108 shares of our common stock, with an exercise price of $4.38 per share, under our 2021 Plan.

Registration Rights

After the completion of this offering, under our investors' rights agreement, as amended, certain holders of shares of common stock or their transferees, will have the right to require us to register the offer and sale of their shares, or to include their shares in any registration statement we file, in each case as described below.

Demand Registration Rights

After the date that is 180 days following the date of effectiveness of the registration statement of which this prospectus forms a part, certain holders of our common stock will be entitled to certain demand registration rights. Prior to December 19, 2024, the holders of at least a majority of the shares having registration rights then outstanding can request that we file a registration statement to register the offer and sale of their shares. We are only obligated to effect up to two such registrations. Each such request for registration must cover securities the anticipated aggregate gross proceeds of which, before deducting underwriting discounts and expenses, is at least $10 million. These demand registration rights are subject to specified conditions and limitations, including the right of the underwriters to limit the number of shares included in any such registration under certain circumstances. If we determine that it would be materially detrimental to us and our stockholders to effect such a demand registration, we have the right to defer such registration, not more than once in any twelve month period, for a period of up to 90 days.

Form S-3 Registration Rights

After the completion of this offering, the holders of up to 15,079,329 shares of our common stock will be entitled to certain Form S-3 registration rights. At any time after the completion of this offering when we are eligible to file a registration statement on Form S-3, the holders of the shares having these rights then outstanding can request that we register the offer and sale of their shares of our common stock on a registration statement on Form S-3 so long as the request covers securities the anticipated aggregate public offering price of which is at least $3 million. These stockholders may make an unlimited number of requests for registration on a registration statement on Form S-3. However, we will not be required to effect a registration on Form S-3 if we have effected two such registrations within the twelve month period preceding the date of the request. These Form S-3 registration rights are subject to specified conditions and limitations, including the right of the underwriters to limit the number of shares included in any such registration under certain circumstances. Additionally, if we determine that it would be seriously detrimental to us and our stockholders to effect such a demand registration, we have the right to defer such registration, not more than once in any 12 month period, for a period of up to 90 days.

Piggyback Registration Rights

After the completion of this offering, the holders of up to 15,079,329 shares of our common stock will be entitled to certain “piggyback” registration rights. If we propose to register the offer and sale of shares of our common stock or the common stock of certain other holders under the Securities Act, the holders of these shares can request that we include their shares in such registration, subject to certain marketing and other limitations, including the right of the underwriters to limit the number of shares included in any such registration statement under certain circumstances. As a result, whenever we propose to file a registration statement under the Securities Act, other than with respect to (i) a registration relating solely to employee benefit plans, (ii) a registration relating to common stock issuable upon conversion of debt securities that are also being registered, (iii) a registration relating to a corporate reorganization or other transaction covered by Rule 145 promulgated under the Securities Act, (iv) a registration on any form that does not include substantially the same information as would be required to be included in a registration statement covering the sale the registrable securities or (v) a registration pursuant to the demand or Form S-3 registration rights described in the preceding two paragraphs above, the holders of these shares are entitled to notice of the registration and have the right, subject to certain limitations, to include their shares in the registration.

Expenses of Registration

We will pay all expenses relating to any demand registrations, Form S-3 registrations and piggyback registrations, subject to specified exceptions.

Termination

The registration rights terminate upon the earliest of (i) the date that is five years after the closing of this offering, (ii) immediately prior to the closing of certain liquidation events and (iii) as to a given holder of registration rights, the date after the closing of this offering when such holder of registration rights can sell all of such holder’s registrable securities during any 90-day period pursuant to Rule 144 promulgated under the Securities Act.

Anti-takeover Effects of Certain Provisions of Delaware Law, Our Amended and Restated Certificate of Incorporation and Our Amended and Restated Bylaws

Certain provisions of Delaware law and certain provisions that will be included in our amended and restated certificate of incorporation and amended and restated bylaws summarized below may be deemed to have an anti-takeover effect and may delay, deter or prevent a tender offer or takeover attempt that a stockholder might consider to be in its best interests, including attempts that might result in a premium being paid over the market price for the shares held by stockholders.

Preferred Stock

Our amended and restated certificate of incorporation will contain provisions that permit our board of directors to issue, without any further vote or action by the stockholders, shares of preferred stock in one or more series and, with respect to each such series, to fix the number of shares constituting the series and the designation of the series, the voting rights (if any) of the shares of the series and the powers, preferences or relative, participation, optional and other special rights, if any, and any qualifications, limitations or restrictions, of the shares of such series.

Classified Board

Our amended and restated certificate of incorporation will provide that our board of directors is divided into three classes, designated Class I, Class II and Class III. Each class will be an equal number of directors, as nearly as possible, consisting of one third of the total number of directors constituting the entire board of directors. The term of initial Class I directors shall terminate on the date of the 2022 annual meeting, the term of the initial Class II directors shall terminate on the date of the 2023 annual meeting, and the term of the initial Class III directors shall terminate on the date of the 2024 annual meeting. At each annual meeting of stockholders beginning in 2022, the class of directors whose term expires at that annual meeting will be subject to reelection for a three-year term.

Removal of Directors

Our amended and restated certificate of incorporation will provide that stockholders may only remove a director for cause by a vote of no less than a majority of the voting power of the issued and outstanding capital stock of the Company entitled to vote in the election of directors.

Director Vacancies

Our amended and restated certificate of incorporation will authorize only our board of directors to fill vacant directorships.

No Cumulative Voting

Our amended and restated certificate of incorporation will provide that stockholders do not have the right to cumulate votes in the election of directors.

Special Meetings of Stockholders

Our amended and restated certificate of incorporation and amended and restated bylaws will provide that, except as otherwise required by law, special meetings of the stockholders may be called only by the chair of our board of directors, by our chief executive officer or president, or by the board of directors acting pursuant to a resolution adopted by a majority of the board.

Advance Notice Procedures for Director Nominations

Our amended and restated bylaws will provide that stockholders seeking to nominate candidates for election as directors at an annual or special meeting of stockholders must provide timely notice thereof in writing. To be timely, a stockholder's notice generally will have to be delivered to and received at our principal executive offices before notice of the meeting is issued by the secretary of the Company, with such notice being served not less than 90 nor more than 120 days before the meeting. Although the amended and restated bylaws will not give the board of directors the power to approve or disapprove stockholder nominations of candidates to be elected at an annual meeting, the amended and restated bylaws may have the effect of precluding the conduct of certain business at a meeting if the proper procedures are not followed or may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect its own slate of directors or otherwise attempting to obtain control of the company. The stockholder's notice must also include items described in our amended and restated bylaws. Any stockholder nominee must also provide the information and make the representations as required by our amended and restated bylaws.

Action by Written Consent

Our amended and restated certificate of incorporation and amended and restated bylaws will provide that any action to be taken by the stockholders must be effected at a duly called annual or special meeting of stockholders and may not be effected by written consent.

Amending our Certificate of Incorporation and Bylaws

Our amended and restated certificate of incorporation may be amended or altered in any manner provided by the Delaware General Corporation Law (DGCL). Certain amendments to our amended and restated certificate of incorporation will require the approval of a majority of our board of directors and stockholders holding two-thirds of the voting power of our then outstanding capital stock. Our amended and restated bylaws may be adopted, amended, altered or repealed by stockholders only upon approval of at least majority of the voting power of all the then outstanding shares of the common stock, except for any amendment of the above provisions and others, which would require the approval of a two-thirds majority of our then outstanding common stock. Additionally, our

amended and restated certificate of incorporation will provide that our bylaws may be amended, altered or repealed by the affirmative vote of the majority of our board of directors.

Authorized but Unissued Shares

Our authorized but unissued shares of common stock and preferred stock will be available for future issuances without stockholder approval, except as required by the listing standards of Nasdaq, and could be utilized for a variety of corporate purposes, including future offerings to raise additional capital, acquisitions and employee benefit plans. The existence of authorized but unissued and unreserved common stock and preferred stock could render more difficult or discourage an attempt to obtain control of the company by means of a proxy contest, tender offer, merger or otherwise.

Exclusive Jurisdiction

Our amended and restated bylaws will provide that, unless we consent to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for any derivative action or proceeding brought on our behalf, any action asserting a claim of breach of fiduciary duty, any action asserting a claim arising pursuant to the DGCL, any action regarding our amended and restated certificate of incorporation or amended and restated bylaws, or any action asserting a claim against us that is governed by the internal affairs doctrine. This provision would not apply to suits brought to enforce a duty or liability created by the Exchange Act or any other claim for which the U.S. federal courts have exclusive jurisdiction. Our amended and restated bylaws further provide that the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. Any person or entity purchasing or otherwise acquiring any interest in our securities shall be deemed to have notice of and consented to these provisions. Although we believe these provisions benefit us by providing increased consistency in the application of law for the specified types of actions and proceedings, the provisions may have the effect of discouraging lawsuits against us or our directors and officers. There is uncertainty as to whether a court would enforce such provisions, and the enforceability of similar choice of forum provisions in other companies' charter documents has been challenged in legal proceedings. We also note that stockholders cannot waive compliance (or consent to noncompliance) with the federal securities laws and the rules and regulations thereunder. See the section titled "Risk Factors - Our amended and restated bylaws designate a state or federal court located within the State of Delaware as the exclusive forum for substantially all disputes between us and our stockholders, and also provide that the federal district courts will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act, each of which could limit our stockholders' ability to choose the judicial forum for disputes with us or our directors, officers, stockholders, or employees."

Business Combinations with Interested Stockholders

We are governed by Section 203 of the DGCL. Subject to certain exceptions, Section 203 of the DGCL prohibits a public Delaware corporation from engaging in a business combination (as defined in such section) with an "interested stockholder" (defined generally as any person who beneficially owns 15% or more of the outstanding voting stock of such corporation or any person affiliated with such person) for a period of three years following the time that such stockholder became an interested stockholder, unless (i) prior to such time the board of directors of such corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder; (ii) upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of such corporation at the time the transaction commenced (excluding for purposes of determining the voting stock of such corporation outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned (a) by persons who are directors and also officers of such corporation and (b) by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer); or (iii) at or subsequent to such time the business combination is approved by the board of directors of such corporation and authorized at a meeting of stockholders (and not by written consent) by the affirmative vote of at least 66 2/3% of the outstanding voting stock of such corporation not owned by the interested stockholder.

Our amended and restated certificate of incorporation and our amended and restated bylaws will provide that we must indemnify our directors and officers to the fullest extent authorized by the DGCL. We are expressly authorized to, and do, carry directors' and officers' insurance providing coverage for our directors, officers and certain

employees for some liabilities. We believe that these indemnification provisions and insurance are useful to attract and retain qualified directors and executive officers.

The limitation on liability and indemnification provisions in our certificate of incorporation and bylaws may discourage stockholders from bringing a lawsuit against directors for breach of their fiduciary duty. These provisions may also have the effect of reducing the likelihood of derivative litigation against directors and officers, even though such an action, if successful, might otherwise benefit us and our stockholders. In addition, your investment may be adversely affected to the extent we pay the costs of settlement and damage awards against directors and officers pursuant to these indemnification provisions.

Listing

We have been approved to list our common stock on the Nasdaq Global Select Market under the symbol “DNAY.”

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Co. LLC. The transfer agent and registrar’s address is 6201 15th Avenue, Brooklyn, New York 11219.

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, there has been no public market for our common stock, and although our common stock has been approved for listing on the Nasdaq Global Select Market, we cannot assure investors that there will be an active public market for our common stock following this offering. We cannot predict what effect, if any, sales of our shares in the public market or the availability of shares for sale will have on the market price of our common stock. Future sales of substantial amounts of common stock in the public market, including shares issued upon exercise of outstanding options, or the perception that such sales may occur, however, could adversely affect the market price of our common stock and also could adversely affect our future ability to raise capital through the sale of our common stock or other equity-related securities of ours at times and prices we believe appropriate.

Upon completion of this offering, based on our shares outstanding as of March 31, 2021 and after giving effect to the conversion of all outstanding shares of our convertible preferred stock, 28,228,934 shares of our common stock will be outstanding, or 29,228,933 shares of common stock if the underwriters exercise their option to purchase additional shares in full. All of the shares of common stock expected to be sold in this offering will be freely tradable without restriction or further registration under the Securities Act unless held by our "affiliates," as that term is defined in Rule 144 under the Securities Act. The remaining outstanding shares of our common stock will be deemed "restricted securities" as that term is defined under Rule 144. Restricted securities may be sold in the public market only if their offer and sale is registered under the Securities Act or if the offer and sale of those securities qualify for an exemption from registration, including exemptions provided by Rules 144 and 701 under the Securities Act, which are summarized below.

As a result of the lock-up agreements and market stand-off provisions described below and the provisions of Rules 144 or 701, the shares of our common stock that will be deemed "restricted securities" will be available for sale in the public market following the completion of this offering as follows:

- 6,666,665 shares will be eligible for sale on the date of this prospectus; and
- 21,562,269 shares will be eligible for sale upon expiration of the lock-up agreements and market stand-off provisions described below, following the date that is 180 days after the date of this prospectus.

Lock-up Agreements and Market Stand-Off Agreements

Our officers, directors and the holders of substantially all of our capital stock and options have entered into market stand-off agreements with us and have entered into or will enter into lock-up agreements with the underwriters, subject to certain exceptions, not to dispose of or hedge any of their common stock or securities convertible into or exchangeable for shares of common stock during the period from the date of this prospectus continuing through the date 180 days after the date of this prospectus, except with the prior consent of Jefferies LLC and Cowen and Company, LLC. See the section titled "Underwriting" for additional information.

Rule 144

Rule 144, as currently in effect, generally provides that, once we have been subject to the public company reporting requirements of Section 13 or Section 15(d) of the Exchange Act for at least 90 days, a stockholder who is not deemed to have been one of our affiliates at any time during the preceding 90 days and who has beneficially owned the shares of our capital stock proposed to be sold for at least six months is entitled to sell such shares in reliance upon Rule 144 without complying with the volume limitation, manner of sale or notice conditions of Rule 144. If such stockholder has beneficially owned the shares of our capital stock proposed to be sold for at least one year, then such person is entitled to sell such shares in reliance upon Rule 144 without complying with any of the other conditions of Rule 144.

Rule 144 also provides that a stockholder who is deemed to have been one of our affiliates at any time during the preceding 90 days and who has beneficially owned the shares of our common stock proposed to be sold for at least

six months is entitled to sell such shares in reliance upon Rule 144 within any three month period beginning 90 days after the date of this prospectus a number of such shares that does not exceed the greater of the following:

- 1% of the number of shares of our capital stock then outstanding, which will equal 282,289 shares immediately after the completion of this offering, assuming no exercise by the underwriters of their option to purchase additional shares; or
- the average weekly trading volume of our common stock during the four calendar weeks preceding the filing of a notice on Form 144 with respect to such sale.

Sales of our capital stock made in reliance upon Rule 144 by a stockholder who is deemed to have been one of our affiliates at any time during the preceding 90 days are also subject to the current public information, manner of sale and notice conditions of Rule 144.

Rule 701

Rule 701 generally provides that, once we have been subject to the public company reporting requirements of Section 13 or Section 15(d) of the Exchange Act for at least 90 days, a stockholder who purchased shares of our common stock pursuant to a written compensatory benefit plan or contract and who is not deemed to have been one of our affiliates at any time during the preceding 90 days may sell such shares in reliance upon Rule 144 without complying with the current public information or holding period conditions of Rule 144. Rule 701 also provides that a stockholder who purchased shares of our common stock pursuant to a written compensatory benefit plan or contract and who is deemed to have been one of our affiliates during the preceding 90 days may sell such shares under Rule 144 without complying with the holding period condition of Rule 144. However, all stockholders who purchased shares of our common stock pursuant to a written compensatory benefit plan or contract are required to wait until 90 days after the date of this prospectus before selling such shares pursuant to Rule 701.

Registration Rights

After the completion of this offering, the holders of up to 15,079,329 shares of our common stock will be entitled to certain rights with respect to the registration of such shares under the Securities Act. The registration of these shares of our common stock under the Securities Act would result in these shares becoming eligible for sale in the public market without restriction under the Securities Act immediately upon the effectiveness of such registration. See the section titled “Description of Capital Stock—Registration Rights” for a description of these registration rights.

Registration Statement

After the completion of this offering, we intend to file a registration statement on Form S-8 under the Securities Act to register all of the shares of our common stock subject to equity awards outstanding or reserved for issuance under our equity compensation plans. The shares of our common stock covered by such registration statement will be eligible for sale in the public market without restriction under the Securities Act immediately upon the effectiveness of such registration statement, subject to vesting restrictions, the conditions of Rule 144 applicable to affiliates, and any applicable market stand-off agreements and lock-up agreements. See the section titled “Executive Compensation—Employee Benefit and Stock Plans” for a description of our equity compensation plans.

MATERIAL U.S. FEDERAL INCOME TAX CONSIDERATIONS FOR NON-U.S. HOLDERS OF OUR COMMON STOCK

The following is a summary of the material U.S. federal income tax considerations of the ownership and disposition of our common stock acquired in this offering by a "non-U.S. holder" (as defined below), but does not purport to be a complete analysis of all the potential tax considerations relating thereto. This summary is based upon the provisions of the Internal Revenue Code of 1986, as amended (the Code), Treasury Regulations promulgated thereunder, administrative rulings and judicial decisions, all as of the date hereof. These authorities may be changed, possibly retroactively, so as to result in U.S. federal income tax consequences different from those set forth below. We have not sought, and do not intend to seek, any ruling from the Internal Revenue Service (the IRS), with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS or a court will agree with such statements and conclusions.

This summary also does not address the tax considerations arising under the laws of any non-U.S., state or local jurisdiction, under U.S. federal gift and estate tax rules or under any applicable tax treaty. In addition, this discussion does not address any tax considerations applicable to an investor's particular circumstances or investors that may be subject to special tax rules, including, without limitation:

- banks, insurance companies, regulated investment companies, real estate investment trusts or other financial institutions;
- tax-exempt organizations or accounts;
- pension plans and tax-qualified retirement plans;
- controlled foreign corporations and passive foreign investment companies and their stockholders, and corporations that accumulate earnings to avoid U.S. federal income tax;
- brokers or dealers in securities or currencies;
- traders in securities that elect to use a mark-to-market method of accounting for their securities holdings;
- persons that own, or are deemed to own, more than 5% of our capital stock (except to the extent specifically set forth below);
- U.S. expatriates and certain other former citizens or long-term residents of the United States;
- partnerships (or entities or arrangements classified as such for U.S. federal income tax purposes), other pass-through entities and investors therein;
- persons subject to the alternative minimum tax;
- persons who hold our common stock as a position in a hedging transaction, "straddle," "conversion transaction" or other risk reduction transaction;
- persons who hold or receive our common stock pursuant to the exercise of any option or otherwise as compensation;
- persons who do not hold our common stock as a capital asset within the meaning of Section 1221 of the Code (generally, property held for investment); or
- persons deemed to sell our common stock under the constructive sale provisions of the Code.

In addition, if a partnership, entity or arrangement classified as a partnership or flow-through entity for U.S. federal income tax purposes holds our common stock, the tax treatment of a partner generally will depend on the status of the partner and upon the activities of the partnership or other entity. A partner in a partnership or other such entity that will hold our common stock should consult his, her or its own tax advisor regarding the tax consequences of the ownership and disposition of our common stock through a partnership or other such entity, as applicable.

You are urged to consult your tax advisor with respect to the application of the U.S. federal income tax laws to your particular situation, as well as any tax consequences of the purchase, ownership and disposition of our common stock arising under the U.S. federal gift or estate tax rules or under the laws of any state, local, non-U.S. or other taxing jurisdiction or under any applicable tax treaty.

Non-U.S. Holder Defined

For purposes of this discussion, you are a "non-U.S. holder" if you are a beneficial owner of our common stock that, for U.S. federal income tax purposes, is not

- a partnership (including any entity or arrangement treated as a partnership and the equity holders therein);
- an individual who is a citizen or resident of the United States;
- a domestic corporation for U.S. federal income tax purposes;
- an estate whose income is subject to U.S. federal income tax regardless of its source; or
- a trust (i) whose administration is subject to the primary supervision of a U.S. court and that has one or more U.S. persons who have the authority to control all substantial decisions of the trust or (ii) that has made a valid election under applicable Treasury Regulations to be treated as a U.S. person.

Distributions

As described in the section titled "Dividend Policy," we have never declared or paid cash dividends on our capital stock, and we do not anticipate paying any cash dividends following the completion of this offering. However, if we do make distributions on our common stock, those payments will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. To the extent those distributions exceed both our current and our accumulated earnings and profits, the excess will, first, constitute a return of capital and reduce your basis in our common stock (determined separately with respect to each share of our common stock), but not below zero, and thereafter will be treated as gain from the sale of stock.

Subject to the discussions below on effectively connected income and in the sections titled "Backup Withholding and Information Reporting" and "Foreign Account Tax Compliance Act (FATCA)," any dividend paid to you generally will be subject to U.S. federal withholding tax either at a rate of 30% of the gross amount of the dividend or such lower rate as may be specified by an applicable income tax treaty between the United States and your country of residence. In order to qualify for a reduced treaty rate, you must provide us with a properly executed IRS Form W-8BEN or W-8BEN-E or other appropriate version of IRS Form W-8 certifying that you are eligible for the applicable treaty benefits. If you are eligible for a reduced rate of U.S. federal withholding tax pursuant to an income tax treaty, you may obtain a refund of any excess amounts withheld by filing an appropriate claim for refund with the IRS. If you hold our common stock through a financial institution or other agent acting on the non-U.S. holder's behalf, you will be required to provide appropriate documentation to the agent, which then will be required to provide certification to us or our paying agent, either directly or through other intermediaries.

