UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2021

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from to

Commission file number 001-40497

Codex DNA, INC.
(Exact name of registrant as specified in its charter)

Delaware	**45-1216839**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
9535 Waples Street, Suite 100	**92121-2993**
San Diego, CA	
(Address of Principal Executive Offices)	(Zip Code)

(858) 228-4115
Registrant's telephone number, including area code

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $0.0001 par value per share	**DNAY**	**Nasdaq Global Select Market**

Securities registered pursuant to section 12(g) of the Act: None.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No x

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes o No x

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports); and (2) has been subject to such filing requirements for the past 90 days. Yes x No o

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T

(§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes x No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of “large accelerated filer,” “accelerated filer” and “smaller reporting company” in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	x	Smaller reporting company	x
		Emerging growth company	x

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No x

The aggregate market value of voting stock held by non-affiliates of the Registrant on June 30, 2021, based on the closing price of $22.00 for shares of the Registrant’s common stock as reported by the Nasdaq Global Select Market, was approximately $200.9 million. In determining the market value of non-affiliate common stock, shares of common stock beneficially owned by each executive officer, director, and holder of more than 5% of our common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

The registrant had outstanding 29,326,513 shares of common stock as of February 28, 2022.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant’s definitive Proxy Statement relating to the 2022 Annual Meeting of Stockholders are incorporated herein by reference in Part III of this Annual Report on Form 10-K to the extent stated herein. The proxy statement will be filed with the Securities and Exchange Commission within 120 days of the registrant’s fiscal year ended December 31, 2021.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K for the fiscal year ended December 31, 2021 (Annual Report), 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 Annual Report, 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 Annual Report include, but are not limited to, statements about:

- estimates of the synthetic biology market, market growth, and new market expansion;
- our future revenue, expenses, inflationary pressures, 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 successfully 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 and our compliance with these regulations;
- our ability to hire and retain key personnel and to manage our future growth effectively;
- our ability to obtain additional financing in 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; 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 Annual Report and are subject to a number of risks, uncertainties and assumptions described in the section titled "Risk Factors" and elsewhere in this Annual Report. 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 file this Annual Report, 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 Annual Report, 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.

We use the Codex DNA logo, BioXp, Gibson Assembly, RapidAMP, Vmax, CleanCap and other marks as trademarks in the United States and other countries. This Annual Report 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 Annual Report, including logos, artwork and other visual displays, may appear without the ® or TM symbols, but such references are not intended to indicate in any way that we will not assert, to the fullest extent 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.

Part I

BUSINESS

Overview

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 high-quality DNA and mRNA at a useable scale. A key part of our on-market 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 and future product offerings 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.

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 solutions are 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;

- *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.
- *Short Oligo Ligation Assembly (SOLA) enzymatic DNA synthesis (EDS)*: SOLA EDS is a sustainable, scalable, and cost-effective approach designed to significantly reduce timelines for constructing synthetic DNA, RNA, and proteins compared to traditional chemical synthesis, paving the way for more efficient and effective development of mRNA-based vaccines, diagnostics, therapeutics, and personalized medicines. SOLA EDS technology will be integrated into Codex DNA's future BioXp Oligo Printer and BioXp Digital-to-Biological Converter systems, providing customers with an end-to-end solution for their life science research and synthetic biology needs.

Our solutions are 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, mRNA, and protein 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 December 31, 2021, we have launched eight BioXp kits, three benchtop reagent kits, and several other synthetic biology products, including 14 SARS-CoV-2 full-length genomes and RNA controls as well as our Vmax X2 cells. We have placed approximately 200 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 December 31, 2021, our customer base was composed of over 450 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.

Early Access Collaboration and Licensing Agreement with Pfizer

In December 2021, we entered into a Research Collaboration and License Agreement with Pfizer Inc. (Pfizer) pursuant to which we agreed to collaborate with Pfizer to further develop Codex DNA's novel enzymatic DNA synthesis technology for Pfizer's use in its research and development of mRNA-based vaccines and biotherapies. The financial terms of the deal included an upfront payment from Pfizer to us, along with success-based technical milestone payments that could be earned in the near term. We are also eligible to receive additional milestone payments based on the achievement of specified development, regulatory and commercialization goals associated with any products developed from the application of our technology developed and licensed under the agreement.

Acquisition of EtonBio, Inc.

In November 2021, we completed the acquisition of EtonBio Inc. (Eton), a San Diego-based biotech company specializing in synthetic biology products and services, including DNA sequencing and oligo synthesis, for the global academic research, pharmaceutical and biotechnology industries. Eton utilizes innovative techniques, sustainable practices and exceptional customer service to meet the research community's need for high-quality DNA sequencing and oligo synthesis. Eton also markets DNA prep services and products such as antibodies, peptides and metabolism assay kits.

Industry Overview

Background on Synthetic Biology

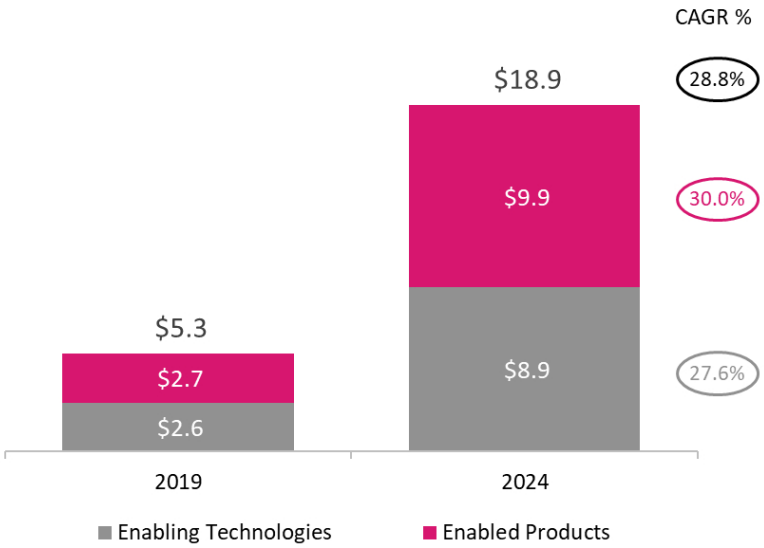
Synthetic biology is a well-established and rapidly expanding field of science that involves the engineering of biological components such as genes, mRNA, proteins, viruses and living cells starting from a digital DNA sequence, enabling the construction of those macromolecules and organisms with new 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 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%, 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 (in 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.

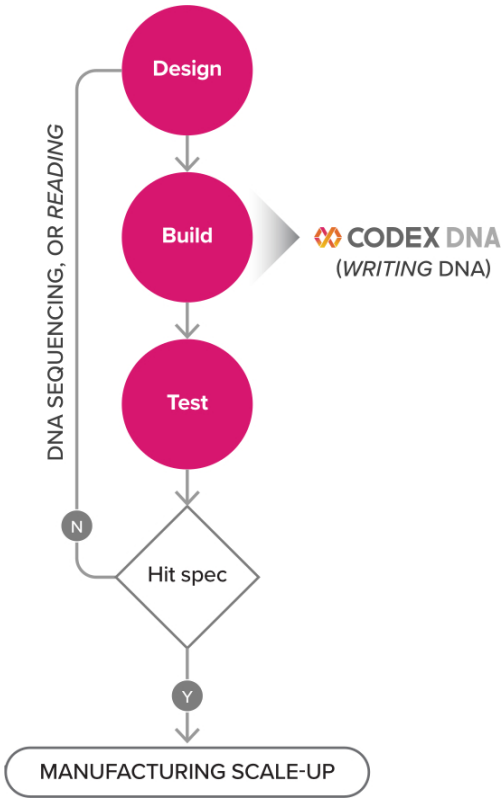
Synthetic biology is enabled by numerous technologies that facilitate highly-iterative experimental design. These technologies permit “reading” of the DNA code of a desired gene, engineering and synthetic construction of biological products using those blueprints, and testing of the constructed products 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

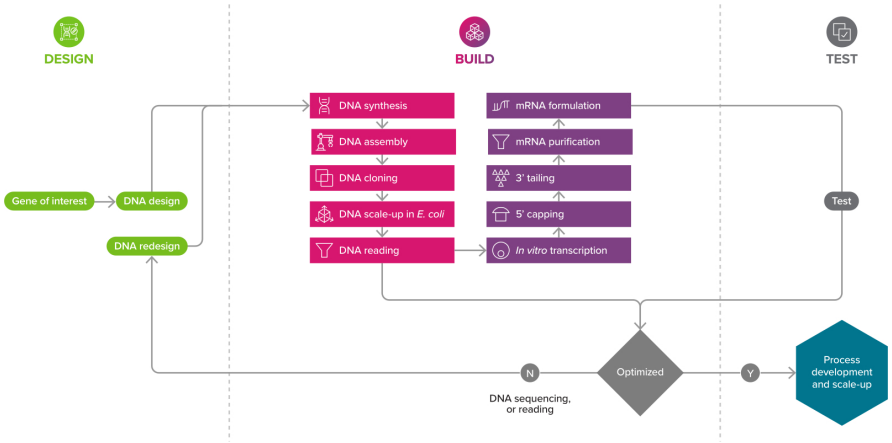
software of life, biologists can now write code like software engineers and write genes to perform as desired. The *design-build-test* synthetic biology paradigm begins with the DNA sequencing or reading of a biological sample, providing a "blueprint" for the design phase. The outcome of the design phase 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, mRNA or protein, 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 high-quality 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 limited in-house kit solutions 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:

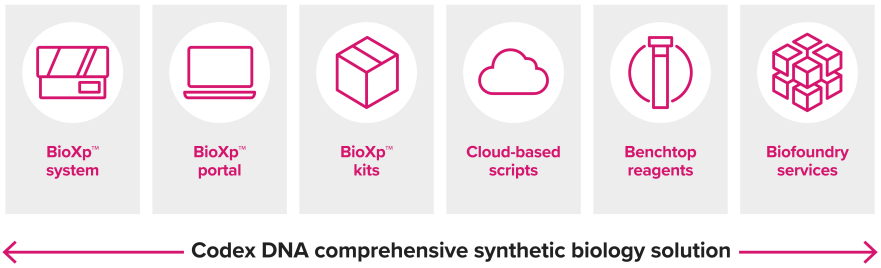
- the handling requirements of the mRNA products, which are highly unstable and susceptible to rapid degradation;
- the multi-step processes involved in producing purified, biologically active mRNA; and
- scaling the mRNA to high yields from DNA templates.

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 our:

- *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;
- *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;
- *BioXp kits*: contain all the necessary building blocks and reagents, including our proprietary Gibson Assembly branded reagents, for specific synthetic biology workflow applications;
- *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;
- *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; and
- *Short Oligo Ligation Assembly (SOLA) enzymatic DNA synthesis (EDS)*: SOLA EDS is a sustainable, scalable and cost-effective approach designed to significantly reduce timelines for constructing synthetic DNA, RNA and proteins compared to traditional chemical synthesis, paving the way for more efficient and effective development of mRNA-based vaccines, diagnostics, therapeutics and personalized medicines. SOLA EDS technology will be integrated into our future BioXp Oligo Printer and BioXp Digital-to-Biological Converter systems, providing customers with an end-to-end solution for their life science research and synthetic biology needs.

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. 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.