Dividends received by you that are treated as effectively connected with your conduct of a U.S. trade or business (and, if required by an applicable income tax treaty, are attributable to a permanent establishment or fixed base maintained by you in the United States) are generally exempt from U.S. federal withholding tax, subject to the discussion below in the sections titled "Backup Withholding and Information Reporting" and "Foreign Account Tax Compliance Act (FATCA)." In order to obtain this exemption, you must provide us with a properly executed IRS Form W-8ECI or other appropriate form properly certifying such exemption. Such effectively connected dividends, although not subject to U.S. federal withholding tax, are taxed at the same graduated rates applicable to U.S. persons, net of certain deductions and credits, subject to an applicable income tax treaty providing otherwise. In addition, if you are a corporate non-U.S. holder, dividends you receive that are effectively connected with your conduct of a U.S. trade or business (and, if an income tax treaty applies, are attributable to a permanent establishment or fixed based maintained by you in the United States) may also be subject to a branch profits tax at a rate of 30% or such lower rate as may be specified by an applicable income tax treaty between the United States and your country of residence. You should consult your tax advisor regarding the tax consequences of the ownership and disposition of our common stock, including any applicable tax treaties that may provide for different rules.

Gain on Disposition of Common Stock

Subject to the discussion in the section titled “Backup Withholding and Information Reporting,” you generally will not be subject to U.S. federal income tax on any gain realized upon the sale or other disposition of our common stock unless:

- the gain is effectively connected with your conduct of a U.S. trade or business (and, if an applicable income tax treaty so provides, the gain is attributable to a permanent establishment or fixed base maintained by you in the United States);
- you are an individual who is present in the United States for a period or periods aggregating 183 days or more during the calendar year in which the sale or disposition occurs and certain other conditions are met; or
- our common stock constitutes a United States real property interest by reason of our status as a “United States real property holding corporation,” (or USRPHC), for U.S. federal income tax purposes at any time within the shorter of the five-year period preceding your disposition of, or your holding period for, our common stock, unless our common stock is regularly traded on an established securities market and you hold no more than 5% of our outstanding common stock, directly, indirectly and constructively, at all times, during the shorter of the five-year period ending on the date of the taxable disposition or your holding period for our common stock.

We believe that we are not currently and will not become a USRPHC for U.S. federal income tax purposes, and the remainder of this discussion so assumes. However, because the determination of whether we are a USRPHC depends on the fair market value of our U.S. real property relative to the fair market value of our U.S. and worldwide real property plus our other business assets, there can be no assurance that we will not become a USRPHC in the future. If we are USRPHC and either our common stock is not regularly traded on an established securities market or you hold, or are treated as holding, more than 5% of our outstanding common stock, directly or indirectly, during the applicable testing period, you will generally be taxed on any gain in the same manner as gain that is effectively connected with the conduct of a U.S. trade or business, except that the branch profits tax generally will not apply. If we are a USRPHC and our common stock is not regularly traded on an established securities market, your proceeds received on the disposition of shares will also generally be subject to withholding at a rate of 15%. You are encouraged to consult your own tax advisors regarding the possible consequences to you if we are, or were to become, a USRPHC.

If you are a non-U.S. holder described in the first bullet above, you will be required to pay tax on the gain derived from the sale (net of certain deductions and credits) under regular U.S. federal income tax rates, and a corporate non-U.S. holder described in the first bullet above also may be subject to the branch profits tax at a 30% rate, or such lower rate as may be specified by an applicable income tax treaty. If you are an individual non-U.S. holder described in the second bullet above, you will be subject to tax on such gain at 30% (or such lower rate specified by an applicable income tax treaty) on the gain derived from the sale, which gain may be offset by U.S. source capital losses for the year, provided you have timely filed U.S. federal income tax returns with respect to such losses. You should consult your tax advisor regarding any applicable income tax or other treaties that may provide for different rules.

Backup Withholding and Information Reporting

Generally, we must report annually to the IRS the amount of dividends paid to you, your name and address and the amount of tax withheld, if any. A similar report will be sent to you. Pursuant to applicable income tax treaties or other agreements, the IRS may make these reports available to tax authorities in your country of residence.

Payments of dividends on or of proceeds from the disposition of our common stock made to you may also be subject to backup withholding at a current rate of 24% unless you establish an exemption, for example, by properly certifying your non-U.S. status on a properly completed IRS Form W-8BEN or W-8BEN-E or another appropriate version of IRS Form W-8. Notwithstanding the foregoing, backup withholding may apply if either we or our paying agent has actual knowledge, or reason to know, that you are a U.S. person.

Backup withholding is not an additional tax; rather, the U.S. federal income tax liability of persons subject to backup withholding will be reduced by the amount of tax withheld. If withholding results in an overpayment of taxes, a

refund or credit may generally be obtained from the IRS, if you provide the required information to the IRS in a timely manner.

Foreign Account Tax Compliance Act (FATCA)

The Foreign Account Tax Compliance Act, Treasury Regulations issued thereunder and official IRS guidance (collectively FATCA), generally impose a U.S. federal withholding tax of 30% on dividends on, and, subject to the discussion of certain proposed Treasury Regulations below, the gross proceeds from a sale or other disposition of our common stock, paid to a "foreign financial institution" (as specially defined under these rules), unless such institution enters into an agreement with the U.S. government to, among other things, withhold on certain payments and to collect and provide to the U.S. tax authorities substantial information regarding the U.S. account holders of such institution (which includes certain equity and debt holders of such institution, as well as certain account holders that are foreign entities with U.S. owners) or otherwise establishes an exemption. FATCA also generally imposes a U.S. federal withholding tax of 30% on dividends on and, subject to the discussion of certain proposed Treasury Regulations below, the gross proceeds from a sale or other disposition of our common stock paid to a "non-financial foreign entity" (as specially defined under these rules) unless such entity provides the withholding agent with a certification identifying the substantial direct and indirect U.S. owners of the entity, certifies that it does not have any substantial U.S. owners, or otherwise establishes an exemption. The withholding tax will apply regardless of whether the payment otherwise would be exempt from U.S. nonresident and backup withholding tax, including under the other exemptions described above. Under certain circumstances, a non-U.S. holder might be eligible for refunds or credits of such taxes. An intergovernmental agreement between the United States and an applicable foreign country may modify the requirements described in this section. Prospective investors should consult with their own tax advisors regarding the application of FATCA withholding to their investment in, and ownership and disposition of, our common stock.

The Treasury Secretary has issued proposed Treasury Regulations, which, if finalized in their present form, would eliminate withholding under FATCA with respect to payment of gross proceeds from a sale or other disposition of our common stock. In its preamble to such proposed Treasury Regulations, the U.S. Treasury stated that taxpayers may generally rely on the proposed Treasury Regulations until final regulations are issued.

The preceding discussion of U.S. federal tax considerations is for general information only. It is not tax advice to investors in their particular circumstances. Each prospective investor should consult its own tax advisor regarding the particular U.S. federal, state and local and non-U.S. tax consequences of purchasing, holding and disposing of our common stock, including the consequences of any proposed change in applicable laws.

UNDERWRITING

Subject to the terms and conditions set forth in the underwriting agreement dated June 17, 2021, among us and Jefferies LLC and Cowen and Company, LLC, as the representatives of the underwriters named below and the joint book-running managers of this offering, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the respective number of shares of common stock shown opposite its name below:

Underwriter	Number of Shares
Jefferies LLC	3,033,333
Cowen and Company, LLC	2,573,333
KeyBanc Capital Markets Inc.	1,059,999
Total	6,666,665

The underwriting agreement provides that the obligations of the several underwriters are subject to certain conditions precedent such as the receipt by the underwriters of officers' certificates and legal opinions and approval of certain legal matters by their counsel. The underwriting agreement provides that the underwriters will purchase all of the shares of common stock if any of them are purchased. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the non-defaulting underwriters may be increased or the underwriting agreement may be terminated. We have agreed to indemnify the underwriters and certain of their controlling persons against certain liabilities, including liabilities under the Securities Act, and to contribute to payments that the underwriters may be required to make in respect of those liabilities.

The underwriters have advised us that, following the completion of this offering, they currently intend to make a market in the common stock as permitted by applicable laws and regulations. However, the underwriters are not obligated to do so, and the underwriters may discontinue any market-making activities at any time without notice in their sole discretion. Accordingly, no assurance can be given as to the liquidity of the trading market for the common stock, that you will be able to sell any of the common stock held by you at a particular time or that the prices that you receive when you sell will be favorable.

The underwriters are offering the shares of common stock subject to their acceptance of the shares of common stock from us and subject to prior sale. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part. In addition, the underwriters have advised us that they do not intend to confirm sales to any account over which they exercise discretionary authority.

Commission and Expenses

The underwriters have advised us that they propose to offer the shares of common stock to the public at the initial public offering price set forth on the cover page of this prospectus and to certain dealers, which may include the underwriters, at that price less a concession not in excess of $0.672 per share of common stock. After the offering, the initial public offering price and concession to dealers may be reduced by the representatives. No such reduction will change the amount of proceeds to be received by us as set forth on the cover page of this prospectus.

The following table shows the public offering price, the underwriting discounts and commissions that we are to pay the underwriters and the proceeds, before expenses, to us in connection with this offering. Such amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	Per Share		Total	
	Without Option to Purchase Additional Shares	With Option to Purchase Additional Shares	Without Option to Purchase Additional Shares	With Option to Purchase Additional Shares
Public offering price	$ 16.00	$ 16.00	$ 106,666,640	$ 122,666,624
Underwriting discounts and commissions paid by us	$ 1.12	$ 1.12	$ 7,466,665	$ 8,586,664
Proceeds to us, before expenses	$ 14.88	$ 14.88	$ 99,199,975	$ 114,079,960

We estimate expenses payable by us in connection with this offering, other than the underwriting discounts and commissions referred to above, will be approximately $2.2 million. We also have agreed to reimburse the underwriters for up to $40,000 for their Financial Industry Regulatory Authority (FINRA) counsel fee. In accordance with FINRA Rule 5110, these reimbursed fees and expenses are deemed underwriting compensation for this offering.

Determination of Offering Price

Prior to this offering, there has not been a public market for our common stock. Consequently, the initial public offering price for our common stock was determined by negotiations between us and the representatives. Among the factors considered in these negotiations were prevailing market conditions, our financial information, market valuations of other companies that we and the underwriters believe to be comparable to us, estimates of our business potential, the present state of our development and other factors deemed relevant.

We offer no assurances that the initial public offering price will correspond to the price at which the common stock will trade in the public market subsequent to the offering or that an active trading market for the common stock will develop and continue after the offering.

Listing

We have been approved to have our common stock listed on the Nasdaq Global Select Market under the trading symbol “DNAY”.

Stamp Taxes

If you purchase shares of common stock offered in this prospectus, you may be required to pay stamp taxes and other charges under the laws and practices of the country of purchase, in addition to the offering price listed on the cover page of this prospectus.

Option to Purchase Additional Shares

We have granted the underwriters an option, exercisable for 30 days from the date of this prospectus, to purchase, from time to time, in whole or in part, up to an aggregate of 999,999 shares from us at the public offering price set forth on the cover page of this prospectus, less underwriting discounts and commissions. If the underwriters exercise this option, each underwriter will be obligated, subject to specified conditions, to purchase a number of additional shares proportionate to that underwriter’s initial purchase commitment as indicated in the table above. This option may be exercised only if the underwriters sell more shares than the total number set forth on the cover page of this prospectus.

No Sales of Similar Securities

We, our officers, directors and holders of all or substantially all our outstanding common stock or of securities convertible into or exchangeable or exercisable for shares of our common stock have agreed, subject to specified exceptions, not to directly or indirectly:

- sell, offer, contract or grant any option to sell (including any short sale), pledge, transfer, establish an open “put equivalent position” within the meaning of Rule 16a-l(h) under the Exchange Act, or
- otherwise dispose of any shares of common stock, options or warrants to acquire shares of common stock, or securities exchangeable or exercisable for or convertible into shares of common stock currently or hereafter owned either of record or beneficially, or

- publicly announce an intention to do any of the foregoing for a period of 180 days after the date of this prospectus without the prior written consent of Jefferies LLC and Cowen and Company, LLC.

This restriction terminates after the close of trading of the common stock on and including the 180th day after the date of this prospectus.

Jefferies LLC and Cowen and Company, LLC may, in their sole discretion and at any time or from time to time before the termination of the 180-day period release all or any portion of the securities subject to lock-up agreements. There are no existing agreements between the underwriters and any of our shareholders who will execute a lock-up agreement, providing consent to the sale of shares prior to the expiration of the lock-up period.

Stabilization

The underwriters have advised us that they, pursuant to Regulation M under the Exchange Act, and certain persons participating in the offering may engage in short sale transactions, stabilizing transactions, syndicate covering transactions or the imposition of penalty bids in connection with this offering. These activities may have the effect of stabilizing or maintaining the market price of the common stock at a level above that which might otherwise prevail in the open market. Establishing short sales positions may involve either “covered” short sales or “naked” short sales.

“Covered” short sales are sales made in an amount not greater than the underwriters’ option to purchase additional shares of our common stock in this offering. The underwriters may close out any covered short position by either exercising their option to purchase additional shares of our common stock or purchasing shares of our common stock in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the option to purchase additional shares.

“Naked” short sales are sales in excess of the option to purchase additional shares of our common stock. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the shares of our common stock in the open market after pricing that could adversely affect investors who purchase in this offering.

A stabilizing bid is a bid for the purchase of shares of common stock on behalf of the underwriters for the purpose of fixing or maintaining the price of the common stock. A syndicate covering transaction is the bid for or the purchase of shares of common stock on behalf of the underwriters to reduce a short position incurred by the underwriters in connection with the offering. Similar to other purchase transactions, the underwriters’ purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. A penalty bid is an arrangement permitting the underwriters to reclaim the selling concession otherwise accruing to a syndicate member in connection with the offering if the common stock originally sold by such syndicate member are purchased in a syndicate covering transaction and therefore have not been effectively placed by such syndicate member.

Neither we, nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. The underwriters are not obligated to engage in these activities and, if commenced, any of the activities may be discontinued at any time.

The underwriters may also engage in passive market making transactions in our common stock on the Nasdaq Global Select Market in accordance with Rule 103 of Regulation M during a period before the commencement of offers or sales of shares of our common stock in this offering and extending through the completion of distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. However, if all independent bids are lowered below the passive market maker’s bid, that bid must then be lowered when specified purchase limits are exceeded.

Electronic Distribution

A prospectus in electronic format may be made available by e-mail or on the web sites or through online services maintained by one or more of the underwriters or their affiliates. In those cases, prospective investors may view

offering terms online and may be allowed to place orders online. The underwriters may agree with us to allocate a specific number of shares of common stock for sale to online brokerage account holders. Any such allocation for online distributions will be made by the underwriters on the same basis as other allocations. Other than the prospectus in electronic format, the information on the underwriters' web sites and any information contained in any other web site maintained by any of the underwriters is not part of this prospectus, has not been approved or endorsed by us or the underwriters and should not be relied upon by investors.

Other Activities and Relationships

The underwriters and certain of their affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. The underwriters and certain of their affiliates have, from time to time, performed, and may in the future perform, various commercial and investment banking and financial advisory services for us and our affiliates, for which they received or will receive customary fees and expenses.

In the ordinary course of their various business activities, the underwriters and certain of their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities or instruments issued by us and our affiliates. If the underwriters or their respective affiliates have a lending relationship with us, they routinely hedge their credit exposure to us consistent with their customary risk management policies. The underwriters and their respective affiliates may hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in our securities or the securities of our affiliates, including potentially the common stock offered hereby. Any such short positions could adversely affect future trading prices of the common stock offered hereby. The underwriters and certain of their respective affiliates may also communicate independent investment recommendations, market color or trading ideas or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long or short positions in such securities and instruments.

Disclaimers About Non-U.S. Jurisdictions

Canada

Resale Restrictions

The distribution of the securities in Canada is being made only in the provinces of Ontario, Quebec, Alberta, British Columbia, Manitoba, New Brunswick and Nova Scotia on a private placement basis exempt from the requirement that we prepare and file a prospectus with the securities regulatory authorities in each province where trades of these securities are made. Any resale of the securities in Canada must be made under applicable securities laws which may vary depending on the relevant jurisdiction, and which may require resales to be made under available statutory exemptions or under a discretionary exemption granted by the applicable Canadian securities regulatory authority. Purchasers are advised to seek legal advice prior to any resale of the securities.

Representations of Canadian Purchasers By purchasing the securities in Canada and accepting delivery of a purchase confirmation, a purchaser is representing to us and the dealer from whom the purchase confirmation is received that:

- the purchaser is entitled under applicable provincial securities laws to purchase the securities without the benefit of a prospectus qualified under those securities laws as it is an "accredited investor" as defined under National Instrument 45-106 – Prospectus Exemptions or Section 73.3(1) of the Securities Act (Ontario), as applicable,
- the purchaser is a "permitted client" as defined in National Instrument 31-103 - Registration Requirements, Exemptions and Ongoing Registrant Obligations,
- where required by law, the purchaser is purchasing as principal and not as agent, and
- the purchaser has reviewed the text above under Resale Restrictions.

Conflicts of Interest

Canadian purchasers are hereby notified that certain of the underwriters are relying on the exemption set out in section 3A.3 or 3A.4, if applicable, of National Instrument 33-105 – Underwriting Conflicts from having to provide certain conflict of interest disclosure in this document.

Statutory Rights of Action

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if the prospectus (including any amendment thereto) such as this document contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser of these securities in Canada should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Enforcement of Legal Rights

All of our directors and officers as well as the experts named herein may be located outside of Canada and, as a result, it may not be possible for Canadian purchasers to effect service of process within Canada upon us or those persons. All or a substantial portion of our assets and the assets of those persons may be located outside of Canada and, as a result, it may not be possible to satisfy a judgment against us or those persons in Canada or to enforce a judgment obtained in Canadian courts against us or those persons outside of Canada.

Taxation and Eligibility for Investment

Canadian purchasers of the securities should consult their own legal and tax advisors with respect to the tax consequences of an investment in the securities in their particular circumstances and about the eligibility of the securities for investment by the purchaser under relevant Canadian legislation.

Australia

This prospectus is not a disclosure document for the purposes of Australia's Corporations Act 2001 (Cth) of Australia (Corporations Act), has not been lodged with the Australian Securities & Investments Commission and is only directed to the categories of exempt persons set out below. Accordingly, if you receive this prospectus in Australia:

You confirm and warrant that you are either:

- a "sophisticated investor" under section 708(8)(a) or (b) of the Corporations Act;
- a "sophisticated investor" under section 708(8)(c) or (d) of the Corporations Act and that you have provided an accountant's certificate to the company which complies with the requirements of section 708(8)(c)(i) or (ii) of the Corporations Act and related regulations before the offer has been made;
- a person associated with the company under Section 708(12) of the Corporations Act; or
- a "professional investor" within the meaning of section 708(11)(a) or (b) of the Corporations Act.

To the extent that you are unable to confirm or warrant that you are an exempt sophisticated investor, associated person or professional investor under the Corporations Act any offer made to you under this prospectus is void and incapable of acceptance.

You warrant and agree that you will not offer any of the securities issued to you pursuant to this prospectus for resale in Australia within 12 months of those securities being issued unless any such resale offer is exempt from the requirement to issue a disclosure document under section 708 of the Corporations Act.

European Economic Area

In relation to each Member State of the European Economic Area (Relevant State), no shares have been offered or will be offered pursuant to the offering to the public in that Relevant State prior to the publication of a prospectus in relation to the shares which have been approved by the competent authority in that Relevant State or, where appropriate, approved in another Relevant State and notified to the competent authority in that Relevant State, all in

accordance with the Prospectus Regulation, except that the shares may be offered to the public in that Relevant State at any time:

(a) to any legal entity which is a "qualified investor" as defined under Article 2 of the Prospectus Regulation;
(b) to fewer than 150 natural or legal persons (other than qualified investors as defined under Article 2 of the Prospectus Regulation), subject to obtaining the prior consent of representatives for any such offer; or
(c) in any other circumstances falling within Article 1(4) of the Prospectus Regulation,

provided that no such offer of the shares shall require us or any of the representatives to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation. For the purposes of this provision, the expression "offer to the public" in relation to the shares in any Relevant State means the communication in any form and by any means of sufficient information on the terms of the offer and any shares to be offered so as to enable an investor to decide to purchase or subscribe for any shares, and the expression "Prospectus Regulation" means Regulation (EU) 2017/1129.

MiFID II Product Governance

Any distributor subject to MiFID II that is offering, selling or recommending the shares is responsible for undertaking its own target market assessment in respect of the shares and determining its own distribution channels for the purposes of the MiFID product governance rules under Commission Delegated Directive (EU) 2017/593 (Delegated Directive). Neither we nor the underwriters make any representations or warranties as to a distributor's compliance with the Delegated Directive.

Hong Kong

No securities have been offered or sold, and no securities may be offered or sold, in Hong Kong, by means of any document, other than to persons whose ordinary business is to buy or sell shares or debentures, whether as principal or agent; or to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong (SFO) and any rules made under that Ordinance; or in other circumstances which do not result in the document being a "prospectus" as defined in the Companies Ordinance (Cap. 32) of Hong Kong (CO) or which do not constitute an offer or invitation to the public for the purpose of the CO or the SFO. No document, invitation or advertisement relating to the securities has been issued or may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted under the securities laws of Hong Kong) other than with respect to securities which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the SFO and any rules made under that Ordinance.

This prospectus has not been registered with the Registrar of Companies in Hong Kong. Accordingly, this prospectus may not be issued, circulated or distributed in Hong Kong, and the securities may not be offered for subscription to members of the public in Hong Kong. Each person acquiring the securities will be required, and is deemed by the acquisition of the securities, to confirm that he is aware of the restriction on offers of the securities described in this prospectus and the relevant offering documents and that he is not acquiring, and has not been offered any securities in circumstances that contravene any such restrictions.

Israel

This document does not constitute a prospectus under the Israeli Securities Law, 5728-1968 (the Israeli Securities Law), and has not been filed with or approved by the Israel Securities Authority. In Israel, this prospectus is being distributed only to, and is directed only at, and any offer of the shares is directed only at, (i) a limited number of persons in accordance with the Israeli Securities Law and (ii) investors listed in the first addendum (the Addendum), to the Israeli Securities Law, consisting primarily of joint investment in trust funds, provident funds, insurance companies, banks, portfolio managers, investment advisors, members of the Tel Aviv Stock Exchange, underwriters, venture capital funds, entities with equity in excess of NIS 50 million and "qualified individuals," each as defined in the Addendum (as it may be amended from time to time), collectively referred to as qualified investors (in each case, purchasing for their own account or, where permitted under the Addendum, for the accounts of their clients who are investors listed in the Addendum). Qualified investors are required to submit written confirmation that they fall within the scope of the Addendum, are aware of the meaning of same and agree to it.

Japan

The offering has not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948 of Japan, as amended (FIEL), and the underwriters will not offer or sell any securities, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the FIEL and any other applicable laws, regulations and ministerial guidelines of Japan.

Singapore

This prospectus has not been and will not be lodged or registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the securities may not be circulated or distributed, nor may the securities be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore (SFA), (ii) to a relevant person pursuant to Section 275(1), or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275, of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the securities are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or
- a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities (as defined in Section 239(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the securities pursuant to an offer made under Section 275 of the SFA except:

- to an institutional investor or to a relevant person defined in Section 275(2) of the SFA, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;
- where no consideration is or will be given for the transfer;
- where the transfer is by operation of law;
- as specified in Section 276(7) of the SFA; or
- as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore.

Switzerland

The securities may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange (SIX) or on any other stock exchange or regulated trading facility in Switzerland. This prospectus has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this prospectus nor any other offering or marketing material relating to the securities or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this prospectus nor any other offering or marketing material relating to the offering, the company or the securities have been or will be filed with or approved by any Swiss regulatory authority. In particular, this prospectus will not be filed with, and the offer of securities will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA, and the offer of securities has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes (CISA). The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of securities.

United Kingdom

No shares have been offered or will be offered pursuant to the offering to the public in the United Kingdom prior to the publication of a prospectus in relation to the shares which has been approved by the Financial Conduct Authority, except that the shares may be offered to the public in the United Kingdom at any time:

(a) to any legal entity which is a qualified investor as defined under Article 2 of the UK Prospectus Regulation;
(b) to fewer than 150 natural or legal persons (other than qualified investors as defined under Article 2 of the UK Prospectus Regulation), subject to obtaining the prior consent of the representatives for any such offer; or
(c) in any other circumstances falling within Section 86 of the Financial Services and Markets Act 2000 (FSMA),

provided that no such offer of the shares shall require us or any of the representatives to publish a prospectus pursuant to Section 85 of the FSMA or supplement a prospectus pursuant to Article 23 of the UK Prospectus Regulation. For the purposes of this provision, the expression an “offer to the public” in relation to the shares in the United Kingdom means the communication in any form and by any means of sufficient information on the terms of the offer and any shares to be offered so as to enable an investor to decide to purchase or subscribe for any shares and the expression “UK Prospectus Regulation” means Regulation (EU) 2017/1129 as it forms part of domestic law by virtue of the European Union (Withdrawal) Act 2018.

LEGAL MATTERS

The validity of the issuance of our common stock offered in this prospectus will be passed upon for us by Wilson Sonsini Goodrich & Rosati, Professional Corporation, San Diego, California. Covington & Burling LLP, New York, New York is counsel for the underwriters in connection with this offering.

EXPERTS

OUM & Co. LLP, our independent registered public accounting firm, has audited our consolidated financial statements at December 31, 2019 and 2020, and for the periods from March 8, 2019 (inception) to December 31, 2019 and from January 1, 2020 to December 31, 2020, as set forth in their report. We have included our consolidated financial statements in the prospectus and elsewhere in the registration statement in reliance on OUM & Co. LLP's report, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the shares of our common stock offered by this prospectus. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement, as permitted by the rules and regulations of the SEC. For further information with respect to us and our common stock, we refer you to the registration statement, including the exhibits filed as a part of the registration statement. Statements contained in this prospectus concerning the contents of any contract or any other document are not necessarily complete. If a contract or document has been filed as an exhibit to the registration statement, please see the copy of the contract or document that has been filed. Each statement in this prospectus relating to a contract or document filed as an exhibit is qualified in all respects by the filed exhibit. The SEC also maintains an Internet website that contains the registration statement of which this prospectus forms a part, as well as the exhibits thereto. These documents, along with future reports, proxy statements and other information about us, are available at the SEC's website, www.sec.gov.

As a result of this offering, we have become subject to the information and reporting requirements of the Exchange Act, and, in accordance with this law, will file periodic reports, proxy statements and other information with the SEC. These periodic reports, proxy statements and other information will be available for inspection and copying at the SEC's public reference facilities and the website of the SEC referred to above. We also maintain a website at www.codexdna.com where these materials are available. Upon the completion of this offering, you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. Information contained on, or that can be accessible through, our website is not a part of this prospectus and the inclusion of our website address in this prospectus is an inactive textual reference only.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Stockholders and Board of Directors

Codex DNA, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheet of Codex DNA, Inc. (the Company) as of December 31, 2019 and 2020, and the related consolidated statement of operations and comprehensive loss, convertible preferred stock and stockholders' equity (deficit), and cash flows for the period from March 8, 2019 (inception) to December 31, 2019 and the year ended December 31, 2020, and the related notes to the consolidated financial statements (collectively referred to as the consolidated "financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2019 and 2020, and the results of its operations and its cash flows for the period from March 8, 2019 (inception) to December 31, 2019 and the year ended December 31, 2020, in conformity with accounting principles generally accepted in the United States of America.

Going Concern Uncertainty

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1, the Company has had recurring losses and negative operating cash flows since inception, an accumulated deficit at December 31, 2020, and insufficient cash and loan proceeds at December 31, 2020 to fund operations for twelve months from the date of issuance. All of these matters raise substantial doubt about the Company's ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ OUM & CO. LLP
San Francisco, California
March 16, 2021 (June 14, 2021, as to the effects of the reverse stock split discussed in Note 18)
We have served as the Company's auditor since 2020.

Codex DNA, Inc.
Consolidated Balance Sheet
(In thousands, except share and per share data)

	December 31,	
	2019	2020
Assets		
Current assets:		
Cash	$ 29,144	$ 13,463
Accounts receivable, net of allowance for bad debts of $105 at December 31, 2019 and 2020	1,492	2,266
Inventory, net	712	601
Prepaid expenses and other current assets	86	851
Total current assets	31,434	17,181
Property and equipment, net	888	689
Right-of-use assets	—	3,090
Long-term deposits	81	81
Goodwill	3,497	3,497
Other intangible assets, net	2,861	2,325
Total Assets	$ 38,761	$ 26,863
Liabilities, convertible preferred stock and stockholders' equity (deficit)		
Current liabilities:		
Accounts payable	$ 614	$ 1,191
Accrued employee expenses	758	1,470
Finance lease liability, current portion	111	90
Operating lease liability, current portion	—	693
Deferred revenue, current portion	112	606
Other accrued liabilities	127	220
Notes payable, current portion	—	1,333
Other current liabilities	—	22
Total current liabilities	1,722	5,625
Finance lease liability, net of current portion	185	81
Operating lease liability, net of current portion	—	2,776
Notes payable, net of discount and current portion	4,472	3,353
Deferred rent	284	—
Derivative liabilities	654	1,533
Deferred revenue, net of current portion	33	40
Total liabilities	$ 7,350	$ 13,408
Commitments and contingencies (Note 14)		
Convertible preferred stock		
Series Z Preferred stock, $.0001 par value; 7,500,000 shares authorized at December 31, 2019 and 2020; 2,500,000 shares issued and outstanding at December 31, 2019 and 2020	1	1
Series A Preferred stock, $.0001 par value; 22,797,830 shares authorized at December 31, 2019 and 2020; 7,599,274 shares issued and outstanding at December 31, 2019 and 2020	20,992	20,992
Series A1 Preferred stock, $.0001 par value; 15,402,237 shares authorized at December 31, 2019 and 2020; 4,980,055 shares issued and outstanding at December 31, 2019 and 2020	17,921	17,921
Stockholders' equity (deficit)		
Common stock, $.0001 par value; 72,000,000 shares authorized at December 31, 2019 and 2020; 5,000,000 and 5,023,957 shares issued and outstanding at December 31, 2019 and 2020, respectively	2	2
Additional paid-in capital	797	851
Accumulated deficit	(8,302)	(26,312)
Total stockholders' equity (deficit)	(7,503)	(25,459)
Total liabilities, convertible preferred stock and stockholders' equity (deficit)	$ 38,761	$ 26,863

The accompanying notes are an integral part of these consolidated financial statements.

Codex DNA, Inc.
Consolidated Statement of Operations and Comprehensive Loss
(in thousands, except share and per share data)

	Period from March 8, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020
Revenue:		
Product sales	$ 3,555	$ 5,131
Royalties	1,250	1,445
Total revenue	4,805	6,576
Cost of revenue	2,677	2,951
Gross profit	2,128	3,625
Operating expenses:		
Research and development	3,318	8,925
Sales and marketing	1,878	6,931
General and administrative	3,908	4,130
Total operating expenses	9,104	19,986
Loss from operations	(6,976)	(16,361)
Other income (expense):		
Interest expense	(1,490)	(690)
Change in fair value of derivative liabilities	62	(880)
Other income (expense), net	102	(74)
Total other income (expense), net	(1,326)	(1,644)
Loss before provision for income taxes	(8,302)	(18,005)
Provision for income taxes	—	$ (5)
Net loss and comprehensive loss	$ (8,302)	$ (18,010)
Net loss attributable to common stockholders	$ (8,302)	$ (18,010)
Net loss per share attributable to common stockholders—basic and diluted	$ (1.66)	$ (3.60)
Weighted average common stock outstanding—basic and diluted	5,000,000	5,001,538

The accompanying notes are an integral part of these consolidated financial statements.

Codex DNA, Inc.
Consolidated Statements of Convertible Preferred Stock and Stockholders' Equity (Deficit)
(in thousands, except share data)

	Convertible Preferred Stock		Common Stock		Additional Paid-In Capital	Accumulated Deficit	Total Stockholders' Equity (Deficit)
	Shares	Amount	Shares	Amount			
Balance at March 8, 2019 (Inception)	2,500,000	$ 1	5,000,000	$ 2	$ —	—	$ 2
Conversion of debt to Series A	2,384,423	6,859	—	—		—	—
Issuance of Series A	5,214,851	14,999	—	—		—	—
Issuance of Series A-1	4,980,055	17,955	—	—		—	—
Equity financing costs	—	(900)	—	—		—	—
Warrant on common shares	—	—	—	—	786	—	786
Stock-based compensation expense	—	—	—	—	11	—	11
Net loss	—	—	—	—	—	(8,302)	(8,302)
Balances at December 31, 2019	15,079,329	38,914	5,000,000	2	797	(8,302)	(7,503)
Issuance of Common Stock upon exercise of stock options	—	—	23,957	—	11	—	11
Stock-based compensation expense	—	—	—	—	43	—	43
Net loss	—	—	—	—	—	(18,010)	(18,010)
Balances at December 31, 2020	15,079,329	38,914	5,023,957	2	851	(26,312)	(25,459)

The accompanying notes are an integral part of these consolidated financial statements.

Codex DNA, Inc.
Consolidated Statements of Cash Flows
(in thousands)

	Period from March 8, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020
Cash Flows From Operating Activities:		
Net loss	$ (8,302)	$ (18,010)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation	448	403
Amortization of intangible assets	409	463
Amortization of debt discount	54	214
Loss on disposal of assets	194	—
Impairment of intangible asset	—	73
Stock-based compensation	11	43
Amortization of lease right-of-use assets	—	591
Change in fair value of warrant liability	169	425
Change in fair value of put option liability	(20)	(55)
Change in fair value of participation right liability	(42)	420
Change in fair value of success fee liability	379	89
Non-cash interest on convertible notes	109	—
Non-cash interest on finance leases	(24)	(17)
Changes in assets and liabilities:		
Accounts receivable	(859)	(774)
Inventories	723	111
Deposits, prepaid expenses and other current assets	(49)	(765)
Accounts payable, accrued payroll and accrued liabilities	232	1,404
Deferred revenue	(15)	501
Operating lease liabilities	—	(497)
Deferred rent	193	—
Net cash used in operating activities	(6,390)	(15,381)
Cash Flows From Investing Activities:		
Purchase of property and equipment	(79)	(204)
Net cash used in investing activities	(79)	(204)
Cash Flows From Financing Activities:		
Borrowings on term loan	5,000	—
Repayment of promissory note	(8,926)	—
Borrowings on convertible notes	5,000	—
Borrowings under promissory notes	1,750	—
Finance lease liability	(103)	(107)
Equity financing costs	(113)	—
Debt financing costs	(456)	—
Series A preferred stock	14,999	—
Series A-1 preferred stock	17,955	—
Proceeds from the exercise of common stock options	—	11
Net cash provided by (used in) financing activities	35,106	(96)
Net Increase (Decrease) In Cash And Restricted Cash	28,637	(15,681)
Cash and restricted cash at beginning of period/year	507	29,144
Cash and restricted cash at end of period/year	$ 29,144	$ 13,463
Supplemental Disclosure Of Cash Flow Information:		
Cash paid for income taxes	$ —	$ —
Cash paid for interest	$ 1,329	$ 464
Notes payable converted to Series A Preferred shares	$ 6,859	$ —
Issuance of common warrant for offering costs	$ 785	$ —

The accompanying notes are an integral part of these consolidated financial statements.

Codex DNA, Inc.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
AS OF AND FOR THE PERIOD FROM MARCH 8, 2019 (INCEPTION) TO DECEMBER 2019
AND FOR THE YEAR ENDED ON DECEMBER 31, 2020

1. ORGANIZATION AND OPERATIONS

Business

Codex, DNA, Inc. (the Company) was incorporated in the state of Delaware in March 2011, as Synthetic Genomics Solution, Inc., a wholly owned subsidiary of Synthetic Genomics, Inc. (SGI). The Company changed its name to SGI-DNA, Inc. (SGI-DNA) in February 2013, and then to Codex DNA, Inc. in March 2020. SGI-DNA Limited, a United Kingdom company focused on sales and marketing activities, is a wholly owned subsidiary of Codex DNA, Inc. The Company manufactures and sells laboratory equipment, specifically synthetic biology instruments, reagents and associated products and related services, primarily to pharmaceutical and academic laboratories worldwide.

On March 8, 2019, SGI sold SGI-DNA to GATTACA Mining, LLC (Purchaser or GATTACA) by entering into a stock purchase agreement to sell all of the Company's outstanding common and preferred stock in exchange for a $10 million non-recourse promissory note (see Note 3). Both the Company and Purchaser are co-borrowers of the promissory note. As this transaction was a change in control transaction in accordance with generally accepted accounting principles in the United States (US GAAP), the Company elected to apply push-down accounting and recognized a step up in the basis of the assets acquired and liabilities assumed in the acquisition (see Note 3 for further discussion of the stock purchase transaction).

Since its inception, the Company has devoted substantially all of its efforts to raising capital, commercializing its current products, and developing new product offerings. The Company is subject to a number of risks similar to those of other companies conducting high-risk, early-stage research and development of products. Principal among these risks are a dependence on key individuals and intellectual property, competition from other products and companies, and the technical risks associated with the successful research, development and manufacturing of its products. The Company's success is dependent upon its ability to continue to raise additional capital in order to fund ongoing research and development, commercialize its products, generate revenue, meet its obligations, and, ultimately, become profitable.

Products currently under development will require significant additional research and development efforts. These efforts require significant amounts of additional capital, adequate personnel and infrastructure.

Going Concern

The Company has evaluated whether there are conditions and events, considered in the aggregate, that raise substantial doubt about the Company's ability to continue as a going concern within one year after the date the consolidated financial statements are issued.

Since inception, the Company has incurred cumulative operating losses and negative cash flows from operations. These operating losses and negative cash flows have been financed principally from the issuance of equity securities and debt. The Company's ability to continue as a going concern is dependent upon the ability to raise additional debt or equity capital. There can be no assurance that such capital will be available in sufficient amounts or on terms acceptable to the Company. These factors raise substantial doubt about the Company's ability to continue as a going concern. Risks to which the Company is exposed include uncertainties related to the ability to achieve revenue-generating products; current and potential competitors with greater financial, technological, production, and marketing resources; dependence on key management personnel; and raising additional capital, as needed. Based upon the Company's current plans, management believes there currently is insufficient financial resources to fund the Company's operations for at least twelve months from the issuance date of the 2020 consolidated financial statements.

To address the Company's capital needs, the Company must continue to actively pursue additional equity or debt financing. The Company has been in ongoing discussions with different sources of capital, including financial institutions with respect to such financing. Adequate financing opportunities might not be available to the Company, when and if needed, on acceptable terms or at all. If the Company is unable to obtain additional financing in

sufficient amounts or on acceptable terms under such circumstances, the Company's operating results and prospects will be adversely affected.

The accompanying consolidated financial statements have been prepared on a going concern basis, which contemplates the realization of assets and satisfaction of liabilities in the ordinary course of business. The consolidated financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or the amounts and classification of liabilities that might result from the outcome of this uncertainty.

Impact of COVID-19

In December 2019, a novel strain of coronavirus, which causes the disease known as COVID-19, was reported to have surfaced in Wuhan, China. Since then, COVID-19 coronavirus has spread globally. In March 2020, the World Health Organization declared the COVID-19 outbreak a pandemic. The ongoing COVID-19 global and national health emergency has caused significant disruption in the international and United States economies and financial markets. The spread of COVID-19 has caused illness, quarantines, cancellation of events and travel, business and school shutdowns, reduction in business activity and financial transactions, labor shortages, supply chain interruptions and overall economic and financial market instability.

In response to public health directives and orders and to help minimize the risk of the virus to employees, the Company has taken precautionary measures, including implementing work-from home policies for certain employees. The COVID-19 pandemic has the potential to significantly impact the Company's manufacturing supply chain, distribution or logistics and other services. Additionally, the Company's service providers and their operations may be disrupted, temporarily closed or experience worker or supply shortages, which could result in additional disruptions or delays in shipments of laboratory equipment or the advancement of the scientific research. To date, the Company is not aware of any such disruptions. Furthermore, to date, the Company has not experienced the pandemic's adverse impacts in any material respect. The Company is not able to estimate the duration of the pandemic or potential impact on the business if disruptions or delays in shipments of product occur. In addition, a severe prolonged economic downturn could result in a variety of risks to the business, including weakened demand for product and a decreased ability to raise additional capital when needed on acceptable terms, if at all. As the situation continues to evolve, the Company will continue to closely monitor market conditions and respond accordingly.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation and Principles of Consolidation

The Company has prepared the accompanying consolidated financial statements in accordance with US GAAP and included the accounts of the Company and its wholly owned subsidiary after the elimination of all significant intercompany accounts and transactions.

Use of Estimates

The preparation of consolidated financial statements in conformity with US GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the consolidated financial statements, and the reported amounts of revenues and expenses during the reporting periods presented. Key estimates in the consolidated financial statements include the Company's ability to continue as a going concern, revenue recognition, impairment assessment for goodwill and intangible assets, allowance for doubtful accounts, estimated useful lives of property and equipment, valuation of inventory, accrued expenses, valuation of deferred income tax assets, valuation of derivative liabilities, share-based compensation and accrued warranty are subject to significant estimation. Actual results could differ from those estimates.

Concentrations of Credit Risk and Significant Customers

Financial instruments that potentially subject the Company to concentrations of credit risk consist of cash and accounts receivable.

The Company's accounts receivable are derived from revenue earned from customers. The Company does not require collateral on accounts receivable. The Company maintains reserves for estimated potential credit losses. For the period from March 8, 2019 (inception) to December 31, 2019, two customers accounted for 32% and 20% of

the Company's accounts receivable, respectively. For the year ended December 31, 2020, one customer accounted for 23% of the Company's accounts receivable balance. For the year ended December 31, 2020, one customer accounted for 21% of the Company's revenue.

The Company maintains its cash with financial Institutions. Deposits held with banks may exceed the amount of insurance provided on such deposits.

Cash

As of December 31, 2019 and 2020, cash consisted of cash deposited with banks.

Accounts Receivable

Accounts receivable is comprised of amounts due from third-party payors recorded at the invoice amount and does not bear interest. The Company reports accounts receivable net of estimated contractual adjustments and any allowance for doubtful accounts. The Company reviews accounts receivable on an ongoing basis to determine collectability. The Company maintains an allowance for doubtful accounts based on its assessment of the collectability of the amounts owed to the Company by its customers. The Company considers the following in determining the level of allowance required: its customer's payment history, the age of the receivable, the credit quality of its customers, the general financial condition of its customer base and other factors that may affect the customers' ability to pay. The Company writes off accounts against the allowance for doubtful accounts when they are deemed to be uncollectible. The Company's allowance for doubtful accounts at the end of both December 31, 2019 and 2020 was $0.1 million.

Inventory

Inventory, which primarily consists of raw materials, labor and overhead related to work in process and sub-assemblies are stated at the lower of cost or net realizable value. Cost is computed using standard cost, which approximates actual cost on a first-in, first-out basis. Net realizable value is evaluated by considering obsolescence, excessive levels of inventory, deterioration and other factors. Adjustments to reduce the cost of inventory to its net realizable value, if required, are made for estimated excess, obsolescence or impaired inventory. Excess and obsolete inventory is charged to cost of revenue and a new, lower-cost basis for that inventory is established and subsequent changes in facts and circumstances do not result in the restoration of amounts previously written off.

Property and Equipment

Property and equipment are recorded at cost, net of accumulated depreciation and amortization. The Company depreciates property and equipment using the straight-line method over estimated useful lives ranging from three to five years. Leasehold improvements and equipment held under capital leases are amortized on a straight-line basis over the shorter of the lease term or the estimated life of the asset.

Upon the sale or retirement of assets, the cost and related accumulated depreciation and amortization are removed from the balance sheet and the resulting gain or loss is reflected in other income (expense) in the consolidated statement of operations and comprehensive loss. Maintenance and repairs are charged to the general and administrative expenses in the consolidated statement of operations and comprehensive loss as incurred.

Intangible Assets

The Company has intangible assets and goodwill recorded in connection with its acquisition in March 2019 (see Note 3). Intangible assets are recognized apart from goodwill if they arise from contractual or other legal rights or if they are separable. An asset is considered separable if (a) it is capable of being separated from the acquired entity and sold, transferred, licensed, rented or exchanged, or (b) it can be conveyed in combination with a related asset or liability. Those assets that do not meet either criterion are included in goodwill for financial reporting purposes. The following assets were recognized as part of the acquisition:

- Purchased technology: valued by management using an income approach.
- Trade name: valued by management using an income approach. The amount allocated to trade name was deemed impaired as the Company changed its name to Codex DNA, Inc. in 2020 (see Note 1 and 7).