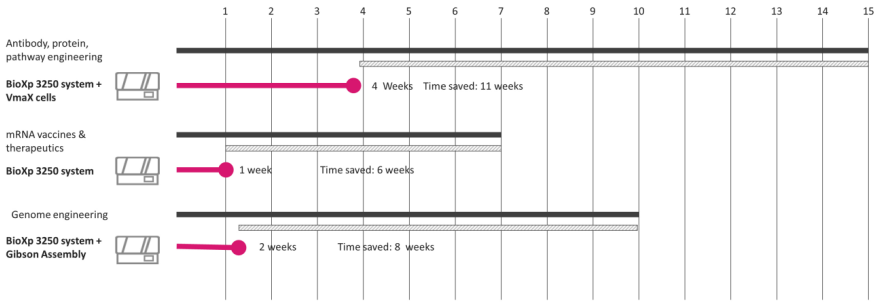


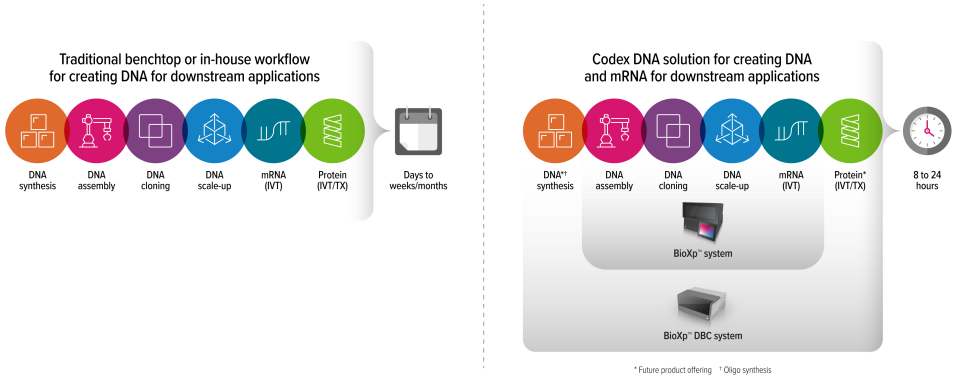
Figure 5 is derived from Company calculations and publicly available information from certain of the Company's competitors determined by management to offer the most comparable service for each workflow, and excludes shipping times for products.

- *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 high-quality 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 December 31, 2021, we have placed approximately 200 BioXp systems, including approximately 50 BioXp systems in 2021. 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 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 six major European markets (United Kingdom, Germany, France, Benelux, Switzerland and the Nordics), as well as through more than 14 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 the BioXp system by developing additional BioXp kits for our customers' workflows*. As of December 31, 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 additional BioXp kits, which 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 eight fragments of up to 7.2 kb in length and has a 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, variant libraries up to 800 bp in length in as few as 8 hours, exclusive of shipping time, and biologically active synthetic mRNA 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.

Our portfolio of commercialized kits for the BioXp 3250 system

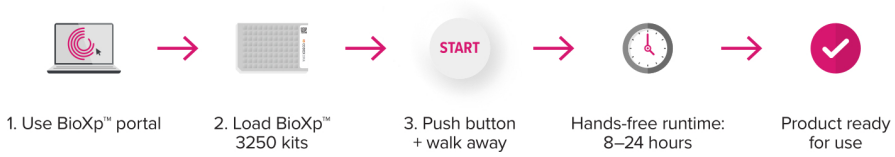
BioXp kits contain all the requisite Gibson Assembly branded reagents and allow our BioXp system to perform the steps required to produce various DNA and mRNA products designed for a range of synthetic biology applications. BioXp kits are designed to be backwards compatible with legacy systems and forward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

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. Fourteen 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 what we believe to be 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. The BioXp 9600 system is currently in development with commercial launch planned for the second half of 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 planned for 2023.

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 prior to launching the BioXp DBC system. 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 planned for after 2023.

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.

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 planned for the second 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, without post-translational modifications, using *de novo* synthesized, error-corrected gene fragments (i.e., a protein template) of up to 1.8 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, including biologics discovery and development. Full commercial launch is planned for the second half of 2022.
- BioXp HiFi DNA libraries kit. This kit will contain all the reagents necessary to rapidly produce de novo synthesized, error-corrected scanning or combinatorial variant DNA libraries of gene fragments up to 1.8 kb in length. New error-correction technology will deliver improved sequence fidelity. We anticipate that this kit, which offers longer fragment length and greater sequence fidelity, will enable broad adoption for several workflows, including protein engineering and biologics discovery. Full commercial launch is planned for the second 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 and at various partner facilities.

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. Many offerings are built on the industry leading BioXp technology and 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.

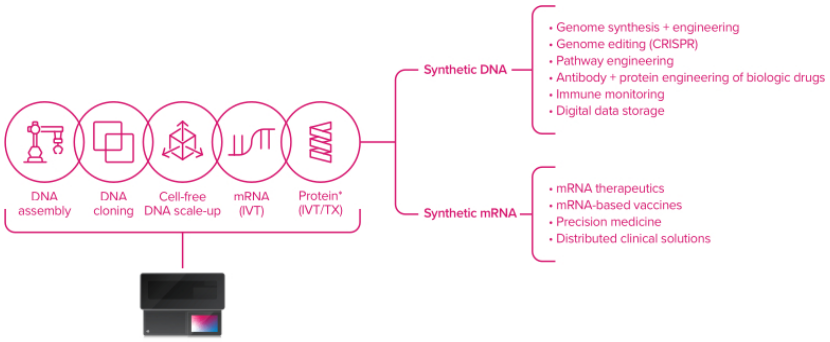
Finally, our service offerings represent a solution for those customers whose volume needs do not currently support a BioXp system purchase. In such situations, our service offerings further enable our consultative partner approach so as to engage more deeply with such customers and help demonstrate 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

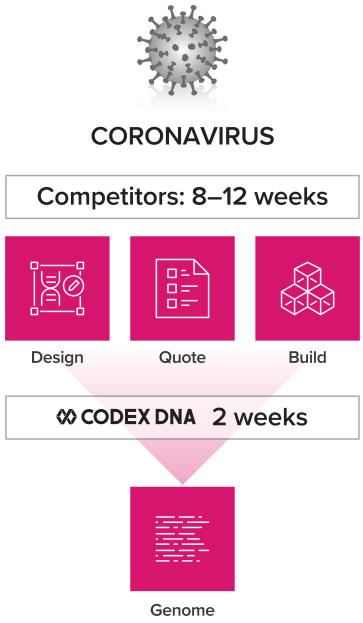
We believe that with the BioXp system, scientists can perform rapid, high-throughput gene synthesis, regardless of vector size and complexity in a hands-free, automated fashion in 8 to 24 hours, exclusive of shipment times. We believe that our BioXp system offers a comprehensive value proposition that 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 high-quality 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