Intangible assets are amortized over their estimated useful lives based upon the estimated economic value derived from the related intangible asset. Intangible assets are reviewed for impairment whenever events or changes in

circumstances, such as service discontinuance, technological obsolescence, or significant decreases in the Company's market capitalization indicate that the carrying amount of the asset may not be recoverable. When such events occur, the Company compares the carrying amount of the asset to the undiscounted expected future cash flows related to the asset. If this comparison indicates that an impairment is present, the amount of the impairment is calculated as the difference between the carrying amount and the fair value of the asset. There was no impairment recorded for the period from March 8 (inception) to December 31, 2019. For the year ended December 31, 2020, the Company recorded impairment of $0.1 million on its trademark (see Note 1 and 7).

Goodwill

The Company recognizes the excess of the purchase price over the fair value of identifiable net assets acquired as goodwill. Goodwill is not amortized but is tested for impairment annually or more frequently if events or changes in circumstances indicate that the carrying amount of the goodwill may not be recoverable. The Company's goodwill impairment tests are performed at the enterprise level given the Company's single reporting unit.

The Company's goodwill impairment analysis first assesses qualitative factors to determine whether events or circumstances existed that would lead the Company to conclude it is more likely than not that the fair value of the reporting unit is below its carrying amount. If the Company determines that it is more likely than not that the fair value of the reporting unit is below the carrying amount, a quantitative goodwill assessment is required. In the quantitative evaluation, the fair value of the reporting unit is determined and compared to the carrying value. If the fair value is greater than the carrying value, then the carrying value is deemed to be recoverable and no further action is required. If the fair value estimate is less than the carrying value, goodwill is considered impaired for the amount by which the carrying value exceeds the reporting unit's fair value and a charge would be recognized as impairment of goodwill in the consolidated statement of operations and comprehensive loss.

Accounting for Long-Lived Assets

The Company reviews its long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of an asset to be held and used is measured by a comparison of the carrying amount of an asset or asset group to the future undiscounted cash flows expected to be generated by the asset or asset group. No such impairments have been identified for the period ended December 31, 2019 and for the year ended December 31, 2020.

Deferred Offering Costs

The Company capitalizes within other assets certain legal, consulting and other third-party fees that are directly related to the Company's in-process equity financings, including the planned initial public offering, until such financings are consummated. After consummation of the equity financing, these costs are recorded as a reduction of the proceeds received as a result of the offering. Should a planned equity financing be abandoned, terminated, or significantly delayed, the deferred offering costs are immediately written off to operating expenses. There were no deferred offering costs capitalized during the period ended December 31, 2019 and for the year ended December 31, 2020.

Deferred Financing Costs

The Company capitalizes certain legal and other third-party fees that are directly associated with obtaining access to capital under credit facilities. Deferred financing costs incurred in connection with obtaining access to capital under credit facilities are recorded as a reduction to the carrying amount of the debt and amortized to interest expense using the effective interest method over the repayment term.

Income Taxes

The Company is a C Corporation for federal income tax purposes. The Company was not profitable during 2019 and 2020. Accordingly, no provision for federal income taxes has been presented in the accompanying consolidated statement of operations and comprehensive loss.

The Company accounts for income taxes under the asset and liability method. Under this method, deferred tax assets and liabilities are recognized for the future tax consequences attributed to differences between financial statement carrying amounts of existing assets and liabilities and their respective tax bases, including operating losses and tax credit carryforwards, if applicable. Deferred tax assets and liabilities are measured using the enacted tax rates expected to apply to taxable income in the years in which the differences are expected to be recovered or

settled. The effect on deferred tax assets and liabilities of a change in the tax rates is recognized in income in the period that includes the enactment date.

A valuation allowance may be established for carryforwards and other deferred tax assets when it is more likely than not that such deferred tax assets will not be realized. Based on its facts, the Company considered all available evidence, both positive and negative, including historical levels of taxable income, expectations, and risks associated with estimates of future taxable income, and ongoing prudent and feasible tax planning strategies in assessing the need for a valuation allowance. The Company recorded a valuation allowance against the deferred tax asset as the Company believes it is more likely than not that the deferred asset will not be utilized.

The Company recognizes the effect of income tax positions only if those positions are more likely than not to be sustained upon examination, including resolution of any related appeals or litigation processes. A tax position that meets the more likely than not recognition threshold is measured at the largest amount of benefit that is greater than 50% likely of being realized upon ultimate settlement with a taxing authority. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs. The Company records interest related to unrecognized tax benefits in interest and penalties in general and administrative expenses. The Company has determined that it has an uncertain tax position as it relates to its state research and development credits for the period ended December 31, 2019 and for the year ended December 31, 2020 (see Note 13).

Share-Based Compensation

For share-based awards granted to employees and directors, the Company estimates the grant-date fair value using the Black-Scholes option-pricing model. Compensation expense for these awards is recognized net of the estimated forfeiture rate, over the requisite service period, which is generally the vesting period of the respective award.

For share-based awards granted to non-employees, the Company adopted Accounting Standards Update No. (ASU) 2018-07, Compensation—Stock Compensation (Topic 718) (ASU 2018-07) at inception, as discussed below, in which the measurement date for non-employee awards is the date of grant. The compensation expense for non-employees is recognized in the same manner as if the Company had paid cash in exchange for the goods or services, which is generally the vesting period of the award. The Company applies an estimated forfeiture rate to share-based compensation.

The Company classifies share-based compensation expense in its consolidated statement of operations and comprehensive loss in the same manner in which the award recipient's payroll costs are classified or in which the award recipient's service payments are classified.

Revenue Recognition

The Company recognizes revenues in accordance with Financial Accounting Standards Board (FASB) ASU 2014-09, Revenue from Contracts with Customers (Topic 606) (ASC 606). To date, revenues have consisted primarily of payments received related to product sales and royalty agreements. Under ASC 606, the Company recognizes revenue when customers obtain control of promised goods or services, in an amount that reflects the consideration which the Company expects to receive in exchange for those goods or services.

Revenue for product sales is recognized upon delivery to the customer. Revenue related to services and product warranty arrangements is deferred and recognized over time, as services are delivered. To determine the appropriate amount of revenue to be recognized for arrangements determined to be within the scope of ASC 606, the Company performs the following five steps: (i) identification of the promised goods or services in the contract; (ii) determination of whether the promised goods or services are performance obligations including whether they are distinct in the context of the contract; (iii) measurement of the transaction price, including the assessment of the constraint on variable consideration; (iv) allocation of the transaction price to the performance obligations; and (v) recognition of revenue when, or as the Company satisfies each performance obligation. As part of the accounting for arrangements under ASC 606, management must use its significant judgment to determine: (a) the performance obligations based on the determination under step (ii) above; (b) the transaction price under step (iii) above; and (c) the standalone selling price for each performance obligation identified in the contract for the allocation of transaction price in step (iv) above. Management also uses its judgment to determine whether milestones or other variable consideration, except for royalties and sales-based milestones, should be included in the transaction price as described below. The transaction price is allocated to each performance obligation based on the relative stand-alone selling price of each

performance obligation in the contract, and revenue is recognized based on those amounts when, or as, the performance obligations under the contract are satisfied.

The standalone selling price is the price at which an entity would sell a promised good or service separately to a customer. Management estimates the standalone selling price of each of the identified performance obligations in customer contracts, maximizing the use of observable inputs. Because the Company has not sold the same goods or services in the contracts separately to any customers on a standalone basis and there are no similar observable transactions in the marketplace, the Company estimates the standalone selling price of each performance obligation in customer arrangements based on estimated costs to be incurred to fulfil obligations associated with the performance, plus a reasonable margin.

Amounts received prior to revenue recognition are recorded as deferred revenue in the consolidated balance sheet. Amounts expected to be recognized as revenue within the twelve months following the balance sheet date are classified as deferred revenue, current portion in the consolidated balance sheet. Amounts not expected to be recognized as revenue within the twelve months following the balance sheet date are classified as other long-term liabilities in the consolidated balance sheet. Amounts are recorded as accounts receivable when the right to consideration is unconditional.

Product Revenue, Net

The Company recognizes revenue on product sales when the customer obtains control of the product, which occurs upon delivery to the customer. The Company recognizes revenue on installation and training when the service has been rendered and recognizes warranty revenue over the warranty term. Product revenues are recorded net of variable consideration, including discounts. In the event of sales to parties other than customers, the Company records the amount as a reduction in cost of revenue.

Product Returns

The Company does not generally offer customers the ability to return product and has received an immaterial amount of returns to date.

Royalty Revenue

The Company enters into licensing arrangements that are within the scope of ASC 606, under which the Company will provide non-exclusive sales of licensing rights of its patents to customers. The terms of these arrangements include royalty payments to the Company of a fixed tiered percentage of sales based on the Company's technology that has been licensed. Customers submit their usage and payments on a quarterly or semiannual basis.

Warranties

The Company provides warranty coverage on its systems. Warranty coverage includes providing labor and parts necessary to repair the systems during the warranty period. The standard warranty coverage is twelve months for system sales. In addition, customers may pay for enhanced warranty service or to extend the warranty period to 24 months. Warranty revenue is deferred and recognized over the warranty period as a part of product sales in the consolidated statement of operations and comprehensive loss. The Company charges warranty expenses to cost of revenue in the period the expense is incurred. The changes in deferred revenue for warranties during the period ended December 31, 2019 and for the year ended December 31, 2020 are summarized as follows (in thousands):

Balance at March 8, 2019 (inception)	$	171
Warranty revenue deferred		146
Warranty revenue recognized		(172)
Balance at December 31, 2019		145
Warranty revenue deferred		404
Warranty revenue recognized		(292)
Balance at December 31, 2020	$	257

The deferred revenue for warranties at December 31, 2019 and 2020 are summarized as follows (in thousands):

	December 31,	
	2019	2020
Deferred warranty revenue, current portion	$ 112	$ 217
Deferred warranty revenue, net of current portion	33	40
Total deferred warranty revenue	$ 145	$ 257

Shipping and Handling Costs

Shipping and handling costs are included as a component of cost of revenue in the consolidated statement of operations and comprehensive loss.

Fair Value of Assets and Liabilities

In accordance with ASC 820, fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. When determining fair value, the Company considers the principal or most advantageous market in which the Company would transact, and considers assumptions that market participants would use when pricing the asset or liability. The fair value hierarchy distinguishes between (1) market participant assumptions developed based on market data obtained from independent sources (observable inputs) and (2) an entity's own assumptions about market participant assumptions developed based on the best information available in the circumstances (unobservable inputs).

The fair value hierarchy consists of three broad levels, which gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). The three levels of the fair value hierarchy as described below:

Level 1–Quoted prices (unadjusted) in active markets for identical assets or liabilities.

Level 2–Directly or indirectly observable inputs as of the reporting date through correlation with market data, including quoted prices for similar assets and liabilities in active markets and quoted prices in markets that are not active. Level 2 also includes assets and liabilities that are valued using models or other pricing methodologies that do not require significant judgment since the input assumption used in the models, such as interest rates and volatility factors, are corroborated by readily observable data from actively quoted markets substantially the full term of the financial instrument.

Level 3–Unobservable inputs that are supported by little or no market data and require the use of significant management judgment. These values are generally determined using pricing models for which the assumptions utilize management's estimates of market participant assumptions.

The Company's participation right liability, warrant liability, contingent put liability, and success fee contingent liability are carried at fair value, determined according to Level 3 inputs in the fair value hierarchy described above (see Note 4).The carrying value of financial instruments included in current assets and liabilities approximate their fair value principally because of the short-term maturities of these instruments.

Research and Development

Research and development costs, including direct and allocated expenses, are expensed in the period incurred. Research and development costs include payroll and personnel expense; consulting costs; external contract research and development costs; raw materials and allocated overhead such as depreciation and amortization, rent and utilities. Advance payments for goods and services to be used in future research and development activities are recorded as prepaid expenses and are expensed over the service period as the services are provided or when the goods are consumed.

Advertising

The Company expenses the cost of advertising, including promotional expenses, as incurred. Advertising and promotional expenses for the period ended December 31, 2019 and for the year ended on December 31, 2020 were $0.1 million and $0.8 million, respectively.

Comprehensive Loss

Comprehensive loss includes net loss as well as other changes in stockholders' equity (deficit) that result from transactions and economic events other than those with stockholders. There was no difference between net loss and comprehensive loss for each of the period ended December 31, 2019 and the year ended December 31, 2020 as presented in the accompanying consolidated financial statements.

Classification of Convertible Preferred Stock

The Company's convertible preferred stock is classified outside of stockholders' equity (deficit) because the holders of such shares have liquidation rights in the event of a deemed liquidation that, in certain situations, are not solely within the control of the Company.

Net Loss per Share

The Company follows the two-class method when computing net loss per share as the Company has issued shares that meet the definition of participating securities. The two-class method determines net loss per share for each class of common and participating securities according to dividends declared or accumulated and participation rights in undistributed earnings. The two-class method requires income available to common stockholders for the period to be allocated between common and participating securities based upon their respective rights to receive dividends as if all income for the period had been distributed.

Basic net loss per share attributable to common stockholders is computed by dividing net loss attributable to common stockholders by the weighted-average number of common shares outstanding for the period. Diluted net loss per share attributable to common stockholders is computed by adjusting net loss attributable to common stockholders to reallocate undistributed earnings based on the potential impact of dilutive securities. Diluted net loss per share attributable to common stockholders is computed by dividing the diluted net loss attributable to common stockholders by the weighted-average number of common shares outstanding for the period, including potential dilutive common shares assuming the dilutive effect of common stock equivalents. For purposes of this calculation, outstanding stock options, unvested restricted common stock, and convertible preferred stock are considered potential dilutive common stock and are excluded from the computation of diluted net loss per share attributable to common stockholders if their effect is anti-dilutive.

The Company's convertible preferred stock contractually entitles the holders of such shares to participate in dividends but do not contractually require the holders of such shares to participate in losses of the Company. Accordingly, in periods in which the Company reports a net loss, such losses are not allocated to such participating securities. In periods in which the Company reports a net loss attributable to common stockholders, diluted net loss per share attributable to common stockholders is the same as basic net loss per share attributable to common stockholders, since dilutive common shares are not assumed to have been issued if their effect is anti-dilutive. The Company reported a net loss attributable to common stockholders for the period ended December 31, 2019 and the year ended December 31, 2020.

Segments Information

Operating segments are defined as components of an entity for which separate financial information is available and that is regularly reviewed by the chief operating decision maker (CODM), in deciding how to allocate resources to an individual segment and in assessing performance. The Company's CODM is its chief executive officer. The Company has determined it operates in one segment.

Recent Accounting Pronouncements Adopted

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842) (ASC 842), as subsequently amended, which sets out the principles for the recognition, measurement, presentation, and disclosure of leases for both parties to a contract (i.e., lessees and lessors), and replaces the existing guidance in ASC 840, Leases. The FASB subsequently issued amendments to ASC 842, which have the same effective date of January 1, 2019: (i) ASU 2018-10, Codification Improvements to Topic 842, Leases, which amends certain narrow aspects of the guidance issued in ASU 2016-02; and (ii) ASU 2018-11, Leases (Topic 842): Targeted Improvements, which allows for a transition approach to initially apply ASU 2016-02 at the adoption date and not restate prior periods presented. ASC 842 requires lessees to classify leases as either finance or operating leases based on the principle of whether or not the lease is effectively a financed purchase by the lessee. This classification will determine the recognition pattern of lease expense over the term of the lease. The Company recognizes the lease expense for its operating leases on a

straight-line basis. A lessee is also required to record a right-of-use asset and a lease liability for all leases with a term of greater than 12 months regardless of their classification. Leases with a term of 12 months or less will be accounted for similar to existing guidance for operating leases under ASC 840.

The Company early adopted ASC 842 effective January 1, 2020 using the required modified retrospective approach and utilizing the effective date as its date of initial application. As a result, prior periods are presented in accordance with the previous guidance in ASC 840. ASC 842 provides a number of optional practical expedients in transition. The Company applied the package of practical expedients to leases that commenced prior to the effective date whereby the following are not required to be reassessed: (i) whether any expired or existing contracts are or contain leases; (ii) the lease classification for any expired or existing leases; and (iii) the treatment of initial direct costs for existing leases. The Company elected the short-term lease expedient for all leases that qualified based on a lease term of 12 months or less, and consequently a right-of-use asset or lease liability was not recognized for short term leases.

The adoption of ASC 842 resulted in the recognition of operating lease liabilities of $4.0 million and right-of-use assets of $3.7 million and the de-recognition of deferred rent liabilities of $0.3 million on the Company's consolidated balance sheet as of January 1, 2020. The impact of adoption relates to the Company's existing operating lease for operating and laboratory space. The adoption of ASC 842 did not have a material impact on the Company's consolidated statement of operations and comprehensive loss or consolidated statements of cash flows.

In August 2018, the FASB issued ASU 2018-13, Fair Value Measurement (Topic 820), Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement, (ASU 2018-13). This update removed the following disclosure requirements: (1) the amount of and reasons for transfers between Level 1 and Level 2 of the fair value hierarchy; (2) the policy for timing of transfers between levels; and (3) the valuation processes for Level 3 fair value measurements. Additionally, this update added the following disclosure requirements: (1) the changes in unrealized gains and losses for the period included in other comprehensive income and loss for recurring Level 3 fair value measurements held at the end of the reporting period; (2) the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements. For certain unobservable inputs, an entity may disclose other quantitative information (such as the median or arithmetic average) in lieu of the weighted average if the entity determines that other quantitative information would be a more reasonable and rational method to reflect the distribution of unobservable inputs used to develop Level 3 fair value measurements. ASU 2018-13 was effective for fiscal years beginning after December 15, 2019 with early adoption permitted. The Company has adopted this update and there was no material effect on the consolidated financial statements and related disclosures.

Recent Accounting Pronouncements Not Yet Adopted

In June 2016, the FASB issued ASU 2016-13, Financial Instruments-Credit Losses: Measurement of Credit Losses on Financial Instruments (Topic 326) (ASU 2016-13). ASU 2016-13 requires measurement and recognition of expected credit losses for financial assets. In April 2019, the FASB issued clarification to ASU 2016-13 within ASU No. 2019-04, Codification Improvements to Topic 326, Financial Instruments-Credit Losses, Topic 815, Derivatives and Hedging, and Topic 825, Financial Instruments. This update is effective for entities other than public business entities, including emerging growth companies that elected to defer compliance with new or revised financial accounting standards until a company that is not an issuer is required to comply with such standards, for annual reporting periods beginning after December 15, 2021. The Company is currently evaluating the impact that ASU 2016-13 will have on the consolidated financial statements and related disclosures.

In December 2019, the FASB issued ASU 2019-12, Simplifying the Accounting for Income Taxes (ASU 2019-12). ASU 2019-12 eliminates certain exceptions related to the approach for intra-period tax allocation, the methodology for calculating income taxes in an interim period and the recognition of deferred tax liabilities for outside basis differences. It also clarifies and simplifies other aspects of the accounting for income taxes. This update is effective for entities other than public business entities, including emerging growth companies that elected to defer compliance with new or revised financial accounting standards until a company that is not an issuer is required to comply with such standards, for annual reporting periods beginning after December 15, 2021, and interim periods within annual periods beginning after December 15, 2022. The Company is currently evaluating the impact that ASU 2019-12 will have on its consolidated financial statements and related disclosures.

In August 2020, the FASB issued ASU 2020-06, Debt – Debt with Conversion and Other (Subtopic 470-20) and Derivatives and Hedging – Contracts in Entity's Own Equity (Subtopic 815-40). This update simplifies the accounting for convertible debt instruments by removing certain accounting separation models as well as the accounting for debt instruments with embedded conversion features that are not required to be accounted for as derivative instruments. The update also updates and improves the consistency of earnings per share calculations for convertible instruments. The amendments in this ASU are effective for fiscal years beginning after December 15, 2021, including interim periods within those fiscal years. The Company is currently evaluating the impact that the implementation of this standard will have on the Company's consolidated financial statements and related disclosures.

3. PURCHASE PRICE ALLOCATION

On March 8, 2019, GATTACA acquired 100% of the outstanding preferred and common stock of SGI-DNA from SGI in exchange for consideration comprising a $10.0 million non-recourse promissory note (the Purchase Note), and a participation right. The Purchase Note was subject to a working capital adjustment and was subsequently reduced to $9.8 million. The Purchase Note bore interest at 6% per annum with the principal and interest due and payable on September 8, 2019. The participation right enabled SGI to receive property with a value equal to the net proceeds a person would receive as a holder of 6% of the common stock of the Company in a change of control transaction. SGI was also awarded a warrant to purchase common stock, equal to 6% of the shares of common stock issued and outstanding as of the time of exercise, which will automatically be net exercised immediately prior to the consummation of an initial public offering. This warrant and participation right were later amended on August 27, 2019 to provide a warrant for 1,081,745 shares of common stock, a participation right to receive property with a value equal to the net proceeds a person would receive as a holder of 1,081,745 shares in a change of control transaction, and additional warrants equal to 3% of the shares sold in future equity financings prior to an initial public offering or certain change of control transactions.

The Purchase Note and warrant were determined to have a fair value of $9.0 million, which was determined to be the purchase price of the Company and was allocated as follows (in thousands):

Cash	$ 508
Net working capital	841
Fixed assets and other long-term assets	1,451
Technology	3,150
Trade name	120
Goodwill	3,497
Total acquired assets	9,567
Long-term liabilities	(599)
Net assets acquired	$ 8,968

4. FAIR VALUE MEASUREMENT

The following table summarizes the fair values of the Company's derivative liabilities on the consolidated balance sheet which comprise the participation right liability, warrant liability, contingent put liability, and success fee contingent liability which are all deemed Level 3 liabilities (in thousands):

	Fair value measurements as of December 31, 2019			
	Level 1	Level 2	Level 3	Total
Liabilities				
Warrant liability	$ —	$ —	$ 169	$ 169
Contingent put option liability	—	—	106	106
Success fee contingent liability	—	—	379	379
Total	$ —	$ —	$ 654	$ 654

	Fair value measurements as of December 31, 2020			
	Level 1	Level 2	Level 3	Total
Liabilities				
Participation right liability	$ —	$ —	$ 420	$ 420
Warrant liability	—	—	594	594
Contingent put option liability	—	—	51	51
Success fee contingent liability	—	—	468	468
Total	$ —	$ —	$ 1,533	$ 1,533

During the period from March 8, 2019 (inception) to December 31, 2019 and year ended December 31, 2020, there were no transfers between Level 1, Level 2 and Level 3.

Participation Right Liability

The participation right liability consists of the fair value of 3% of the securities sold in a future equity financing round and was originated from the participation right that was given to SGI in conjunction with the Company acquisition (see Note 1 and 3). The fair value of the participation right liability was based on significant inputs not observable in the market, which represent a Level 3 measurement within the fair value hierarchy. The Company's valuation of the participation right liability utilized the estimated capital raised from the next financing round and the probability of success to obtain such capital. The Company reassesses these assumptions and estimates at least annually as additional information impacting the assumptions are obtained. Changes in the fair value of the participation right liability is recognized as part of the change in fair value of derivative liabilities in other income (expense) in the consolidated statement of operations and comprehensive loss.

The quantitative elements associated with the Company's Level 3 inputs impacting the fair value measurement of the participation right liability include management's expectation of amounts to be raised and the probability of success in obtaining the funds. The Company determines the estimated capital raised from the financing round to be $20.0 million with a probability of success of 70%. The fair value was determined by multiplying the amount expected to be raised versus the probability of success and the percentage right (3%). As of December 31, 2019, the participation right liability was determined not to be material; however, for December 31, 2020, the fair value of the participation right was valued at $0.4 million.

Preferred Stock Warrants

The preferred stock warrant liability consists of the fair value of warrants to purchase Series A-1 Preferred Stock in conjunction with the Series A-1 financing in December 2019 with SGI (see Note 10) and was based on significant inputs not observable in the market, which represent a Level 3 measurement within the fair value hierarchy. The Company's valuation of the preferred stock warrants utilized the Black-Scholes option-pricing model, which incorporates assumptions and estimates that are subjective. The Company assesses these assumptions and estimates at least annually as additional information impacting the assumptions are obtained. Changes in the fair value of the preferred stock warrants are recognized in other income (expense) as part of the change in fair value of derivative liabilities in the consolidated statement of operations and comprehensive loss.

The quantitative elements associated with the Company's Level 3 inputs impacting the fair value measurement of the preferred stock warrant liability include the fair value per share of the underlying Series A-1 convertible preferred stock, the remaining contractual term of the warrants, risk-free interest rate, expected dividend yield and expected volatility of the price of the underlying preferred stock. The most significant assumption in the Black-Scholes option-pricing model impacting the fair value of the preferred stock warrants is the fair value of the Company's convertible preferred stock as of each remeasurement date. The Company determines the fair value per share of the underlying preferred stock by taking into consideration its most recent sales of convertible preferred stock as well as additional factors that the Company deems relevant. As of December 31, 2019 and 2020, the fair value of the Series A-1 convertible preferred stock warrant was $1.11 and $3.87 per share, respectively. The Company is currently a private company and lacks company-specific historical and implied volatility information of its stock. Therefore, it estimates its expected stock volatility based on the historical volatility of publicly traded peer companies for a term equal to the remaining contractual term of the warrants. The risk-free interest rate is determined by reference to the U.S.

Treasury yield curve for time periods approximately equal to the remaining contractual term of the warrants. The Company has estimated a 0% dividend yield based on the expected dividend yield and the fact that the Company has never paid or declared dividends.

The following reflects the significant quantitative inputs used in the valuation of the preferred stock warrant liability:

	December 31,	
	2019	2020
Risk-free interest rate	1.7 %	0.1 %
Expected term	4.0 years	2.0 years
Expected volatility	65.0 %	83.6 %
Expected dividend yield	0.0 %	0.0 %

Contingent Put Option Liability

The contingent put option liability consists of the fair value of the contingent interest feature and acceleration clause (contingent put option) under the 2019 Loan Agreement (see Note 9). The fair value of the contingent put option liability was based on significant inputs not observable in the market, which represent a Level 3 measurement within the fair value hierarchy. The Company's valuation of the contingent put option liability utilized a risk-neutral valuation model wherein the fair value of the underlying debt facility is estimated, both with and without the presence of the default provisions, holding all other assumptions constant. The Company assesses these assumptions and estimates at least annually as additional information impacting the assumptions are obtained. Changes in the fair value of the contingent put option liability is recognized in other income (expense) as part of the change in fair value of derivative liabilities in the consolidated statement of operations and comprehensive loss.

Success Fee Contingent Liability

The success fee contingent liability consists of the fair value of contingent obligation to pay the lender a success fee of $0.8 million upon a Liquidity Event under the 2019 Loan Agreement (see Note 9). The fair value of the success fee contingent liability was based on significant inputs not observable in the market, which represent a Level 3 measurement within the fair value hierarchy. The Company's valuation of the success fee contingent liability utilized a liquidity event scenario analysis discounted at the Company's cost of capital. This analysis consists of both the probability adjusted value of the success fee based on liquidity scenarios, and the risk adjusted present value of the success fee discounted at the Company's cost of capital on the valuation date, to take into account the risk of achieving the liquidity scenarios. The Company assesses these assumptions and estimates at least annually as additional information impacting the assumptions are obtained. Changes in the fair value of the success fee contingent liability is recognized in other income (expense) as part of the change in fair value of derivative liabilities in the consolidated statement of operations and comprehensive loss.

The following table provides a roll-forward of the aggregate fair value of the Company's derivative liabilities for which fair value is determined using Level 3 inputs (in thousands):

	Participation right liability	Warrant liability	Contingent put liability	Success fee contingent liability
Fair value at March 8, 2019 (inception)	$ 42	$ —	$ —	$ —
Issuance of derivative liabilities	—	169	126	379
Change in fair value	(42)	—	(20)	—
Fair value at December 31, 2019	$ —	$ 169	$ 106	$ 379
Change in fair value	420	425	(55)	89
Fair value at December 31, 2020	$ 420	$ 594	$ 51	$ 468

For the period from March 8, 2019 (inception) to December 31, 2019 and year ended December 31, 2020, the Company recorded a change in fair value of derivative liabilities included in other income (expense) of $0.1 million and $(0.9) million, respectively.

5. INVENTORY

Inventories include material, labor and overhead and are stated at the lower of cost (first-in and first-out method) or net realizable value. The components of inventory are as follows as of December 31, 2019 and 2020 (in thousands):

	December 31,	
	2019	2020
Raw materials	$ 612	$ 299
Work in process and sub-assemblies	167	201
Finished goods	13	101
Reserves	(80)	—
Total	$ 712	$ 601

6. PROPERTY AND EQUIPMENT

Property and equipment consisted of the following on December 31, 2019 and 2020 (in thousands):

	December 31,	
	2019	2020
Machinery and equipment	$ 1,244	$ 1,315
Computer hardware and software	6	6
Leasehold improvements	—	32
Construction in progress	—	102
Total	1,250	1,455
Less: Accumulated depreciation and amortization	(362)	(766)
Total property and equipment, net	$ 888	$ 689

Depreciation expense for the period from March 8, 2019 (inception) to December 31, 2019 and the year ended December 31, 2020 was $0.4 million and is included in operating expenses.

During the period from March 8, 2019 (inception) to December 31, 2019 the Company retired assets no longer in service resulting in a loss on disposal of $0.2 million.

7. GOODWILL AND OTHER INTANGIBLE ASSETS

Goodwill

As part of the March 8, 2019 transaction (see Note 1), the Company acquired its intangible assets with resulting goodwill. The resulting goodwill carries a value of approximately $3.5 million. Due to the recent decline in global economic and labor market conditions caused by the global outbreak of the COVID-19 pandemic, the Company considered the effects on its goodwill and determined that there was no material significant impact that would cause a change in its analysis. There were no other events or circumstances that have changed since the last annual assessment that could reduce the fair value of the Company's reporting segments below its carrying values.

For the period ended December 31, 2019 and for the year ended December 31, 2020, the Company has not recorded any impairment of goodwill.

Other Intangible Assets

Other intangible assets include the rights to technology and the SGI-DNA trade name. The Company engaged an independent consultant to value the intangible assets and to determine the useful lives. The technology was valued

at approximately $3.2 million with a seven year useful life and the SGI-DNA trade name at approximately $0.1 million with a three year useful life.

Amortization expense related to the intangible assets for the period from March 8, 2019 (inception) to December 31, 2019 and the year ended on December 31, 2020 was approximately $0.4 million and $0.5 million, respectively.

The following table summarizes the estimated future amortization expense of the intangible assets (in thousands):

Years ending December 31:		
2021	$	450
2022		450
2023		450
2024		450
2025		450
Thereafter		75
Total	$	2,325

8. LEASES

As of December 31, 2020, the Company had four outstanding leases for office and scientific manufacturing equipment. The leases have terms between 25 and 60 months.

Corporate Headquarters

In April of 2019, the Company entered into an operating lease agreement for its corporate headquarters located at 9535 Waples Street, San Diego, California. The term of the lease commenced in 2019 and is scheduled to expire in January 2025. Under the terms of the lease, the Company provided a security deposit of $0.1 million, which is included in long-term deposits in the accompanying consolidated balance sheet. The lease provides for annual rent escalations. The Company is required to pay a portion of the operating costs, including insurance and maintenance under the agreement that are treated as variable costs and excluded from the measurement of the lease. The Company is entitled to one option to extend the lease term for an additional five years. The option to extend the lease term was not included in the right-of-use asset and lease liability as it was not reasonably certain of being exercised.

Equipment

The Company entered into finance lease agreements for equipment in November 2017 (the 2017 Equipment Lease), January 2018 (the 2018 Equipment Lease), and in March 2019 (the 2019 Equipment Lease). The terms of the leases commenced when the equipment was delivered which happened in the same months and years as above, respectively, and accordingly the related right-of-use assets and lease liabilities were recognized on the consolidated balance sheet at their respective commencement dates. The November 2017 Equipment Lease is scheduled to expire on October 1, 2022, the 2018 Equipment Lease on December 31, 2022, and the March 2019 Equipment Lease on April 25, 2021.

Summary of Lease Cost

The components of lease cost under ASC 842 are as follows (in thousands):

	December 31, 2020
Lease costs	
Finance lease cost:	
Payment of finance lease liability	$ 107
Interest on lease liabilities	17
Amortization of right-of-use asset	591
Variable lease cost	350
Total lease cost	$ 1,065

Supplemental disclosure of cash flow information related to leases are as follows (in thousands):

	December 31, 2020
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows from operating leases	$ 826
Operating cash flows from finance leases	$ 17
Financing cash flows from finance leases	$ 107

The weighted-average remaining lease term and discount rate were as follows:

	December 31, 2020
Weighted-average remaining lease term	
Finance leases	1.8 years
Operating leases	4.1 years
Weighted-average discount rate	
Finance leases	7.9 %
Operating leases	8.9 %

The following table summarizes the minimum lease payments of the Company's operating and finance lease liabilities as of December 31, 2020 (in thousands):

Year Ending December 31,	Operating	Finance
2021	$ 967	$ 99
2022	997	85
2023	1,026	—
2024	1,057	—
2025	89	—
Thereafter	—	—
Total future minimum lease payments	4,136	184
Less: imputed interest	(667)	(13)
Present value of operating lease liability	$ 3,469	$ 171
Less: current portion of lease liability	(693)	(90)
Non-current portion of lease liability	2,776	81

Disclosures under ASC 840

The following table summarizes the future minimum lease payments due under the Company's operating and finance leases as of December 31, 2019, presented in accordance with ASC 840, the relevant accounting standard at that time (in thousands):

Finance Leases	
Years ending December 31:	
2020	144
2021	99
2022	85
Total minimum payments	328
Less: Amount representing interest and taxes	(32)
Present value of future minimum payments	296
Less: Current portion	(111)
Long-term portion of finance lease liability	185

Operating Leases	
Years ending December 31:	
2020	826
2021	967
2022	997
2023	1,026
2024	1,057
2025	89
Total	4,962

Rent expense under the operating lease was approximately $0.5 million in 2019.

9. NOTES PAYABLE

Non-Recourse Secured Promissory Notes

In March of 2019, GATTACA and the Company jointly issued a Non-Recourse Secured Promissory Note (see Note 1) to SGI. The Purchase Note matured in September 2019, bore interest at 6% per annum, and was secured by all of the Company's assets. This note had a principal value of $10.0 million subject to a working capital adjustment. The principal was adjusted to approximately $9.8 million. In March of 2019, the fair value of this liability was $8.9 million based on the purchase price allocation (see Note 2). The note and accumulated interest were paid in full in August of 2019.

In March of 2019, GATTACA executed a Secured Note Purchase Agreement with an investor in the Company. The agreement was entered into in connection with GATTACA's purchase of the Company (see Note 1). Under the agreement, GATTACA borrowed $1.5 million in a series of transactions between March 2019 and August 2019. The notes issued under this agreement matured on the earlier of an acquisition event or June 30, 2022 and bore annual interest of 10% to be paid to the holder of such note on a monthly basis beginning on the earlier of a qualifying financing or July 2020. The proceeds of the note were used for working capital advances made to the Company. In connection with the Company's Series A convertible preferred stock financing in August 2019, the outstanding debt balance of $1.5 million of principal and approximately $0.1 million of accrued interest were converted into 541,677 shares of Series A convertible preferred stock.

In March of 2019, GATTACA executed a Secured Note Purchase Agreement with the Chief Executive Officer of the Company. Under the agreement, the Company borrowed $0.3 million to fund operations prior to selling preferred stock. Company (see Note 1). The note issued under this agreement matured on the earlier of an acquisition event or June 30, 2022 and bore annual interest of 10%, to be paid to the holder of such note on a monthly basis beginning on the earlier of a qualifying financing or July 2020. In connection with the Company's Series A convertible preferred stock financing in August 2019, the entire $0.3 million of principal and approximately $11,000 of accrued interest were converted into 90,747 shares of Series A convertible preferred stock.

Convertible Note

In July of 2019, the Company issued a convertible promissory note in the amount of $5.0 million. The note would have matured in July of 2022 and bore annual interest of 6% with the first payment due July 2022. In August of 2019, the Company completed the Series A convertible preferred stock financing and, under the terms of the note, the entire $5.0 million in principal and approximately $39,000 in accrued interest automatically converted into 1,751,999 shares of Series A convertible preferred stock.

Loan and Security Agreement

As of December 31, 2019 and 2020, the loans payable on the consolidated balance sheet pertains to the Loan and Security Agreement with Oxford and consists of the following (in thousands):

	December 31,	
	2019	2020
Principal amount of loans payable	$ 5,000	$ 5,000
Less: Current portion of loans payable	—	(1,333)
Loans payable, net of current portion	5,000	3,667
Accrued Interest	18	90
Final debt payment liability	287	287
Debt discount and financing costs, net of accretion	(833)	(691)
Loans payable, net of discount and current portion	$ 4,472	$ 3,353

In September 2019, the Company entered into a Loan and Security Agreement (the 2019 Loan Agreement) with Oxford. Under the agreement, the Company borrowed a total of $5.0 million in secured loans. The loans accrued interest at 8.79% per annum, had a tenor of 48 months and were secured by all of the Company's assets, other than its intellectual property, which is subject to a negative pledge. In addition, the Company has a contingent obligation to pay Oxford a success fee of $0.8 million upon a Liquidity Event (as defined in the success fee letter). On

December 31, 2019, the fair value of this contingent success fee liability was estimated at $0.4 million and was recorded as a derivative liability with the corresponding discount applied against the loans. Issuance costs related to the loans, inclusive of the success fee contingent liability, were $0.5 million. For the period from March 8, 2019 (inception) to December 31, 2019 and the year ended on December 31, 2020, the effective interest rate on outstanding borrowings was approximately 11.9%.

The interest rate was calculated at a rate equal to the greater of (i) 8.79% and (ii) the sum of (a) the 30-day U.S. LIBOR rate reported in The Wall Street Journal on the last business day of the month that immediately precedes the month in which the interest will accrue and (b) 6.38%. If LIBOR is no longer reported, the collateral agent could have selected a substantially similar replacement rate. Payments on the loans were interest-only until May 1, 2021, followed by equal monthly principal payments and accrued interest through the scheduled maturity date of October 1, 2023; provided, the interest-only period may have been extended to November 1, 2021 if, prior to April 30, 2021, the Company had achieved six consecutive months of trailing consolidated revenues of at least $10.5 million. A final payment (the Final Payment) equal to $287,500 (which was 5.75% of the aggregate original principal amounts of the loans) was due at the earlier of the maturity date, acceleration of the loans, or a voluntary or mandatory prepayment of the loans.

The Company may have prepaid the loans at any time. If the loans were prepaid prior to the maturity date, the Company was required to pay the lender a prepayment fee, equal to 3.0% of the then outstanding principal balance if the prepayment occurred on or before September 5, 2020, 2.0% of the then outstanding principal balance if the prepayment occurs after September 5, 2020 but on or before September 5, 2021, or 1.0% of the then outstanding principal balance if the prepayment occurs after September 5, 2021, but on or before September 5, 2022. No prepayment fee is applicable after September 5, 2022. Upon a voluntary or mandatory prepayment of the loans, in addition to such prepayment fee, the Company was also required to pay the lender’s expenses and all accrued but unpaid interest through the prepayment date.

The 2019 Loan Agreement included customary representations and covenants that, subject to exceptions and qualifications, restricted our ability to do the following things: declare dividends or redeem or repurchase equity interests; incur additional liens; make loans and investments; incur additional indebtedness; engage in mergers, acquisitions, and asset sales; transact with affiliates; undergo a change in control; add or change business locations; and engage in businesses that are not related to its existing business. In addition, the 2019 Loan Agreement contained customary affirmative covenants, including covenants regarding the payment of taxes and other obligations, maintenance of insurance, reporting requirements and compliance with applicable laws and regulations

The 2019 Loan Agreement also included standard events of default, including payment defaults, breaches of covenants following any applicable cure period, material misrepresentations, a failure of the lender’s security interest in the collateral to be perfected or to have the priority as required under the 2019 Loan Agreement, a material adverse change as defined in the 2019 Loan Agreement (including without limitation as a result of a government approval having been revoked, rescinded, suspended, modified or not renewed), certain material judgments and attachments, and events relating to bankruptcy or insolvency of the Company. The 2019 Loan Agreement also contained a cross default provision under which, if a third party (under any agreement) has a right to accelerate indebtedness greater than $250,000, the Company would be in default of the 2019 Loan Agreement. During the continuance of an event of default, the lender could apply a default interest rate of an additional 5.0% to the outstanding loan balances, and the lender could declare all outstanding obligations immediately due and payable and could exercise other rights and remedies as set forth in the 2019 Loan Agreement and related loan documents. Acceleration would result in the payment of any applicable prepayment fees, the Final Payment and any default interest charged by the lender.

As of December 31, 2020, the estimated future principal payments due were as follows:

Estimated future principal payments due		
2021	$	1,333
2022		2,000
2023		1,667
Total	$	5,000

The Company bifurcated a compound derivative liability related to the contingent interest feature and acceleration clause (contingent put option) under the 2019 Loan Agreement. The contingent put option liability was valued and separately accounted for in the Company's consolidated financial statements. The contingent put option liability is classified as a component of derivative liabilities on the consolidated balance sheet. As of December 31, 2019 and 2020, the estimated fair value of the contingent put option liability was $0.1 million, which was determined by using a risk-neutral valuation model wherein the fair value of the underlying debt facility is estimated, both with and without the presence of the default provisions, holding all other assumptions constant (see Note 4).

10. PREFERRED STOCK

The Company's Amended and Restated Certificate of Incorporation (the Amended and Restated Certificate), as filed in December of 2019 with the state of Delaware, authorizes the Company to issue 72,000,000 shares of common stock and 45,700,067 shares of preferred stock, all of which have a par value per share of $0.0001. Holders of preferred stock have rights to an 8% dividend when and if declared by the Board of Directors. 15,402,237 shares of preferred stock are designated "Series A-1 Preferred Stock", 22,797,830 shares of preferred stock are designated "Series A Preferred Stock", and 7,500,000 shares of preferred stock are designated "Series Z Preferred Stock" (collectively, the Series Preferred).

Preferred Stock

In December of 2019, the Company issued 4,980,055 shares of Series A-1 Preferred Stock for approximately $18.0 million. In the event of a deemed liquidation event, holders of Series A-1 Preferred Stock have rights to preferential payments approximately equal to $8.83 per share or $44.0 million in the aggregate. Issuance costs related to the Series A-1 financing were $33,000.

In August of 2019, the Company issued 7,599,274 shares of Series A Preferred Stock for approximately $21.9 million, including debt that was converted as part of the transaction. In the event of a deemed liquidation event, the holders of Series A Preferred Stock have rights to preferential payments approximately equal to $5.75 per share or $43.7 million in the aggregate. Issuance costs related to the Series A financing were $0.9 million.

Prior to March of 2019, the Company issued 2,500,000 shares of Series Z Preferred Stock at par value. In the event of a deemed liquidation event, holders of the Series Z Preferred Stock have rights to preferential payments approximately equal to $3.00 per share or $7.5 million in the aggregate.

Additional rights, preferences, privileges and restrictions relating to Series A Preferred Stock, Series A-1 Preferred Stock, and Series Z Preferred Stock (together the Series Preferred) at December 31, 2019 and 2020 are as set forth below (in thousands, except share amounts):

	Total shares authorized	Total shares issued and outstanding	Carrying value	Liquidation preference	Common shares issuable upon conversion
Series Z Preferred Stock	7,500,000	2,500,000	$ 1	$ 7,500	2,500,000
Series A Preferred Stock	22,797,830	7,599,274	20,992	43,717	7,599,274
Series A-1 Preferred Stock	15,402,237	4,980,055	17,921	43,989	4,980,055
Total	45,700,067	15,079,329	$ 38,914	$ 95,206	15,079,329

Dividends

The holders of the Series Preferred are entitled to receive non-cumulative dividends, when and if declared by the Board of Directors, prior to and in preference to any declaration or payment of dividends on the common stock. In the event dividends are paid on any share of common stock, the Company will also pay a dividend on all outstanding shares of preferred stock in a per share amount equal to the amount paid or set aside for each share of common stock, on an as-if-converted to common stock basis. No dividends have been declared or paid as of December 31, 2019 and 2020.