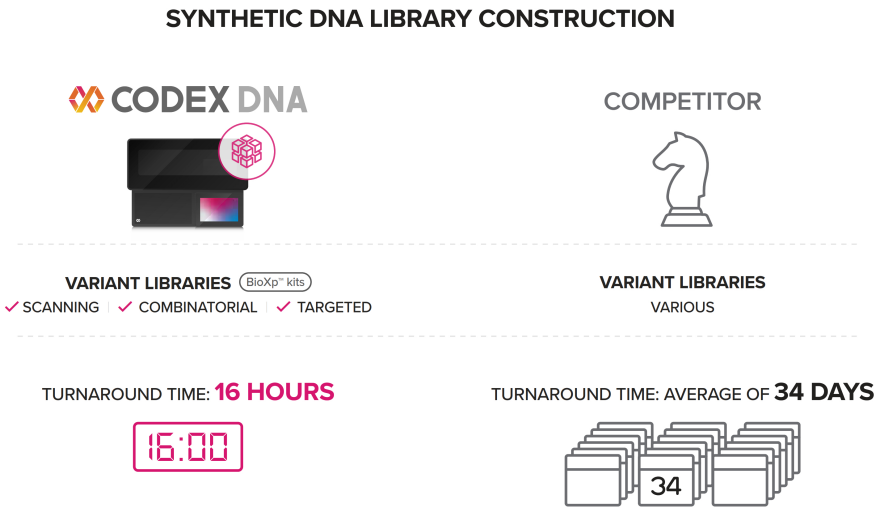


Figure 14 assumes a standard antibody or protein engineering workflow which requires the synthesis of two synthetic DNA libraries for both our BioXp system and the competitor. The turnaround time estimate for our competitors is based on the average product delivery times not including ship-days for similar 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.

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: Synthetic mRNA Production

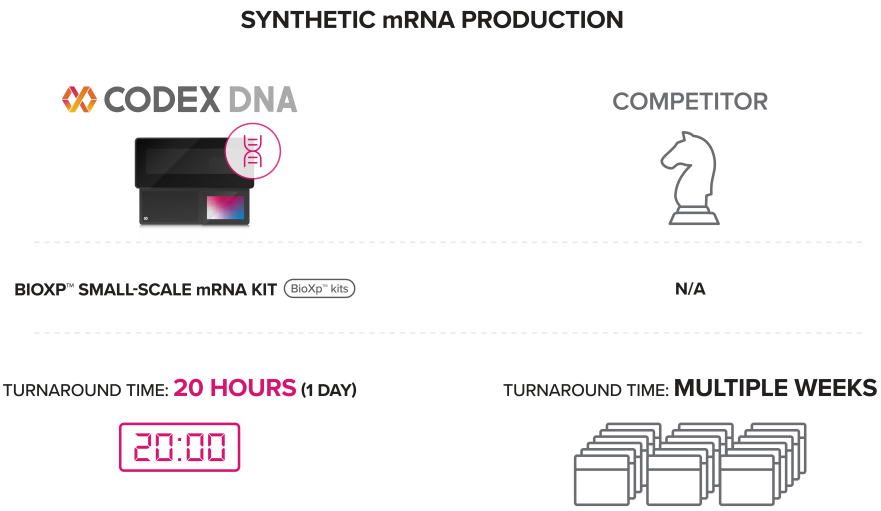


Figure 15 assumes optional runs of the BioXp system allow for pooling of up to 16 wells from a single kit. The turnaround time estimate for our competitors is based on the general turnaround time for Aldevron, LLC, Trilink Biotechnologies, Inc., Bio-Synthesis, Inc. and others who were selected by management 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.

   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.

4. CleanCap technology benefits: In July 2021, we signed a licensing and supply agreement with TriLink Biotechnologies, part of Maravai LifeSciences Holdings, Inc., for its industry-leading CleanCap technology. We integrated the mRNA capping technology into our suite of automated mRNA synthesis kits for the BioXp system as

well as within our BioFoundry Services offering. Together, the technologies are expected to increase productivity and yields for mRNA synthesis workflows, potentially opening the doors for a broader range of downstream therapeutic and vaccine applications.

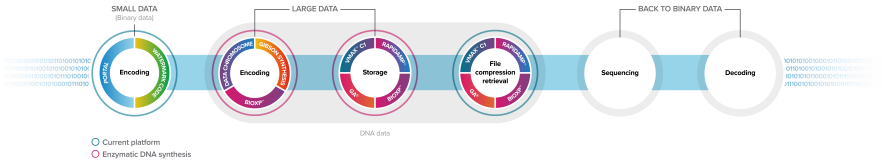
Workflow solutions in development

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 we believe 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 will be 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 high-quality synthetic DNA sequences 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:

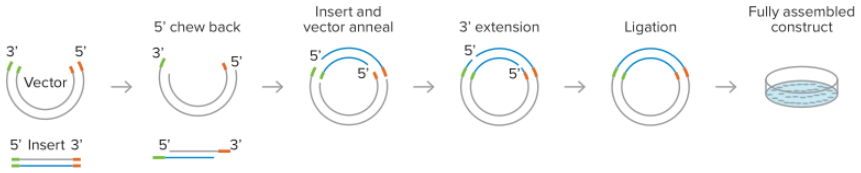
- scanning libraries with varied single, contiguous amino acid sites, including site-saturation and alanine scanning libraries;
- combinatorial libraries with varied, multiple non-contiguous amino acids sites using degenerate bases to optimize protein binding and function; and
- targeted libraries, with 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



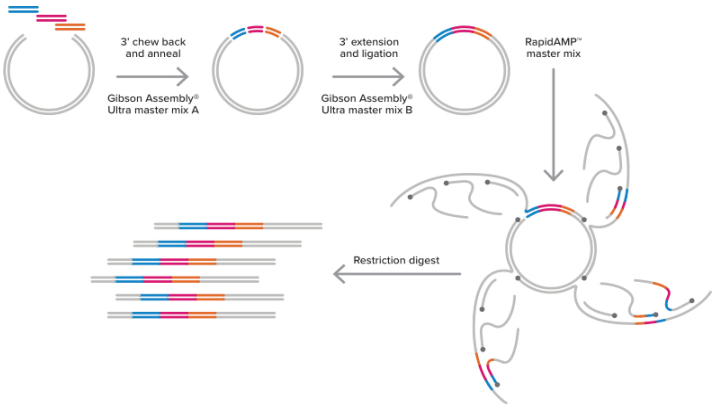
The BioXp cloning kits leverage Gibson Assembly in a proprietary fashion to bring together up to four gene fragments in up to four vectors, permitting larger DNA to be constructed and providing increased flexibility in cloning strategies. Multi-fragment assembly and cloning on the BioXp system gives 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. 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 over time 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 rapid-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 rapid-scale mRNA synthesis kit will contain all the reagents necessary to rapidly produce biologically active mRNA from previously cloned DNA of up to 20 kb in length. 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 December 31, 2021, we employed 42 employees in R&D, primarily located in San Diego, California. The R&D team consists of two groups, a scientific team and an engineering team, with 23 and 19 employees, respectively.