Voting

The holders of the Series Preferred are entitled to voting rights equal to the number of shares of common stock into which each share of preferred stock could be converted. The holders of Series A Preferred Stock, voting as a separate class, are entitled to elect one members of the Board of Directors. The holders of Common Stock, voting as a separate class, are entitled to elect one members of the Board of Directors. The remaining members of the Board of Directors will be elected by the holders of the common stock and preferred stock, voting together as a single class and on an as-converted basis.

Liquidation

In the event of any liquidation, dissolution or winding up of the Company, either voluntary or involuntary, the holders of preferred shares are entitled to preferential payments based on the original per share issue price or the amount they would be paid as common shareholders had they converted immediately prior to the liquidation event. The original per share issue price is equal to $3.61 for Series A-1 Preferred Stock, $2.88 for Series A Preferred Stock and $3.00 for Series Z Preferred Stock.

The Series A Preferred Stock and Series A-1 Preferred Stock are entitled to be paid, out of the available funds and assets, prior and in preference to any payment or distribution of any such funds on any shares of common stock or Series Z Preferred Stock, an amount per share equal to the greater of (a) twice the original issue price for the Series Preferred, plus all accrued and declared but unpaid dividends, and (b) the amount per share as would have been payable had all shares of Series A Preferred Stock and Series A-1 Preferred Stock converted to common stock. In addition, and prior to any further payments to holders of other classes of shares, the holders of Series A-1 Preferred Stock are entitled to a second payment of amount per share equal to 45% of the original issue price of Series A-1 Preferred Stock. Then, the holders of the Series Z Preferred Stock are entitled to be paid, out of the then available funds and assets, prior and in preference to any payment or distribution of any such funds on any shares of common stock, an amount per share equal to the greater of (a) the original issue price for the Series Preferred, plus all accrued and declared but unpaid dividends and (b) the amount per share as would have been payable had all shares of Series Z Preferred Stock been converted to common stock.

If assets are insufficient to permit such payments, payment will be distributed ratably among the holders of outstanding preferred stock in proportion to the amount owned by each holder. After the liquidation preference of the holders of the Series Preferred has been satisfied, the remaining assets of the Company will be distributed ratably among the holders of outstanding common stock in proportion to the amount owned by each holder.

Conversion

Each share of Series Preferred is convertible into shares of common stock, at the option of the holder, at any time after the date of issuance. Each share of Series Preferred automatically converts into the number of shares of common stock determined in accordance with the conversion rate upon the earlier of (i) the date specified by election of the holders of a majority of the shares of Series Preferred, or (ii) the closing of a public offering of common stock resulting in aggregate gross proceeds of at least $40.0 million and having a price per share to the public of at least $2.40 adjusted for splits, recapitalizations and the like. At December 31, 2019 and 2020, the conversion price for each share was equal to $3.61 for Series A-1, $2.88 for Series A Preferred Stock and $3.00 for Series Z Preferred Stock.

Redemption

The Series Preferred are not redeemable at the option of the holder.

Protection Provisions

The holders of Series Preferred have certain protective provisions. As long as at least 2,524,819 shares of Series A Preferred Stock and Series A-1 Preferred Stock remain outstanding, the Company cannot, without the approval of a majority in interest of Series Preferred holders, take any action that: (i) consummates a liquidation, dissolution or winding up of the Company; (ii) amends or repeals any provision of either the certificate of incorporation or the bylaws the Company; (iii) changes the rights, preferences or privileges of Series Preferred; (iv) creates or authorizes the creation of any capital stock having the rights, preferences or privileges senior or on a parity with preferred stock; (v) increases or decreases the authorized number of shares of preferred stock or common stock; (vi) results in redemption, repurchase, payment or declaration of dividends or other distributions with respect to shares of preferred stock or common stock other than permitted repurchases and dividends; (vii) permits a) the Company to

create or hold capital stock in a subsidiary that is not wholly owned, b) a subsidiary to issue, sell or transfer capital stock and c) a subsidiary to sell, lease, transfer, exclusively license or dispose of substantially of its assets; (viii) increases or decreases the authorized members of the Board of Directors; (ix) increases the number of shares under any employee stock option plan or create a new stock plan; (x) effect any transactions with related parties except as permitted or (xi) effect a material change in the activity or industry of the Company.

Preferred Stock Warrants

In connection with the Company's Series A-1 convertible preferred stock financing in December 2019, the Company issued a warrant to purchase up to 154,022 shares of Series A-1 Preferred Stock (the A-1 Warrants) to SGI at an exercise price of $3.61 per share, which was the exercise price stated in the financing agreement entered into with the Series A-1 investors at that time. The A-1 Warrants were recorded as a liability at their fair value, which was $0.2 million at both the issuance date and at December 31, 2019 and $0.6 million at December 31, 2020. The warrant liability is included in derivative liabilities on the Company's accompanying consolidated balance sheet. The A-1 Warrants were valued using the Black-Scholes option-pricing model, the inputs for which included the exercise price of the warrants, the fair value of the underlying preferred shares, the expected term, volatility based on a group of the Company's peers and the risk-free interest rate corresponding to the expected term of the warrants.

Participation Right and Common Stock Warrant

Prior to March 2019, the Company was a wholly owned subsidiary of SGI. As part of its divestiture of the Company in March of 2019, SGI retained a right to participate in a future merger, acquisition or initial public offering of the Company under certain conditions. This participation right was modified in August of 2019 to provide SGI with (i) a warrant exercisable into 1,081,745 shares of common stock of the Company, with an aggregate exercise price of $3.00 and (ii) a right to additional warrants exercisable into 3% of shares of common stock of the Company sold in future financings, if any, under certain conditions. The participation right was valued at $42,000 at the time of divestiture and was deemed to be of de minimis value as of December 31, 2019 due to warrants issued during the year and management's expectations of future financings. The value of the participation right was $0.4 million at December 31, 2020. As of December 31, 2019, the common stock warrants were valued at $0.8 million and recorded as financing costs of the Series A convertible preferred stock financing.

11. COMMON STOCK

Each share of common stock entitles the holder to one vote on all matters submitted to a vote of the Company's stockholders. Common stockholders are entitled to receive dividends, as may be declared by the board of directors, if any, subject to the preferential dividend rights of the convertible preferred stock. As of December 31, 2019 and 2020, no dividends had been declared or paid.

12. STOCK-BASED COMPENSATION

For the period from March 8, 2019 (inception) to December 31, 2019 and the year ended on December 31, 2020, the Company recorded stock-based compensation expense of approximately $11,000 and $43,000, respectively. No income tax benefit was recognized in the accompanying consolidated statement of operations and comprehensive loss for the Company's equity incentive plan.

The Company's Board of Directors approved the adoption of the SGI-DNA, Inc. 2019 Stock Plan (the 2019 Plan) in March of 2019. The Stock Plan permits the Company to grant up to 5,544,187 shares for options and restricted stock units of the Company's common stock.

The Stock Plan provides for the grant of incentive and nonstatutory stock options to employees, nonemployee directors and consultants of the Company. Options granted under the 2019 Plan generally become exercisable over a 4-year period following the date service begins and expire 10 years from the date of grant. The exercise price of incentive stock options granted under the 2019 Plan must be at least equal to 100% of the fair value of the Company's common stock at the date of the grant, except for greater than 10% stockholders for which the exercise price of incentive stock options granted under the 2019 Plan must be at least equal to 110% of the fair value of the Company's common stock at the date of the grant, as determined by the Board of Directors. The exercise price of nonstatutory options granted under the 2019 Plan must be at least equal to 100% of the fair value of the Company's common stock at the date of grant, as determined by the Board of Directors. The 2019 Plan grants the Company a right of first refusal to repurchase shares issued under the plan at a price set by the optionee. As of December 31, 2019 and 2020, there were no outstanding shares subject to these repurchase rights.

Stock option activity under the 2019 Plan for the period from March 8, 2019 (inception) to December 31, 2019 and year ended on December 31, 2020 are as follows:

	Number of options	Weighted average exercise price	Weighted average remaining contractual term (in years)	Aggregate intrinsic value (in thousands)
Balances at March 8, 2019 (Inception)	—	$ —	—	$ —
Options granted	765,505	0.54	9.5	—
Options cancelled	(59,957)	0.39	9.2	—
Balances at December 31, 2019	705,548	$ 0.55	9.5	$ 117
Options granted	303,065	0.72	9.3	—
Options exercised	(23,957)	0.49	8.5	93
Options cancelled	(224,497)	0.64	8.9	—
Balances at December 31, 2020	760,159	$ 0.60	8.7	$ 2,884
Vested and expected to vest at December 31, 2019	705,548	$ 0.55	9.5	$ 117
Vested and expected to vest at December 31, 2020	760,159	$ 0.60	8.7	$ 2,884
Exercisable at December 31, 2019	—	$ —	—	$ —
Exercisable at December 31, 2020	256,888	$ 0.56	8.5	$ 988

No options were exercised during the period from March 8, 2019 (inception) to December 31, 2019.

There were 765,505 and 303,065 options granted during the period from March 8, 2019 (inception) to December 31, 2019 and the year ended December 31, 2020, respectively. The weighted average grant date calculated fair value of options granted during the period from March 8, 2019 (inception) to December 31, 2019 and for the year ended on December 31, 2020 was $0.18 and $0.26 per share, respectively.

The calculated value of option grants during the period from March 8, 2019 (inception) to December 31, 2019 and for the year ended on December 31, 2020 were estimated using the Black-Scholes option pricing model with the following weighted average assumptions:

	Period from March 8, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020
Risk free interest rate	2.0 %	1.1 %
Expected dividend yield	— %	— %
Expected term (in years)	6.1 years	6.1 years
Expected volatility	32.9 %	36.4 %

Stock-based compensation expense related to stock options was classified in the consolidated statement of operations and comprehensive loss as follows (in thousands):

	Period from March 8, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020
Research and development	$ 4	$ 13
Sales and marketing	1	5
General and administrative	6	25
Total	$ 11	$ 43

As of December 31, 2020, total unrecognized stock-based compensation expense related to unvested stock-based awards was $0.1 million, which is expected to be recognized over a weighted average period of 2.6 years.

13. INCOME TAXES

The domestic and foreign components of pre-tax loss for the period from March 8, 2019 (inception) to December 31, 2019 and the year ended December 31, 2020 were as follows (in thousands):

	Period from March 8, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020
Domestic	$ (8,302)	$ (18,011)
Foreign	—	1
Total	$ (8,302)	$ (18,010)

The Company had no current or deferred federal and state income tax expense or benefit for the period from March 8, 2019 (inception) to December 31, 2019 or the year ended December 31, 2020 because the Company generated net operating losses, and currently management does not believe it is more likely than not that the net operating losses will be realized. The Company's non-U.S. tax obligation is primarily for business activities conducted through the United Kingdom subsidiary for which taxes were determined to be immaterial and accordingly, such amounts were excluded from the following tables.

A reconciliation of the U.S. federal statutory income tax rate to the Company's effective income tax rate is as follows:

	Period from March 8, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020
Federal statutory income (benefit) tax rate	(21.0)%	(21.0)%
State income taxes, net of federal benefit	(5.9)	(4.9)
Change in valuation allowance	27.6	27.2
Permanent items	0.7	1.2
Tax credits	(1.4)	(2.5)
Effective income tax rate	— %	— %

The components of our deferred tax assets and liabilities on December 31, 2019 and 2020 consisted of (in thousands):

	Period from March 8, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020
Deferred tax assets:		
Net operating loss carryforwards	$ 3,040	$ 7,045
Research and development tax credit carryforwards	199	865
Accruals and other	311	303
	3,550	8,213
Valuation Allowance	(2,664)	(7,554)
Total deferred tax assets	886	659
Deferred tax liabilities:		
Fixed assets	(156)	(80)
Intangibles	(730)	(579)
Total deferred tax liabilities	(886)	(659)
Net deferred tax assets	$ —	$ —

The Company has evaluated the positive and negative evidence bearing upon its ability to realize its deferred tax assets, which are composed principally of net operating loss carryforwards. Management has considered the Company's history of cumulative net losses incurred since inception and has concluded that it is more likely than not that the Company will not realize the benefits of its federal and state net deferred tax assets. Accordingly, a full valuation allowance has been established against the net deferred tax assets as of December 31, 2019 and 2020. The Company reevaluates the positive and negative evidence at each reporting period.

The changes in the valuation allowance for deferred tax assets during the period from March 8, 2019 (inception) to December 31, 2019, and the year ended December 31, 2020, related primarily to the increases in net operating loss carryforwards, research and development tax credits generated and accruals.

The valuation allowance increased by $2.3 million and $4.9 million during the year ended December 31, 2019 and 2020, respectively.

On March 27, 2020, the U.S. enacted the Coronavirus Aid, Relief, and Economic Security Act (the CARES Act). On December 21, 2020, the U.S. Congress passed the Consolidation Appropriations Act, 2021 (the CAA Act). The tax provisions under the CARES Act and CAA Act, do not have a material impact on the financial statements for the year ended December 31, 2019 and December 31, 2020 given the existence of the full valuation allowance.

On June 29, 2020 California Assembly Bill 85 (AB 85) was signed into law, which suspends the use of California net operating losses and limits the use of California research tax credits for tax years beginning in 2020 and before 2023. The Company does not expect the suspension of net operating losses and the restriction of research tax credits to have a significant impact on the financial statements.

As of December 31, 2019 and 2020, the Company had U.S. federal net operating loss carryforwards of $12.2 million and $28.4 million, respectively. The federal net operating loss carryforwards of $1.3 million, generated before January 1, 2018, will begin to expire in 2034 and the other $27.0 million will carryforward indefinitely but are subject to an 80 percent taxable income limitation. The Company also had federal research and development tax credit carryforwards of approximately $0.7 million which will begin to expire in 2039, if not utilized.

As of December 31, 2019 and 2020, the Company had state net operating loss carryforwards of $6.7 million and $15.9 million, respectively. The state net operating loss carryforwards of $15.9 million will begin to expire in 2036.

The Company also had California research and development tax credit carryforwards of approximately $0.5 million which do not expire.

The utilization of net operating losses and tax credit carryforwards may be subject to an annual limitation as a result of ownership changes that have occurred previously or may occur in the future. Under Sections 382 and 383 of the Internal Revenue Code (the Code), a corporation that undergoes an ownership change may be subject to limitations on its ability to utilize its pre-change net operating losses and other tax attributes otherwise available to offset future taxable income or tax liability. An ownership change is defined as a cumulative change of 50% or more in the ownership positions of certain stockholders during a rolling three-year period. The Company has not completed a formal study to determine if any ownership changes within the meaning of Code Section 382 and 383 have occurred. If such ownership change has occurred, the Company's ability to use its net operating losses or tax credit carryforwards may be restricted, which could require the Company to pay federal or state income taxes earlier than would be required if such limitations were not in effect.

The Company recognizes the financial statements benefit of a tax position only after determining that the relevant tax authority would more likely than not sustain the position following an audit. For tax positions meeting the more likely than not threshold, the amount recognized in the financial statements is the largest benefit that has a greater than 50% likelihood of being realized upon ultimate settlement with the relevant tax authority. The Company's policy is to record interest and penalties associated with uncertain tax positions as a component of income tax expense.

The following table shows the changes in the gross amount of unrecognized tax benefits as of December 31, 2019 and 2020 (in thousands):

Balance as of December 31, 2019	$	74
Increase of unrecognized tax benefits taken in prior years		—
Increase of unrecognized tax benefits taken in current year		242
Balance as of December 31, 2020	$	316

If the Company is able to recognize these uncertain tax positions, the unrecognized tax benefits would not impact the effective tax rate if the Company applies a full valuation allowance against the deferred tax assets, as provided in the Company's current policy.

The Company had not incurred any material tax interest or penalties as of December 31, 2020. The Company does not anticipate any significant change within 12 months of this reporting date of its uncertain tax positions. The Company is subject to taxation in the United States and various state jurisdictions, and the United Kingdom. There are no ongoing examinations by taxing authorities at this time. The Company's tax years 2014 through 2020 will remain open for examination by the federal and state authorities for three and four years, respectively, from the date of utilization of any net operating loss credits. The Company's 2020 tax year will remain open for examination by the United Kingdom tax authority for one year from the filing deadline.

14. COMMITMENTS AND CONTINGENCIES

Litigation

The Company may become involved in various claims, suits, and legal proceedings from time to time in the ordinary course of its business. The Company accrues a liability when it believes that it is both probable and the amount of loss can be reasonably estimated. While the outcome of such claims, lawsuits or other proceedings cannot be predicted with certainty, management expects that any liability, to the extent not provided for by insurance or otherwise, will not have a material adverse effect on the Company's consolidated financial position or results of operations.

Contingencies

As described in the above in Note 9, the Company has a success fee contingent liability to a creditor that may require a payment of $0.8 million. This contingent liability was recorded at its fair value of $0.5 million at December 31, 2020. The contingent liability is recorded as a component of derivative liabilities on the consolidated balance sheet and recorded as an offset against the notes payable as a debt financing cost in the accompanying consolidated balance sheet.

As described in Note 4, our former parent company has a participation right which requires the issuance of warrants equal to 3% of the shares raised in all future equity financings prior to an initial public offering or certain change of control transactions. As of December 31, 2020, the participation right liability was recorded at its fair value of $0.4 million as a component of derivative liabilities on the consolidated balance sheet.

Leases

The Company's non-cancelable lease commitments are described in Note 8.

15. NET LOSS PER SHARE

Net loss per share

Basic and diluted net loss per share attributable to common stockholders was calculated as follows (in thousands, except share and per share amounts:):

	Period from March 8, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020
Numerator:		
Net loss	$ (8,302)	$ (18,010)
Net loss attributable to common stockholders	$ (8,302)	$ (18,010)
Denominator:		
Weighted average common stock outstanding - basic and diluted	5,000,000	5,001,538
Net loss per share attributable to common stockholders - basic and diluted	$ (1.66)	$ (3.60)

The Company's potential dilutive securities have been excluded from the computation of diluted net loss per share as the effect would be to reduce the net loss per share. Therefore, the weighted-average number of common shares outstanding used to calculate both basic and diluted net loss per share attributable to common stockholders is the same. The Company excluded the following potential common shares from the computation of diluted net loss per share attributable to common stockholders for the periods indicated because including them would have had an anti-dilutive effect:

	Period from March 8, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020
Series Z convertible preferred stock (as converted to common stock)	2,500,000	2,500,000
Series A convertible preferred stock (as converted to common stock)	7,599,274	7,599,274
Series A-1 convertible preferred stock (as converted to common stock)	4,980,055	4,980,055
Warrants to purchase common stock	1,081,745	1,081,745
Warrants to purchase Series A-1 convertible preferred stock (as converted to common stock)	154,022	154,022
Stock options to purchase common stock	705,548	760,159
Total	17,020,644	17,075,255

16. RETIREMENT PLAN

The Company has a retirement saving plan (the 401(k) Plan) that allows participating employees to defer a portion of their annual compensation on a pretax basis. The Company made no contributions to the 401(k) Plan for the period from March 8, 2019 (inception) to December 31, 2019 and for the year ended on December 31, 2020.

17. RELATED PARTY TRANSACTIONS

As discussed in Note 9, GATTACA obtained $1.5 million in notes from investors owning greater than 5% of the Company's outstanding stock and $0.3 million in notes from the Company's Chief Executive Officer in order to fund operations of the Company. These notes and approximately $0.1 million of accrued interest were assigned to the Company and converted into shares of Series A convertible preferred stock as part of the Series A financing.

During the year ended December 31, 2020, the Company made payments to SGI of approximately $0.2 million for services relating to intellectual property matters, including patent filings and patent prosecution.

18. SUBSEQUENT EVENTS

The Company has evaluated subsequent events through March 16, 2021, the date these consolidated financial statements were issued.

Long-Term Loan

In March 2021, the Company entered into a term loan facility with Silicon Valley Bank (SVB) pursuant to a Loan and Security Agreement with SVB as the lender (the 2021 Loan Agreement). Effective as of March 5, 2020, the Company repaid in full its borrowings under the 2019 Loan Agreement using part of the proceeds from a $15.0 million loan borrowed under the 2021 Loan Agreement. Under the 2021 Loan Agreement, the lender may elect to make a second term loan to the Company in a principal amount up to but not exceeding $5.0 million, as SVB may determine in its sole discretion. The loans bear interest at a per annum rate equal to the greater of (a) 4.0% above the prime rate and (b) 7.25%. The loans mature on January 1, 2024; provided, the loan maturity date will be extended by one year to January 1, 2025, if SVB is satisfied that the Company has achieved at least $4.0 million in trailing three-month instruments and reagents revenue for any three-month period occurring after March 4, 2021 but ending on or before December 31, 2021, subject to confirmatory lender calls. Payments on the term loans are interest-only until February 1, 2022, followed by equal principal payments and monthly accrued interest payments through the scheduled maturity date; provided, the interest-only period may be extended to August 1, 2022 if SVB is satisfied that the Company has achieved at least $4.0 million in trailing three-month instruments and reagents revenue for any three-month period occurring after March 4, 2021, but ending on or before December 31, 2021, subject to confirmatory lender calls.

In connection with the 2021 Loan Agreement, the Company issued to SVB a warrant to purchase a number of shares of preferred stock (the Preferred Warrant). The Preferred Warrant is exercisable into the number of preferred shares equal to $225,000 divided by the applicable warrant price. The Preferred Warrant also provides for the grant of additional shares upon the disbursement of an advance under the loan. Such additional shares will be equal to 1.5% of principal amount of the advances divided by the then applicable warrant price, as defined in the 2021 Loan Agreement. The Preferred Warrant is exercisable at either the original purchase price of the Series A-1 convertible preferred stock or the next convertible preferred stock financing if such round is closed on or before August 1, 2021. If the class of preferred which the warrant would be exercisable into is converted into common stock, the warrant holder would have the right to exercise the warrant for such number of common shares into which the preferred shares would have converted into had they been exercised prior to the conversion. Unless previously exercised, the Preferred Warrant will expire on March 4, 2031. The Preferred Warrant may be exercised at any time, in whole or in part. No portion of the Preferred Warrant has been exercised.

Amendment to Certificate of Incorporation

On March 3, 2021, the Company amended its Amended and Restated Certificate of Incorporation to increase the authorized number of shares of preferred stock and Series A-1 convertible preferred stock by 249,632 shares each, resulting in 45,949,693 and authorized number of shares of Series A-1 convertible preferred stock to 15,651,863.

2021 Equity Incentive Plan

On March 3, 2021, the Company's board of directors and stockholders approved the termination of the 2019 Plan and the adoption of the 2021 Plan. 4,300,000 common shares were initially reserved for issuance under the 2021 Plan.

On March 3, 2021, the Board of Directors of the Company authorized the issuance of an aggregate of 662,108 stock options to employees, at an exercise price of $4.38 per share under the 2021 Plan.

Reverse Stock Split

On June 10, 2021, the Company's board of directors and stockholders approved a 3-for-1 reverse stock split of the Company's issued and outstanding common stock and outstanding shares of convertible preferred stock, which was effected on June 11, 2021. The reverse stock split also applied to all outstanding securities or rights convertible into, or exchangeable or exercisable for, common stock or convertible preferred stock. Accordingly, all shares, stock options, warrants and per share information presented in the accompanying financial statements and notes thereto have been retroactively adjusted to reflect the reverse stock split. There was no change in the par value and authorized number of shares of the Company's common stock or preferred stock.

INDEX TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)

Codex DNA, Inc.
Condensed Consolidated Balance Sheet
(In thousands, except share and per share data)
(Unaudited)

	December 31, 2020	March 31, 2021
Assets		
Current assets:		
Cash	$ 13,463	$ 17,834
Accounts receivable, net of allowance for bad debts of $105 and $0 at December 31, 2020 and March 31, 2021, respectively	2,266	1,716
Inventory, net	601	723
Prepaid expenses and other current assets	851	1,623
Total current assets	17,181	21,896
Property and equipment, net	689	698
Right-of-use assets	3,090	2,934
Long-term deposits	81	81
Goodwill	3,497	3,497
Other intangible assets, net	2,325	2,212
Total Assets	$ 26,863	$ 31,318
Liabilities, convertible preferred stock and stockholders' deficit		
Current liabilities:		
Accounts payable	$ 1,191	$ 1,206
Accrued employee expenses	1,470	1,798
Finance lease liability, current portion	90	81
Operating lease liability, current portion	693	716
Deferred revenue, current portion	606	553
Other accrued liabilities	220	1,123
Notes payable, current portion	1,333	—
Other current liabilities	22	106
Total current liabilities	5,625	5,583
Finance lease liability, net of current portion	81	60
Operating lease liability, net of current portion	2,776	2,590
Notes payable, net of discount and current portion	3,353	14,372
Derivative liabilities	1,533	2,403
Deferred revenue, net of current portion	40	97
Total liabilities	$ 13,408	$ 25,105
Commitments and contingencies (Note 13)		
Convertible preferred stock		
Series Z Preferred stock, $.0001 par value; 7,500,000 shares authorized at December 31, 2020 and March 31, 2021; 2,500,000 shares issued and outstanding at December 31, 2020 and March 31, 2021	1	1
Series A Preferred stock, $.0001 par value; 22,797,830 shares authorized at December 31, 2020 and March 31, 2021; 7,599,274 shares issued and outstanding at December 31, 2020 and March 31, 2021	20,992	20,992
Series A1 Preferred stock, $.0001 par value; 15,402,237 and 15,651,863 shares authorized at December 31, 2020 and March 31, 2021, respectively; 4,980,055 shares issued and outstanding at December 31, 2020 and March 31, 2021	17,921	17,921
Stockholders' deficit		
Common stock, $.0001 par value; 72,000,000 shares authorized at December 31, 2020 and March 31, 2021; 5,023,957 and 5,247,173 shares issued and outstanding at December 31, 2020 and March 31, 2021, respectively	2	2
Additional paid-in capital	851	1051
Accumulated deficit	(26,312)	(33,754)
Total stockholders' deficit	(25,459)	(32,701)
Total liabilities, convertible preferred stock and stockholders' deficit	$ 26,863	$ 31,318

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

Codex DNA, Inc.
Condensed Consolidated Statements of Operations and Comprehensive Loss
(in thousands, except share and per share data)
(Unaudited)

	Three Months Ended March 31,	
	2020	2021
Revenue:		
Product sales	$ 1,048	$ 1,799
Royalties	339	528
Total revenue	1,387	2,327
Cost of revenue	574	1,025
Gross profit	813	1,302
Operating expenses:		
Research and development	1,963	2,878
Sales and marketing	1,299	2,275
General and administrative	1,146	2,413
Total operating expenses	4,408	7,566
Loss from operations	(3,595)	(6,264)
Other income (expense):		
Interest expense, net	(192)	(241)
Change in fair value of derivative liabilities	(93)	(296)
Loss on extinguishment of debt	—	(618)
Other expense, net	—	(19)
Total other expense, net	(285)	(1,174)
Loss before provision for income taxes	(3,880)	(7,438)
Provision for income taxes	—	(4)
Net loss and comprehensive loss	$ (3,880)	$ (7,442)
Net loss attributable to common stockholders	$ (3,880)	$ (7,442)
Net loss per share attributable to common stockholders—basic and diluted	$ (0.78)	$ (1.43)
Weighted average common stock outstanding—basic and diluted	5,000,000	5,193,098

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

Codex DNA, Inc.
Condensed Consolidated Statements of Convertible Preferred Stock and Stockholders' Deficit
(in thousands, except share data)
(Unaudited)

	Convertible Preferred Stock		Common Stock		Additional Paid-In Capital	Accumulated Deficit	Total Stockholders' Deficit
	Shares	Amount	Shares	Amount			
Balance at December 31, 2019	15,079,329	$ 38,914	5,000,000	$ 2	$ 797	(8,302)	$ (7,503)
Stock-based compensation expense	—	—	—	—	15	—	15
Net loss	—	—	—	—	—	(3,880)	(3,880)
Balances at March 31, 2020	15,079,329	$ 38,914	5,000,000	$ 2	$ 812	$ (12,182)	$ (11,368)
Balances at December 31, 2020	15,079,329	$ 38,914	5,023,957	$ 2	$ 851	$ (26,312)	$ (25,459)
Issuance of Common Stock upon exercise of stock options	—	—	223,216	—	133	—	133
Stock-based compensation expense	—	—	—	—	67	—	67
Net loss	—	—	—	—	—	(7,442)	(7,442)
Balances at March 31, 2021	15,079,329	$ 38,914	5,247,173	$ 2	$ 1,051	$ (33,754)	$ (32,701)

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

Codex DNA, Inc.
Condensed Consolidated Statements of Cash Flows
(in thousands)
(Unaudited)

	Three Months Ended March 31,	
	2020	**2021**
Cash Flows From Operating Activities:		
Net loss	$ (3,880)	$ (7,442)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation	105	90
Amortization of intangible assets	122	113
Amortization of debt discount	53	161
Loss on debt extinguishment	—	618
Stock-based compensation	15	67
Amortization of lease right-of-use assets	144	156
Change in fair value of derivative liabilities	94	296
Non-cash interest on finance leases	(5)	(3)
Changes in assets and liabilities:	—	
Accounts receivable	10	550
Inventories	331	(122)
Deposits, prepaid expenses and other current assets	(510)	(772)
Accounts payable, accrued payroll and accrued liabilities	105	1,330
Deferred revenue	126	4
Operating lease liabilities	(103)	(163)
Net cash used in operating activities	(3,393)	(5,117)
Cash Flows From Investing Activities:		
Purchase of property and equipment	(10)	(99)
Net cash used in investing activities	(10)	(99)
Cash Flows From Financing Activities:		
Borrowings on term loan	—	14,872
Repayment of term loan	—	(5,000)
Debt extinguishment costs	—	(391)
Finance lease liability	(27)	(27)
Proceeds from the exercise of common stock options	—	133
Net cash (used in) provided by financing activities	(27)	9,587
Net (Decrease) Increase In Cash	(3,430)	4,371
Cash at beginning of period	29,144	13,463
Cash at end of period	$ 25,714	$ 17,834
Supplemental Disclosure Of Cash Flow Information:		
Cash paid for interest	$ 116	$ 163
Purchases of property and equipment included in accounts payable	$ —	$ 23
Issuance of preferred stock warrant in connection with term loan	$ —	$ 322
Extinguishment of put option derivative liability in connection with term loan	$ —	$ (51)
Issuance of put option derivative liability in connection with term loan	$ —	$ 303

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

Codex DNA, Inc.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

1. ORGANIZATION AND OPERATIONS

Business

Codex, DNA, Inc. (the Company) was incorporated in the state of Delaware in March 2011, as Synthetic Genomics Solution, Inc., a wholly owned subsidiary of Synthetic Genomics, Inc. (SGI). The Company changed its name to SGI-DNA, Inc. (SGI-DNA) in February 2013, and then to Codex DNA, Inc. in March 2020. SGI-DNA Limited, a United Kingdom company focused on sales and marketing activities, is a wholly owned subsidiary of Codex DNA, Inc. The Company manufactures and sells laboratory equipment, specifically synthetic biology instruments, reagents and associated products and related services, primarily to pharmaceutical and academic laboratories worldwide.

On March 8, 2019, SGI sold SGI-DNA to GATTACA Mining, LLC (Purchaser or GATTACA) by entering into a stock purchase agreement to sell all of the Company's outstanding common and preferred stock in exchange for a $10 million non-recourse promissory note. Both the Company and Purchaser are co-borrowers of the promissory note. As this transaction was a change in control transaction in accordance with generally accepted accounting principles in the United States (US GAAP), the Company elected to apply push-down accounting and recognized a step up in the basis of the assets acquired and liabilities assumed in the acquisition.

Since its inception, the Company has devoted substantially all of its efforts to raising capital, commercializing its current products, and developing new product offerings. The Company is subject to a number of risks similar to those of other companies conducting high-risk, early-stage research and development of products. Principal among these risks are a dependence on key individuals and intellectual property, competition from other products and companies, and the technical risks associated with the successful research, development and manufacturing of its products. The Company's success is dependent upon its ability to continue to raise additional capital in order to fund ongoing research and development, commercialize its products, generate revenue, meet its obligations, and, ultimately, become profitable.

Products currently under development will require significant additional research and development efforts. These efforts require significant amounts of additional capital, adequate personnel and infrastructure.

Going Concern

The Company has evaluated whether there are conditions and events, considered in the aggregate, that raise substantial doubt about the Company's ability to continue as a going concern within one year after the date the unaudited condensed consolidated financial statements are issued.

Since inception, the Company has incurred cumulative operating losses and negative cash flows from operations. These operating losses and negative cash flows have been financed principally from the issuance of equity securities and debt. The Company's ability to continue as a going concern is dependent upon the ability to raise additional debt or equity capital. There can be no assurance that such capital will be available in sufficient amounts or on terms acceptable to the Company. These factors raise substantial doubt about the Company's ability to continue as a going concern. Risks to which the Company is exposed include uncertainties related to the ability to achieve revenue-generating products; current and potential competitors with greater financial, technological, production, and marketing resources; dependence on key management personnel; and raising additional capital, as needed. Based upon the Company's current plans, management believes there currently is insufficient financial resources to fund the Company's operations for at least twelve months from the issuance date of the accompanying condensed consolidated financial statements.

To address the Company's capital needs, the Company must continue to actively pursue additional equity or debt financing. The Company has been in ongoing discussions with different sources of capital, including financial institutions with respect to such financing. Adequate financing opportunities might not be available to the Company, when and if needed, on acceptable terms or at all. If the Company is unable to obtain additional financing in sufficient amounts or on acceptable terms under such circumstances, the Company's operating results and prospects will be adversely affected.

The accompanying condensed consolidated financial statements have been prepared on a going concern basis, which contemplates the realization of assets and satisfaction of liabilities in the ordinary course of business. The condensed consolidated financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or the amounts and classification of liabilities that might result from the outcome of this uncertainty.

Impact of COVID-19

In December 2019, a novel strain of coronavirus, which causes the disease known as COVID-19, was reported to have surfaced in Wuhan, China. Since then, COVID-19 coronavirus has spread globally. In March 2020, the World Health Organization declared the COVID-19 outbreak a pandemic. The ongoing COVID-19 global and national health emergency has caused significant disruption in the international and United States economies and financial markets. The spread of COVID-19 has caused illness, quarantines, cancellation of events and travel, business and school shutdowns, reduction in business activity and financial transactions, labor shortages, supply chain interruptions and overall economic and financial market instability.

In response to public health directives and orders and to help minimize the risk of the virus to employees, the Company has taken precautionary measures, including implementing work-from home policies for certain employees. The COVID-19 pandemic has the potential to significantly impact the Company's manufacturing supply chain, distribution or logistics and other services. Additionally, the Company's service providers and their operations may be disrupted, temporarily closed or experience worker or supply shortages, which could result in additional disruptions or delays in shipments of laboratory equipment or the advancement of the scientific research. To date, the Company is not aware of any such disruptions. Furthermore, to date, the Company has not experienced the pandemic's adverse impacts in any material respect. The Company is not able to estimate the duration of the pandemic or potential impact on the business if disruptions or delays in shipments of product occur. In addition, a severe prolonged economic downturn could result in a variety of risks to the business, including weakened demand for product and a decreased ability to raise additional capital when needed on acceptable terms, if at all. As the situation continues to evolve, the Company will continue to closely monitor market conditions and respond accordingly.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Significant Accounting Policies

The Company's significant accounting policies are disclosed in the audited consolidated financial statements for the year ended December 31, 2020, included elsewhere in this prospectus. Since the date of those financial statements, there have been no changes to its significant accounting policies except as noted below.

Basis of Presentation and Principles of Consolidation

The Company has prepared the accompanying condensed consolidated financial statements in accordance with U.S. GAAP and included the accounts of the Company and its wholly owned subsidiary after the elimination of all significant intercompany accounts and transactions. Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. GAAP have been omitted pursuant to instructions, rules, and regulations prescribed by the United States Securities and Exchange Commission. Management believes that the disclosures provided herein are adequate to make the information presented not misleading when these unaudited condensed consolidated financial statements are read in conjunction with the audited consolidated financial statements and notes thereto as of and for the year ended December 31, 2020.

Unaudited interim financial information

The accompanying condensed consolidated balance sheet as of March 31, 2021, the condensed consolidated statements of operations and comprehensive loss, condensed consolidated statements of convertible preferred stock and stockholders' equity (deficit) and the condensed consolidated statements of cash flows for the three months ended March 31, 2020 and 2021 are unaudited. The unaudited interim consolidated financial statements have been prepared on the same basis as the audited consolidated annual financial statements and, in the opinion of management, reflect all adjustments, which include only normal recurring adjustments, necessary for the fair statement of the Company's financial position as of March 31, 2021 and the results of its operations and its cash flows for the three months ended March 31, 2020 and 2021. The financial data and other information disclosed in these notes related to the three months ended March 31, 2020 and 2021 are also unaudited. The results for the

three months ended March 31, 2021 are not necessarily indicative of results to be expected for the year ending December 31, 2021, any other interim periods, or any future year or period.

3. FAIR VALUE MEASUREMENT

The following table summarizes the fair values of the Company's derivative liabilities on the condensed consolidated balance sheets which comprise the participation right liability, warrant liability, contingent put liability, and success fee contingent liability which are all deemed Level 3 liabilities (in thousands):

	Fair value measurements as of December 31, 2020			
	Level 1	Level 2	Level 3	Total
Liabilities				
Participation right liability	$ —	$ —	$ 420	$ 420
Warrant liability	—	—	594	594
Contingent put option liability	—	—	51	51
Success fee contingent liability	—	—	468	468
Total	$ —	$ —	$ 1,533	$ 1,533

	Fair value measurements as of March 31, 2021			
	Level 1	Level 2	Level 3	Total
Liabilities				
Participation right liability	$ —	$ —	$ 390	$ 390
Warrant liability	—	—	1,114	1,114
Contingent put option liability	—	—	303	303
Success fee contingent liability	—	—	596	596
Total	$ —	$ —	$ 2,403	$ 2,403

During the year ended December 31, 2020 and the three months ended March 31, 2021, there were no transfers between Level 1, Level 2 and Level 3.

The quantitative elements associated with the Company's Level 3 inputs impacting the fair value measurement of the participation right liability include management's expectation of amounts to be raised and the probability of success in obtaining the funds. The Company determines the estimated capital raised from the financing round to be $20.0 million with a probability of success of 70%. The fair value was determined by multiplying the amount expected to be raised versus the probability of success and the percentage right (3%). As of December 31, 2020 and March 31, 2021, the fair value of the participation right was valued at $0.4 million.

Preferred Stock Warrants

The preferred stock warrant liability consists of the fair value of warrants to purchase Series A-1 Preferred Stock issued in conjunction with the Series A-1 financing in December 2019 with SGI (see Note 9) and the 2021 Loan Agreement (See Note 8) and was based on significant inputs not observable in the market, which represent a Level 3 measurement within the fair value hierarchy. As of December 31, 2020 and March 31, 2021, the fair value of the Series A-1 convertible preferred stock warrant was $3.87 and $5.16 per share, respectively.

The following reflects the significant quantitative inputs used in the valuation of the preferred stock warrant liability:

	December 31, 2020	March 31, 2021
Risk-free interest rate	0.1 %	0.2 %
Expected term	2.0 years	2.0 years
Expected volatility	83.6 %	85.0 %
Expected dividend yield	0.0 %	0.0 %

Contingent Put Option Liability

The contingent put option liability consists of the fair value of the contingent interest feature and acceleration clause (contingent put option) under the 2019 Loan Agreement and 2021 Loan Agreement (see Note 8). The fair value of the contingent put option liability was based on significant inputs not observable in the market, which represent a Level 3 measurement within the fair value hierarchy. The Company's valuation of the contingent put option liability utilized a risk-neutral valuation model wherein the fair value of the underlying debt facility is estimated, both with and without the presence of the default provisions, holding all other assumptions constant. The Company assesses these assumptions and estimates at least annually as additional information impacting the assumptions are obtained. Changes in the fair value of the contingent put option liability are recognized in other income (expense) as part of the change in fair value of derivative liabilities in the condensed consolidated statement of operations and comprehensive loss.

Success Fee Contingent Liability

The success fee contingent liability consists of the fair value of contingent obligation to pay the lender a success fee of $0.8 million upon a Liquidity Event under the 2019 Loan Agreement (see Note 8). The fair value of the success fee contingent liability was based on significant inputs not observable in the market, which represent a Level 3 measurement within the fair value hierarchy. The Company's valuation of the success fee contingent liability utilized a liquidity event scenario analysis discounted at the Company's cost of capital. This analysis consists of both the probability adjusted value of the success fee based on liquidity scenarios, and the risk adjusted present value of the success fee discounted at the Company's cost of capital on the valuation date, to take into account the risk of achieving the liquidity scenarios. The Company assesses these assumptions and estimates at least annually as additional information impacting the assumptions are obtained. Changes in the fair value of the success fee contingent liability are recognized in other income (expense) as part of the change in fair value of derivative liabilities in the condensed consolidated statement of operations and comprehensive loss.

The following table provides a roll-forward of the aggregate fair value of the Company's derivative liabilities for which fair value is determined using Level 3 inputs (in thousands):

	Participation right liability	Warrant liability	Contingent put liability	Success fee contingent liability
Fair value at December 31, 2019	$ —	$ 169	$ 106	$ 379
Change in fair value	—	20	61	13
Fair value at March 31, 2020	$ —	$ 189	$ 167	$ 392

	Participation right liability	Warrant liability	Contingent put liability	Success fee contingent liability
Fair value at December 31, 2020	—	189	167	392
Extinguishment of liability	—	—	(51)	—
Issuance of liability	—	322	303	—
Change in fair value	(30)	198	—	128
Fair value at March 31, 2021	$ (30)	$ 709	$ 419	$ 520

For the three months ended March 31, 2020 and 2021, the Company recorded a change in fair value of derivative liabilities included in other income (expense) of $0.1 million and $0.3 million, respectively.

4. INVENTORY

Inventories include material, labor and overhead and are stated at the lower of cost (first-in and first-out method) or net realizable value. The components of inventory are as follows as of December 31, 2020 and March 31, 2021 (in thousands):

	December 31, 2020	March 31, 2021
Raw materials	$ 299	$ 263
Work in process and sub-assemblies	201	235
Finished goods	101	225
Total	$ 601	$ 723

5. PROPERTY AND EQUIPMENT

Property and equipment consisted of the following on December 31, 2020 and March 31, 2021 (in thousands):

	December 31, 2020	March 31, 2021
Machinery and equipment	$ 1,315	$ 1,396
Computer hardware and software	6	6
Leasehold improvements	32	39
Construction in progress	102	113
Total	1,455	1,554
Less: Accumulated depreciation and amortization	(766)	(856)
Total property and equipment, net	$ 689	$ 698

Depreciation expense for the each of the three months ended March 31, 2020 and 2021 was $0.1 million, and is included in operating expenses.

6. GOODWILL AND OTHER INTANGIBLE ASSETS

Goodwill

As part of the March 8, 2019 transaction (see Note 1), the Company acquired its intangible assets with resulting goodwill. The resulting goodwill carries a value of approximately $3.5 million. Due to the recent decline in global economic and labor market conditions caused by the global outbreak of the COVID-19 pandemic, the Company considered the effects on its goodwill and determined that there was no material significant impact that would cause a change in its analysis. There were no other events or circumstances that have changed since the last annual assessment that could reduce the fair value of the Company's reporting segments below its carrying values.

For the three months ended March 31, 2020 and 2021, the Company did not record any impairment of goodwill.

Other Intangible Assets

Other intangible assets include the rights to technology and the SGI-DNA trade name. The Company engaged an independent consultant to value the intangible assets and to determine the useful lives. The technology was valued at approximately $3.2 million with a seven year useful life and the SGI-DNA trade name at approximately $0.1 million with a three year useful life. During 2020, the Company changed its name to Codex DNA, Inc. (See Note 1), the amount allocated to the trade name of $0.1 was deemed impaired and written off in April 2020.

Amortization expense for each of the three months ended March 31, 2020 and 2021 was approximately $0.1 million.

The following table summarizes the estimated future amortization expense of the intangible assets (in thousands):

Years ending December 31:	
2021	$ 450
2022	450
2023	450
2024	450
2025	450
Thereafter	75
Total	$ 2,325

7. LEASES

As of March 31, 2021, the Company had four outstanding leases for office and scientific manufacturing equipment. The leases have terms between 25 and 60 months.