- ***Scientific Team***: Twenty-three experienced scientists, approximately 48% of whom hold a Master's degree and 39% 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***: Nineteen 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.

In October 2015, we entered into a Supply Agreement (the IDT Supply Agreement), with Integrated DNA Technologies, Inc., a division of Danaher Corporation (IDT), which was amended in March 2020 and June 2021 (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 term of the Supply Agreement is nine years.

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. 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 December 31, 2021, we had 81 employees dedicated to operations, with 62 focused on manufacturing, 14 focused on global logistics and supply chain, and five focused on quality control.

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 December 31, 2021, we have launched a total of eight BioXp kits, three benchtop reagent kits, and several other synthetic biology products, including 14 SARS-CoV-2 full-length genomes as well as our Vmax X2 cells. We have placed approximately 200 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 December 31, 2021, our customer base was composed of over 450 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 14% of our revenue for the year ended December 31, 2021, 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 December 31, 2021, we employed a commercial team of 44 employees, many with significant industry experience. Of the 44 commercial employees, 32 were in sales and 12 were in marketing and corporate development. As of December 31, 2021, our commercial team included 23 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 December 31, 2021, we employed a service and support team of 13 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., which subsequently changed their name to Azenta; 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.; Evonetix Ltd. and others. Our competitors and their products and services are focused on discrete steps across various synthetic biology applications including gene synthesis, enzymatic DNA 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:

- 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.

Early Access Collaboration and Licensing Agreement with Pfizer

In December 2021, we entered into a Research Collaboration and License Agreement (Pfizer Agreement) with Pfizer Inc. (Pfizer), pursuant to which we agreed to collaborate with Pfizer to further develop our novel enzymatic DNA synthesis technology for Pfizer's use in its research and development of mRNA-based vaccines and biotherapies. The financial terms of the deal include an upfront payment from Pfizer to us, along with success-based technical milestone payments that could be earned in the near term. We are also eligible to receive additional milestone payments based on the achievement of specified development, regulatory and commercialization goals associated with any products developed from the application of our technology developed and licensed under the agreement.

We granted Pfizer a non-exclusive, worldwide license to use our enzymatic DNA synthesis technology for purposes of researching, developing, manufacturing and commercializing pharmaceutical and biopharmaceutical products and a limited-time option to convert such license to exclusive for specific applications. If Pfizer exercises its option for these application(s) within the applicable period, then the license to Pfizer will become exclusive for products for such application(s); provided that Pfizer may later convert the particular application back to non-exclusive.

Under the Pfizer Agreement, Pfizer made an upfront payment to us of $8 million and if we meet certain technical milestones, we will be eligible to receive an additional $10 million in near-term milestone payments associated with the Research Plan.

In addition to the upfront payment and technical milestone payments, Pfizer has agreed to make milestone payments to us upon the products meeting certain clinical milestones, with each product (other than exclusive products) being eligible for milestone payments up to $20 million if it were to meet the applicable clinical milestones and the first exclusive product in each exclusive field being eligible for milestone payments up to $55 million if it were to meet the applicable clinical milestones. Pfizer has also agreed to pay us up to $60 million in sales milestones for products (other than exclusive products) if aggregate net sales of such products meet certain thresholds and up to $180 million in sales milestones for exclusive products if aggregate net sales of the exclusive products meet certain thresholds. Provided the Pfizer Agreement remains in place, Pfizer will also pay escalating royalties from a low to mid-fraction of one percent of net sales of all products. Pfizer's obligations to pay royalties with respect to a product within a country will expire after specific criteria including such product no longer being covered by patent rights licensed to Pfizer by us in such country. Royalty payments are subject to reduction after the introduction of a biosimilar product in such country by a third party.

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, 2022, this section of the portfolio contains one issued U.S. patent application relating to the BioXp and an issued U.S. patent for the DBC. In Australia, we have granted patents for both BioXp and DBC; and in Japan we have a granted patent for BioXp and a granted patent for the DBC. Other patent applications are pending in the EPO, Canada, China, and India. In Israel, we have an allowed patent to the BioXp and a pending application to the DBC. 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 corresponding applications pending in the EPO and Canada. 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, Australia, 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 three filed U.S. applications and three filed PCT applications, each relating to advanced methods of enzymatic DNA synthesis from a pre-manufactured library of components. Additionally, as of March 1, 2022, 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, Israel, and China, expiring in 2033; corresponding applications are pending in India and 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;
- an issued U.S. patent 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. (five 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, Canada, Japan, India, Israel, and Singapore, expiring in 2033, with corresponding applications pending in the U.S. 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 one issued patent for a low endotoxin *Vibrio natriegens* host cell in the U.S. and corresponding applications in Europe and Canada, which if granted as patents would expire in 2038. Additionally, this portfolio contains an issued U.S. and pending European applications relating to a Vibrio organism that remains culturable after storage at low temperatures, which if granted would expire in 2037. Additionally, as of March 1, 2022, this section of the portfolio features:

- one issued U.S. patent application covering our genome editing “pop in cassette” technology, as well as pending foreign applications in Canada and Australia;
- one issued 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. In November 2021, HHS under the Biden administration issued a statement that withdrew the August 2020 policy announcement, stating that HHS does not have a policy on LDTs that is separate from FDA's longstanding approach. Further, in June 2021, Congress introduced an updated legislation called the Verifying Accurate, Leading-edge IVCT Development Act (VALID Act), which, if enacted, will establish a new risk-based regulatory framework for in vitro clinical tests (IVCTs), which include IVDs, LDTs, collection devices, and instruments used with such tests, and a technology certification program, among other proposals. It is unclear whether the VALID Act or any other legislative proposals would be passed by Congress or signed into law by the President. 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 square feet 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 limited 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.

In August 2021, we entered into a sublease agreement for 21,366 square feet of temporary office space at 10182 Telesis Court, San Diego, California. The sublease agreement has a term of one year and one option to extend the sublease term for an additional six months.