The components of lease cost under ASC 842 are as follows (in thousands):

	March 31, 2020	**March 31, 2021**
Lease costs		
Finance lease cost:		
Payment of finance lease liability	$ 27	$ 27
Interest on lease liabilities	5	3
Amortization of right-of-use asset	144	156
Variable lease cost	76	112
Total lease cost	$ 252	$ 298

Supplemental disclosure of cash flow information related to leases are as follows (in thousands):

	March 31, 2020	March 31, 2021
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	$ 189	$ 238
Operating cash flows from finance leases	$ 5	$ 3
Financing cash flows from finance leases	$ 27	$ 27

The weighted-average remaining lease term and discount rate were as follows:

	March 31, 2020	March 31, 2021
Weighted-average remaining lease term		
Finance leases	2.4 years	1.7 years
Operating leases	4.8 years	3.8 years
Weighted-average discount rate		
Finance leases	8.0 %	7.7 %
Operating leases	8.9 %	8.9 %

The following table summarizes the minimum lease payments of the Company's operating and finance lease liabilities as of March 31, 2021 (in thousands):

Year Ending December 31,	Operating	Finance
2021	$ 730	$ 67
2022	997	85
2023	1,026	—
2024	1,057	—
2025	89	—
Thereafter	—	—
Total future minimum lease payments	3,899	152
Less: imputed interest	(593)	(11)
Present value of operating lease liability	$ 3,306	$ 141
Less: current portion of lease liability	(716)	(81)
Non-current portion of lease liability	2,590	60

8. NOTES PAYABLE

Loan and Security Agreement

As of December 31, 2020 and March 31, 2021, the loans payable on the condensed consolidated balance sheets pertains to the Loan and Security Agreement with Oxford and the Loan and Security Agreement with Silicon Valley Bank, respectively, and consists of the following (in thousands):

	December 31, 2020	March 31, 2021
Principal amount of loans payable	$ 5,000	$ 15,000
Less: Current portion of loans payable	(1,333)	—
Loans payable, net of current portion	3,667	15,000
Accrued Interest	90	78
Final debt payment liability	287	400
Debt discount and financing costs, net of accretion	(691)	(1,106)
Loans payable, net of discount and current portion	$ 3,353	$ 14,372

2021 Loan Agreement

On March 4, 2021, the Company entered into a Loan and Security Agreement with Silicon Valley Bank (SVB) as the lender (the 2021 Loan Agreement). Under the 2021 Loan Agreement, the Company borrowed a $15.0 million senior secured term loan, the proceeds of which were used to repay all existing obligations under the 2019 Loan Agreement, with the remaining proceeds available for working capital and general corporate purposes. Under the 2021 Loan Agreement, SVB may elect to make a second term loan to the Company in a principal amount up to but not exceeding $5.0 million, as SVB may determine in its sole discretion.

In connection with the 2021 Loan Agreement, the Company issued to SVB a warrant to purchase a number of shares of preferred stock (the Preferred Warrant). The Preferred Warrant is exercisable into the number of preferred shares equal to approximately $0.2 million divided by the applicable warrant price. The Preferred Warrant also provides for the grant of additional shares upon the disbursement of an advance under the 2021 Loan Agreement. Such additional shares will be equal to 1.5% of the principal amount of the advance divided by the warrant price. The Preferred Warrant is exercisable at either the original purchase price of the Series A-1 convertible preferred stock or the next convertible preferred stock financing if such round is closed on or before August 1, 2021. If the class of convertible preferred stock in which the warrant would be exercisable into is converted into common stock, the warrant holder would have the right to exercise the warrant for such number of common shares into which the preferred shares would have converted into had they been exercised prior to the conversion. Unless previously exercised, the Preferred Warrant will expire on March 4, 2031. The Preferred Warrant may be exercised at any time, in whole or in part. No portion of the Preferred Warrant has been exercised. The Preferred Warrant was valued at $0.3 million and separately accounted for in the Company's condensed consolidated financial statements as a component of derivative liabilities on the condensed consolidated balance sheets.

The term loan bears interest at a per annum rate equal to the greater of (a) 4.0% above the prime rate and (b) 7.25%. The interest rate as of March 5, 2021 was 7.25% per annum. The loans are secured by substantially all of the Company's assets, other than intellectual property. The Company has agreed not to encumber our intellectual property assets, except as permitted by the 2021 Loan Agreement. For the three months ended March 31, 2021, the effective interest rate on outstanding borrowings was approximately 10.40%.

The term loans mature on January 1, 2024; provided, the loan maturity date will be extended by one year to January 1, 2025, if SVB is satisfied that we have achieved at least $4.0 million in trailing three-month instruments and reagents revenue for any three-month period occurring after March 4, 2021 but ending on or before December 31, 2021, subject to confirmatory lender calls.

Payments on the term loans are interest-only until February 1, 2022, followed by equal principal payments and monthly accrued interest payments through the scheduled maturity date; provided, the interest-only period may be extended to August 1, 2022 if SVB is satisfied that we have achieved at least $4.0 million in trailing three-month

product revenue for any three-month period occurring after March 4, 2021, but ending on or before December 31, 2021, subject to confirmatory lender calls.

The Company may elect to prepay the term loans, in whole but not in part, at any time. If the Company elects to voluntarily prepay the term loans before the scheduled maturity date, the Company is required to pay the lender a prepayment fee, equal to 3.0% of the then outstanding principal balance if the prepayment occurs on or before March 4, 2022, 2.0% of the outstanding principal balance if the prepayment occurs after March 4, 2022, but on or before March 4, 2023, or 1.0% of the outstanding principal balance if the prepayment occurs after March 4, 2023, but on or before the scheduled maturity date. No prepayment fee is applicable to a mandatory prepayment of the loans upon an acceleration of the loans. Upon a voluntary or mandatory prepayment of the loans, the Company is also required to pay SVB's expenses and all accrued but unpaid interest on the loans through the prepayment date.

A final payment (the Final Payment) equal to $0.4 million will be due at the earlier of the maturity date, acceleration of the loans, or a voluntary or mandatory prepayment of the loans. The Final Payment is being accrued through interest expense using the effective interest method.

Under the 2021 Loan Agreement, the Company agrees to maintain as of the last day of each month, certain consolidated trailing three-month minimum revenue levels as set forth in the 2021 Loan Agreement.

The 2021 Loan Agreement includes customary representations and covenants that, subject to exceptions and qualifications, restrict the Company's ability to do the following things: engage in mergers, acquisitions, and asset sales; transact with affiliates; undergo a change in control; engage in businesses that are not related to the Company's existing business; add or change business locations; incur additional indebtedness; incur additional liens; make loans and investments; declare dividends or redeem or repurchase equity interests; and make certain amendments or payments in respect of any subordinated debt. In addition, the 2021 Loan Agreement contains customary affirmative covenants, including covenants regarding the payment of taxes and other obligations, maintenance of insurance, maintenance of our bank accounts, protection of our intellectual property, reporting requirements, compliance with applicable laws and regulations, and formation or acquisition of new subsidiaries. The Company is in compliance with it's covenants as of March 31, 2021.

The 2021 Loan Agreement also includes customary indemnification obligations and customary events of default, including, among other things, payment defaults, breaches of covenants following any applicable cure period, material misrepresentations, a failure of the loans or the lender's security interest in the collateral to have the priority as required under the 2021 Loan Agreement, a material adverse change as defined in the 2021 Loan Agreement (including without limitation as a result of a government approval having been revoked, rescinded, suspended, modified or not renewed), certain material judgments and attachments, and events relating to bankruptcy or insolvency.

The 2021 Loan Agreement also contains a cross default provision under which, if a third party (under any agreement) has a right to accelerate indebtedness greater than $0.5 million, the Company would be in default of the 2021 Loan Agreement. During the continuance of an event of default, SVB may apply a default interest rate of an additional 5% to the outstanding loan balances, and SVB may declare all outstanding obligations immediately due and payable and may exercise other rights and remedies as set forth in the 2021 Loan Agreement and related loan documents. Acceleration would result in the payment of all outstanding loans, any default interest charged by the lender, all expenses of the lender and the Final Payment.

The Company bifurcated a compound derivative liability related to the contingent interest feature and acceleration clause (contingent put option) under the 2021 Loan Agreement. The contingent put option liability was valued and separately accounted for in the Company's condensed consolidated financial statements. The contingent put option liability is classified as a component of derivative liabilities on the condensed consolidated balance sheet. As of March 31, 2021, the estimated fair value of the contingent put option liability was $0.3 million, which was determined by using a risk-neutral valuation model wherein the fair value of the underlying debt facility is estimated, both with and without the presence of the default provisions, holding all other assumptions constant (see Note 3).

The estimated future principal payments due under the 2021 Loan Agreement were as follows:

	March 31, 2021
Estimated future principal payments due	
2022	$ 2,500
2023	6,000
2024	6,000
2025	500
Total	$ 15,000

9. PREFERRED STOCK

In March 2021, the Company further amended its Amended and Restated Certificate of Incorporation (the Amended and Restated Certificate), filed in December of 2019, to increase the authorized number of its Series A-1 Preferred Stock by 249,632 shares, resulting in 15,651,869 shares of Series A-1 Preferred Stock.

Additional rights, preferences, privileges and restrictions relating to Series A Preferred Stock, Series A-1 Preferred Stock, and Series Z Preferred Stock (together the Series Preferred) are as set forth below (in thousands, except share amounts):

	December 31, 2020				
	Total shares authorized	Total shares issued and outstanding	Carrying value	Liquidation preference	Common shares issuable upon conversion
Series Z Preferred Stock	7,500,000	2,500,000	$ 1	$ 7,500	2,500,000
Series A Preferred Stock	22,797,830	7,599,274	20,992	43,717	7,599,274
Series A-1 Preferred Stock	15,402,237	4,980,055	17,921	43,989	4,980,055
Total	45,700,067	15,079,329	$ 38,914	$ 95,206	15,079,329

	March 31, 2021				
	Total shares authorized	Total shares issued and outstanding	Carrying value	Liquidation preference	Common shares issuable upon conversion
Series Z Preferred Stock	7,500,000	2,500,000	$ 1	$ 7,500	2,500,000
Series A Preferred Stock	22,797,830	7,599,274	20,992	43,717	7,599,274
Series A-1 Preferred Stock	15,651,869	4,980,055	17,921	43,989	4,980,055
Total	45,949,699	15,079,329	$ 38,914	$ 95,206	15,079,329

Preferred Stock Warrants

In connection with the Company’s Series A-1 convertible preferred stock financing in December 2019, the Company issued a warrant to purchase up to 154,022 shares of Series A-1 Preferred Stock (the A-1 Warrants) to SGI at an exercise price of $3.61 per share, which was the exercise price stated in the financing agreement entered into with the Series A-1 investors at that time. The A-1 Warrants were recorded as a liability at their fair value, which was $0.6 million at December 31, 2020 and $0.8 million at March 31, 2021. The warrant liability is included in derivative liabilities on the Company's accompanying condensed consolidated balance sheets. The A-1 Warrants were valued using the Black-Scholes option-pricing model, the inputs for which included the exercise price of the warrants, the fair value of the underlying preferred shares, the expected term, volatility based on a group of the Company’s peers and the risk-free interest rate corresponding to the expected term of the warrants.

In connection with the 2021 Loan Agreement, the Company issued the Preferred Warrant to SVB. The Preferred Warrant is exercisable into the number of preferred shares equal to approximately $0.2 million divided by the applicable warrant price. The Preferred Warrant is initially exercisable for Series A-1 convertible preferred stock at an exercise price of $3.61 per share, and will become exercisable for any series of convertible preferred stock issued by the Company in the future prior to August 1, 2021, at an exercise price equal to the lowest original purchase price paid by investors for such convertible preferred stock. The Preferred Warrant was recorded as a liability at its fair value, which was $0.3 million at March 31, 2021. The warrant liability is included in derivative liabilities on the Company's accompanying condensed consolidated balance sheets. The warrant was valued using the Black-Scholes option-pricing model, the inputs for which included the exercise price of the warrant, the fair value of the underlying preferred shares, the expected term, volatility based on a group of the Company's peers and the risk-free interest rate corresponding to the expected term of the warrant.

Participation Right

Prior to March 2019, the Company was a wholly owned subsidiary of SGI. As part of its divestiture of the Company in March of 2019, SGI retained a right to participate in a future merger or acquisition of the Company under certain conditions. This participation right was modified in August of 2019 to provide SGI a right to additional warrants exercisable into 3% of shares of stock of the Company sold in future equity financing prior to an initial public offering or certain change of control transactions, if any, under certain conditions. To date, this right has resulted in the issuance of a warrant exercisable into Series A-1 convertible preferred stock. The fair value of the participation right was $0.4 million at December 31, 2020 and March 31, 2021.

10. COMMON STOCK

Common Stock Warrant

Prior to March 2019, the Company was a wholly owned subsidiary of SGI. As part of its divestiture of the Company in March of 2019, SGI retained a right to participate in an initial public offering of the Company under certain conditions. This participation right was modified in August of 2019 to provide SGI with a warrant exercisable into 1,081,745 shares of common stock of the Company, with an aggregate exercise price of $3.00. The fair value of the common stock warrants was $0.8 million at December 31, 2020 and March 31, 2021.

11. STOCK-BASED COMPENSATION

For the three months ended March 31, 2020 and 2021, the Company recorded stock-based compensation expense of approximately $15,000 and $67,000, respectively. No income tax benefit was recognized in the accompanying condensed consolidated statements of operations and comprehensive loss for the Company’s equity incentive plan.

The Company’s Board of Directors approved the adoption of the SGI-DNA, Inc. 2019 Stock Plan (the 2019 Plan) in March of 2019. The 2019 Plan permits the Company to grant up to 5,544,187 shares for options and restricted stock units of the Company’s common stock. On March 3, 2021, the Company’s board of directors and stockholders approved the termination of the 2019 Plan and the adoption of the 2021 Plan (the 2021 Plan). 4,300,000 common shares were initially reserved for issuance under the 2021 Plan.

The 2021 Plan provides for the grant of incentive and nonstatutory stock options to employees, nonemployee directors and consultants of the Company. Options granted under the 2019 Plan and 2021 Plan generally become exercisable over a 4-year period following the date service begins and expire 10 years from the date of grant. The exercise price of incentive stock options granted under the 2019 Plan and 2021 Plan must be at least equal to 100% of the fair value of the Company’s common stock at the date of the grant, except for greater than 10% stockholders for which the exercise price of incentive stock options granted under the 2019 Plan and 2021 Plan must be at least equal to 110% of the fair value of the Company’s common stock at the date of the grant, as determined by the Board of Directors. The exercise price of nonstatutory options granted under the 2019 Plan and 2021 Plan must be at least equal to 100% of the fair value of the Company’s common stock at the date of grant, as determined by the Board of Directors. The 2019 Plan and 2021 Plan grants the Company a right of first refusal to repurchase shares issued under the plan at a price set by the optionee. As of December 31, 2020 and March 31, 2021, there were no outstanding shares subject to these repurchase rights.

Stock option activity under the 2019 Plan and 2021 Plan for the three months ended March 31, 2021 is as follows:

	Number of options	Weighted average exercise price	Weighted average remaining contractual term (in years)	Aggregate intrinsic value (in thousands)
Balances at December 31, 2020	760,159	$ 0.60	8.7	$ 2,884
Options granted	662,108	4.38	9.9	1,033
Options exercised	(223,216)	0.60	8.4	1,193
Options cancelled	(52,301)	0.67	8.9	276
Balances at March 31, 2021	1,146,750	$ 2.78	9.3	$ 3,628
Vested and expected to vest at March 31, 2021	1,146,750	$ 2.78	9.3	$ 3,628
Exercisable at March 31, 2021	89,233	$ 0.50	8.3	$ 486

There were 662,108 options granted during the three months ended March 31, 2021. The weighted average grant date calculated fair value of options granted during the three months ended March 31, 2021 was $1.75 per share.

The calculated value of option grants during the three months ended March 31, 2021 were estimated using the Black-Scholes option pricing model with the following weighted average assumptions:

	March 31, 2021
Risk free interest rate	1.1 %
Expected dividend yield	— %
Expected term	6.1 years
Expected volatility	39.9 %

Stock-based compensation expense related to stock options was classified in the condensed consolidated statements of operations and comprehensive loss as follows (in thousands):

	March 31, 2021
Research and development	$ 3
Sales and marketing	15
General and administrative	49
Total	$ 67

As of March 31, 2021, total unrecognized stock-based compensation expense related to unvested stock-based awards was $1.1 million, which is expected to be recognized over a weighted average period of 3.2 years.

12. INCOME TAXES

The Company estimates an annual effective tax rate of 0% for the year ending December 31, 2021 as the Company incurred losses for the three months ended March 31, 2021 and is forecasting additional losses through the remainder of fiscal year ending December 31, 2021, resulting in an estimated net loss for both financial statement and tax purposes for the year ending December 31, 2021. Therefore, no federal or state income taxes are expected and none have been recorded at this time. Income taxes have been accounted for using the liability method.

Due to the Company's history of losses since inception, there is not enough evidence at this time to support that the Company will generate future income of a sufficient amount and nature to utilize the benefits of its net deferred tax

assets. Accordingly, the deferred tax assets have been reduced by a full valuation allowance, since the Company does not currently believe that realization of its deferred tax assets is more likely than not.

As of March 31, 2021, the Company had no unrecognized income tax benefits that would reduce the Company's effective tax rate if recognized.

13. COMMITMENTS AND CONTINGENCIES

Litigation

The Company may become involved in various claims, suits, and legal proceedings from time to time in the ordinary course of its business. The Company accrues a liability when it believes that it is both probable and the amount of loss can be reasonably estimated. While the outcome of such claims, lawsuits or other proceedings cannot be predicted with certainty, management expects that any liability, to the extent not provided for by insurance or otherwise, will not have a material adverse effect on the Company's consolidated financial position or results of operations.

Contingencies

As described in the above in Note 8, the Company has a success fee contingent liability to a creditor that may require a payment of $0.8 million. This contingent liability was recorded at its fair value of $0.5 million and $0.6 million at December 31, 2020 and March 31, 2021, respectively. The contingent liability is recorded as a component of derivative liabilities on the condensed consolidated balance sheets.

As described in Note 3, our former parent company has a participation right which requires the issuance of warrants equal to 3% of the shares raised in all future equity financings prior to an initial public offering or certain change of control transactions. As of December 31, 2020 and March 31, 2021, the participation right liability was recorded at its fair value of $0.4 million and $0.4 million, respectively, as a component of derivative liabilities on the condensed consolidated balance sheets.

Leases

The Company's non-cancelable lease commitments are described in Note 7.

14. NET LOSS PER SHARE

Net loss per share

Basic and diluted net loss per share attributable to common stockholders was calculated as follows (in thousands, except share and per share amounts:):

	Three months ended March 31,	
	2020	2021
Numerator:		
Net loss	$ (3,880)	$ (7,422)
Net loss attributable to common stockholders	$ (3,880)	$ (7,422)
Denominator:		
Weighted average common stock outstanding - basic and diluted	5,000,000	5,193,098
Net loss per share attributable to common stockholders - basic and diluted	$ (0.78)	$ (1.43)

The Company's potential dilutive securities have been excluded from the computation of diluted net loss per share as the effect would be to reduce the net loss per share. Therefore, the weighted-average number of common shares outstanding used to calculate both basic and diluted net loss per share attributable to common stockholders is the same. The Company excluded the following potential common shares from the computation of diluted net loss per

share attributable to common stockholders for the periods indicated because including them would have had an anti-dilutive effect:

	March 31,	
	2020	2021
Series Z convertible preferred stock (as converted to common stock)	2,500,000	2,500,000
Series A convertible preferred stock (as converted to common stock)	7,599,274	7,599,274
Series A-1 convertible preferred stock (as converted to common stock)	4,980,055	4,980,055
Warrants to purchase common stock	1,081,745	1,081,745
Warrants to purchase Series A-1 convertible preferred stock (as converted to common stock)	154,022	216,428
Stock options to purchase common stock	864,058	1,146,750
Total	17,179,154	17,524,252

15. RETIREMENT PLAN

The Company has a retirement saving plan (the 401(k) Plan) that allows participating employees to defer a portion of their annual compensation on a pretax basis. The Company made no contributions to the 401(k) Plan for the three months ended March 31, 2020 and 2021.

16. RELATED PARTY TRANSACTIONS

During the three months ended March 31, 2020 and 2021, the Company made payments to SGI of approximately $41,000 and $25,000, respectively, for services relating to intellectual property matters, including patent filings and patent prosecution.

17. SUBSEQUENT EVENTS

The Company has evaluated subsequent events from the condensed consolidated balance sheet date through May 28, 2021, the date these condensed consolidated financial statements were issued.

Amendment to Certificate of Incorporation

On April 26, 2021, the Company amended its Amended and Restated Certificate of Incorporation to increase the authorized number of shares of its common stock by 3,000,000 shares, resulting in 75,000,000 authorized shares of common stock.

2021 Equity Incentive Plan

On April 24, 2021 and May 19, 2021, the Company's board of directors authorized the issuance of an aggregate of 1,014,226 and 137,495 stock options to employees, at an exercise price of $5.94 and $11.34 per share, respectively, under the 2021 Plan.

On April 24, 2021, the Company's board of directors and stockholders approved an increase to the number of shares of common stock reserved for issuance under the 2021 Plan to 6,000,000 shares.

Reverse Stock Split

On June 10, 2021, the Company's board of directors and stockholders approved a 3-for-1 reverse stock split of the Company's issued and outstanding common stock and outstanding shares of convertible preferred stock, which was effected on June 11, 2021. The reverse stock split also applied to all outstanding securities or rights convertible into, or exchangeable or exercisable for, common stock or convertible preferred stock. Accordingly, all shares, stock options, warrants and per share information presented in the accompanying financial statements and notes thereto have been retroactively adjusted to reflect the reverse stock split. There was no change in the par value and authorized number of shares of the Company's common stock or preferred stock.

6,666,665 Shares

Codex DNA, Inc.

Common Stock

PROSPECTUS

Jefferies
Cowen
KeyBanc Capital Markets

June 17, 2021