In September 2021, we entered into a lease agreement for future office and laboratory space and concurrently signed a second amendment to the operating lease agreement for our corporate headquarters located at 9535 Waples Street, San Diego, California. Under this agreement, we will terminate our lease at 9535 Waples Street upon the occupancy of office and laboratory space at 10421 and 10431 Wateridge Circle, San Diego, California, which will occur subsequent to the renovation and build-out of the spaces. We intend to occupy approximately 49,077 square feet of space at 10431

Wateridge Circle and approximately 17,146 square feet of space at 10421 Wateridge Circle. We are entitled to one option to extend the lease term for an additional five years after the expiry of the original 123 month term. Occupancy of 10421 and 10431 Wateridge Circle and the corresponding termination of the lease at 9535 Waples Street are expected to occur in the second half of 2022.

In connection with the EtonBio Inc., (Eton) acquisition in November 2021, we assumed a lease of office and laboratory space located at 10179 Huennekens Street, San Diego, California. The facility is approximately 8,600 square feet and was leased from Oberlin Realty LLC. The lease term expires in December 2022.

In connection with the Eton acquisition in November 2021, we assumed a lease of office and laboratory space located at 10717 Sorrento Valley Road, San Diego, California. The facility is approximately 8,000 square feet and was leased from Sorrento Realty LLC. The lease term expires in November 2024 and has an option to extend the term for an additional three years at the then current fair market value rental rate for comparable office and laboratory space.

In connection with the Eton acquisition in November 2021, we assumed a lease of office and laboratory space located at 400 Park Offices Drive, Durham County, North Carolina. The facility is approximately 3,000 square feet. and was leased from Davis 54, LLC. The lease term expires in October 2023.

In connection with the Eton acquisition in November 2021, we assumed a lease office and laboratory space located at 56 Roland Street, Boston, Massachusetts. The facility is approximately 4,300 square feet and was leased from Paradigm Direct Roland. The lease term expires in June 2022.

In connection with the Eton acquisition in November 2021, we assumed a lease of office and laboratory space located at 1075 Morris Avenue, Union, New Jersey. The facility is approximately 1,200 square feet and was leased from Institute for Life Sciences Entrepreneurship. The lease term expires in November 2022.

Employees and Human Capital

As of December 31, 2021, we had 202 full-time and 24 part-time employees in the United States and 10 full-time employees located internationally. Our team includes: 57 in commercial sales, marketing, and support, 81 in manufacturing and operations, 23 in research and development, 19 in engineering, and 46 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.

Corporate Information and History

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 Synthetic Genomics, Inc. 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 Annual Report and should not be considered part of this Annual Report.

Implications of Being an Emerging Growth Company

We are an “emerging growth company” as defined in the Jumpstart Our Business Startups Act of 2012, as amended, or the JOBS Act. We will remain an emerging growth company until the earliest to occur of: the last day of the fiscal year in which we have more than $1.07 billion in annual revenue; the date we qualify as a “large accelerated filer,” with at least $700 million of equity securities held by non-affiliates; the issuance, in any three-year period, by us of more than $1.0 billion in non-convertible debt securities; and 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 reduced reporting requirements that are otherwise applicable to public companies. These provisions include, but are not limited to:

- not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended;
- reduced disclosure obligations regarding executive compensation in our periodic reports, proxy statements and registration statements; 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.

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 use this extended transition period to enable us to comply with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our consolidated financial statements may not be comparable to companies that comply with the new or revised accounting standards as of public company effective dates.

To the extent that we continue to qualify as a "smaller reporting company," as such term is defined in Rule 12b-2 under the Securities Exchange Act of 1934, 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.

Available Information

We make our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to those reports, available free of charge at our website as soon as reasonably practicable after they have been filed with the SEC. Our website address is http://codexdna.com. Information on our website is not part of this report. The SEC maintains a website that contains the materials we file with the SEC at www.sec.gov.

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 Annual Report, 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 Annual Report, 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.

Summary Risk Factor

- 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 will 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.

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, $18.0 million for the year ended December 31, 2020 and $39.0 million for the year ended December 31, 2021. As of December 31, 2021, we had an accumulated deficit of $65.3 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, commercializing and supporting new products;
- potential shortages, or increases in costs, of our product components or raw materials for existing and new products, 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 have also experienced price increases for certain raw materials directly as a result of supply chain issues associated with the COVID-19 pandemic and we are uncertain how long those constraints could continue to impact our raw material pricing. 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 will 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 and anticipated cash flow from operations will be sufficient to meet our anticipated cash requirements for at least twelve months. If our available cash resources 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 herein, we will 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.

We will likely 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; Decky Goodrich, our Senior Vice President, Commercial Operations; and Laurence Warden, our Senior 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, Mr. Goodrich 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 December 31, 2021, we had 202 full-time and 24 part-time employees in the United States and 10 full-time employees located 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. Now that we are a public company, our management and other personnel are required 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 timely 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 timely 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. We have experienced supply chain delays and increases in raw material cost for several of our products in development, including the BioXp 9600 system, that have caused delays in our commercial timelines. If we continue to experience these delays and increases in cost, introduction of the BioXp 9600 or other products could be further delayed. Moreover, any other 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.

During 2021, we announced the acquisition of EtonBio, Inc. We may in the future seek to acquire or invest in other 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. Any 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 mostly organic, and we have limited experience in acquiring and integrating 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, including the EtonBio, Inc. 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.

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. 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, or if we experience continued increases in the costs of these components due to inflationary pressures. 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. In the past, supply issues with IDT 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. We have experienced quality issues with certain of our mRNA BioXp kits and are currently working to resolve those issues. If we are unable to resolve quality issues with these particular kits, we may be unable to recognize projected revenue from them and our business could be harmed.

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. In 2021, our revenue from COVID-19 related products was 3% of total revenue.

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., which subsequently changed their name to Azenta; 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.; Evonetix Ltd. 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%, 60% and 47% of our revenue for the period March 8, 2019 through December 31, 2019 and the years ended December 31, 2020 and December 31, 2021, 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 14% of our revenue for the year ended December 31, 2021, 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, from time to time during the COVID-19 pandemic, there have been 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, masking and other health and safety protocols and measures, which have affected productivity and morale. Continued and 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. Moreover, the COVID-19 pandemic has had a significant impact on our ability to retain employees and has forced us to fill positions more frequently than we have had to do so in the past. We cannot assure you that in the future we will be able to fill these positions quickly. 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, including inflation, 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 in general and has negatively impacted our stock price since becoming a public company in 2021. Should this impact continue, our ability to raise additional capital through equity, equity-linked or debt financings, will be reduced, 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, including inflation, and financial markets. The capital markets or general economic conditions may be adversely affected by geopolitical risks, hostilities, terrorist attacks or wars, including the current war between Russia and Ukraine. 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 years ended December 31, 2020 and December 31, 2021, approximately 14%, 25% and 30%, 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, including the outbreak of war in the Ukraine;
- 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 may be subject to fines or other penalties for potential past violations of U.S. export control and economic sanctions laws.

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.

In late 2021, following a voluntary internal review of our compliance with U.S. export control and sanctions laws, we became aware that certain of our products had been sold indirectly into embargoed countries via our distributors and resellers, potentially in violation of U.S. export control and economic sanctions laws. These laws restrict or prohibit the sale of certain products, including our BioXp systems, into certain countries, including Russia. In the past, we may have exported products prior to receiving these required authorizations. We believe that these potential violations were inadvertent and occurred because we and certain of our resellers did not have sufficient compliance procedures in place to prevent the transactions at issue. As a result, we were unable to preclude certain of our channel partners and resellers from

selling our solutions into countries subject to a U.S. embargo until late 2021. Commencing in late 2021, we took a series of corrective actions intended to remediate the effect of any unauthorized past actions, including actions to permanently stop supporting the use of our BioXp systems in sanctioned countries.

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. In November 2021, HHS under the Biden administration issued a statement that withdrew the August 2020 policy announcement, stating that HHS does not have a policy on LDTs that is separate from FDA's longstanding approach. Legislative and administrative proposals to amend the FDA's oversight of LDTs have been introduced in recent years, including the VALID Act. It is unclear how such action as well as future legislation by federal and state governments and FDA regulation will impact the industry, including our business and that of our customers. Any restrictions on LDTs by the FDA, HHS, Congress or state regulatory authorities may decrease the demand for our products. Additionally, compliance with additional regulatory burdens could be time consuming and costly for us, our partners and customers. 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 Ownership of Our Common Stock

The market price of our common stock has been volatile and may continue to be volatile in the future, which could result in substantial losses for investors purchasing our common stock in the market.

The market price of our common stock has been volatile since our initial public offering any may continue to be volatile. As a result, you may not be able to sell your common stock at or above the price at which you purchased the stock. Some of the factors that may cause the market price of our common stock to continue fluctuating 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;
- general economic, industry and market conditions, including deteriorating market conditions due to investor concerns regarding inflation and the outbreak of war in the Ukraine; 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. 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 continue to 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 relies 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 extensive research coverage by industry or securities analysts. If more analysts do not commence coverage of us, the trading price of our common stock could

decrease. 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 December 31, 2021, our directors, officers and stockholders holding 5% or more of our outstanding common stock and their affiliates beneficially owned over 68% of our outstanding common stock in the aggregate, assuming the exercise of all options and warrants held by such persons. 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 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 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.

Holders of an aggregate of 15,079,329 shares of our common stock 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. We also have registered all shares of common stock that we may issue under our equity compensation and employee stock purchase plans, making them freely tradeable in the public market upon issuance and, if applicable, vesting, subject to volume limitations applicable to affiliates. 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.

We do not expect to pay any dividends for the foreseeable future. Investors 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 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 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 is 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, 2021, we had U.S. federal and state net operating loss carryforwards (NOLs) of $62.1 million and $38.5 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 2029. 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, 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 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. 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 incur significantly increased costs and management resources as a result of operating as a public company, and our management is required to devote substantial time to new compliance initiatives.

As a public company, we 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 need to devote a substantial amount of time and incur significant expense in connection with compliance initiatives. As a public company, we also 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 the future, it may be more expensive or more difficult for us to obtain director and officer liability insurance as a public company, 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.

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

The market price of our common stock has been and may continue to 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 existed 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, 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.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

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 square feet 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 limited 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.

In August 2021, we entered into a sublease agreement for 21,366 square feet of temporary office space at 10182 Telesis Court, San Diego, California. The sublease agreement has a term of one year and one option to extend the sublease term for an additional six months.

In September 2021, we entered into a lease, or Wateridge Lease, for future office and laboratory space and concurrently signed a second amendment, or the Second Amendment, to the operating lease agreement for the Waples Building. Under the Second Amendment, the lease for the Waples Building will terminate upon the occupancy of office and laboratory space at 10421 and 10431 Wateridge Circle, San Diego, California, which will occur subsequent to the renovation and build-out of the spaces. The Wateridge Pointe lease provides for a 10 year and 3 month term and we are entitled to one option to extend the lease term for an additional five years. Occupancy of 10421 and 10431 Wateridge Circle and the corresponding termination of the lease at 9535 Waples Street are expected to occur in the second half of 2022.

In connection with the EtonBio Inc., (Eton) acquisition in November 2021, we assumed a lease of office and laboratory space located at 10179 Huennekens Street, San Diego, California. The facility is approximately 8,600 square feet and was leased from Oberlin Realty LLC. The lease term expires in December 2022.

In connection with the Eton acquisition in November 2021, we assumed a lease of office and laboratory space located at 10717 Sorrento Valley Road, San Diego, California. The facility is approximately 8,000 square feet and was leased from

Sorrento Realty LLC. The lease term expires in November 2024 and has an option to extend the term for an additional three years at the then current fair market value rental rate for comparable office and laboratory space.

In connection with the Eton acquisition in November 2021, we assumed a lease of office and laboratory space located at 400 Park Offices Drive, Durham County, North Carolina. The facility is approximately 3,000 square feet. and was leased from Davis 54, LLC. The lease term expires in October 2023.

In connection with the Eton acquisition in November 2021, we assumed a lease office and laboratory space located at 56 Roland Street, Boston, Massachusetts. The facility is approximately 4,300 square feet and was leased from Paradigm Direct Roland. The lease term expires in June 2022.

In connection with the Eton acquisition in November 2021, we assumed a lease of office and laboratory space located at 1075 Morris Avenue, Union, New Jersey. The facility is approximately 1,200 square feet and was leased from Institute for Life Sciences Entrepreneurship. The lease term expires in November 2022.

Item 3. Legal Proceedings

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. If we cannot resolve this matter with Codexis, then a jury trial is set for May 2022.

Eurofins Pharma Non-Competition/Non-Solicitation Litigation

In October 2018, Eurofins Pharma US Holdings II, Inc. (EPUSH II) and Eurofins DiscoverX Corporation, or Eurofins DiscoverX and collectively, Plaintiffs, filed a complaint against Todd R. Nelson, SGI-DNA, Inc., which is our prior name, and Synthetic Genomics, Inc. (our former parent company), which, together with Dr. Nelson and SGI-DNA are 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, or 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.

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 was held on June 25, 2021, at which time the court granted the motion in summary judgement on behalf of SGI-DNA and Dr. Nelson on three of the four claims. The court directed the parties back to mediation on the remaining claim but there was no resolution. The civil jury trial, initially scheduled for April 24, 2020, and rescheduled to August 27, 2021, is now a bench trial that has been rescheduled to begin May 6, 2022.

Item 4. Mine Safety Disclosures

Not applicable.

Part II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

Our common stock trades under the symbol "DNAY" on the Nasdaq Global Select Market and has been publicly traded since June 18, 2021. Prior to this time, there was no public market for our common stock.

Holders of Our Common Stock

As of January 6, 2022, there were approximately 52 holders of record of shares of our common stock. This number does not include stockholders for whom shares are held in "nominee" or "street" name.

Dividend Policy

We have never declared or paid any cash dividends on our capital stock. We currently intend to retain any future earnings to fund the development and expansion of our business, and therefore we do not anticipate paying cash dividends on our common stock in the foreseeable future. Any future determination to pay dividends will be at the discretion of our board of directors and will depend on our results of operations, financial condition, capital requirements, contractual restrictions and other factors deemed relevant by our board of directors.

Unregistered Sales of Equity Securities

The following list sets forth information regarding all unregistered securities sold by us since January 1, 2019.

Warrant Issuances

On March 8, 2019, we issued SGI 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 on August 27, 2019 to provide a warrant on 1,081,745 shares of common stock at an exercise price of $3.00.

On December 14, 2019, we issued SGI a warrant to purchase 154,022 shares of Series A-1 convertible preferred stock at an exercise price of $3.61 per share.

On March 4, 2021, we issued SVB a warrant to purchase shares of convertible 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 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.

Use of Proceeds from Public Offering of Common Stock

On June 22, 2021, we closed our initial public offering of 7,666,664 shares of common stock (inclusive of 999,999 shares of common stock from the full exercise of the overallotment option of shares granted to the underwriters). The offer and sale of all of the shares in the initial public offering were registered under the Securities Act pursuant to a registration statement on Form S-1 (File No. 333-256644), which was declared effective by the SEC on June 17, 2021. Jefferies LLC, Cowen and Company, LLC and KeyBanc Capital Markets Inc. acted as the underwriters. The public offering price of the shares sold in the offering was $16.00 per share. The total gross proceeds from the offering were $122.7 million.

After deducting underwriting discounts and commissions of $8.6 million and offering expenses paid by us of $1.6 million, the net proceeds from the offering were approximately $112.5 million.

There has been no material change in the planned use of proceeds from our IPO as described in our final IPO prospectus filed with the SEC on June 21, 2021 pursuant to rule 424(b) of the Securities Act. We invested the funds received in short-term and long-term, interest-bearing investment-grade securities and government securities.

Securities Authorized for Issuance Under Equity Compensation Plans

The information required by Item 5 of Form 10-K regarding equity compensation plans will be set forth in the Proxy Statement and is incorporated herein by reference.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

We did not purchase any of our registered equity securities during the period covered by this Annual Report.

Item 6. [Reserved].

Item 7. 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 our consolidated financial statements and the related notes and other financial information included elsewhere in this Annual Report. Some of the information contained in this discussion and analysis or set forth elsewhere in this Annual Report, including information with respect to our plans, strategy for our business and beliefs, includes forward-looking statements 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 Annual Report, our actual results may differ materially from those anticipated in these forward-looking statements.

Overview

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 high-quality 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;
- *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.
- *Short Oligo Ligation Assembly (SOLA) enzymatic DNA synthesis (EDS)*: SOLA EDS is a sustainable, scalable, and cost-effective approach designed to significantly reduce timelines for constructing synthetic DNA, RNA, and proteins compared to traditional chemical synthesis, paving the way for more efficient and effective development of mRNA-based vaccines, diagnostics, therapeutics, and personalized medicines. SOLA EDS technology will be integrated into Codex DNA's future BioXp Oligo Printer and BioXp Digital-to-Biological Converter systems, providing customers with an end-to-end solution for their life science research and synthetic biology needs.

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, and Director Independence” 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 December 31, 2021, we have launched eight BioXp kits, three benchtop reagent kits, and several other synthetic biology products, including 14 SARS-CoV-2 full-length genomes and RNA controls as well as our Vmax X2 cells. We have placed approximately 200 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 December 31, 2021, our customer base was composed of over 450 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 2021 represent the following markets and customer segments:

- *Areas of focus*: 35% cell and gene therapy, 31% biologics, 14% vaccine development, 10% genome editing and 10% other.
- *Research area*: 25% genetic/rare disease, 24% infectious disease, 12% immuno-oncology and 39% other.
- *Application*: 23% cell engineering, 21% protein engineering, 18% vaccines, 14% antibody engineering, 12% nucleic acid engineering and 10% other.
- *Customer type*: 29% biotechnology development, 25% pharmaceutical development, 20% academic institutions, 16% contract research and 10% other.

We estimate that our 2021 product sales mix statistics were as follows:

- *Sales mix*: 57% BioXp systems, 23% BioXp kits, 14% biofoundry services and 6% benchtop reagents.
- *Geographic mix*: 62% North America, 29% Europe/Middle East/Africa and 9% Asia Pacific.
- *Distribution mix*: 87% direct sales and 13% 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. On June 18, 2021, we completed our initial public offering (IPO) of 7,666,664 shares of common stock, including the exercise in full by the underwriters of their option to purchase up to 999,999 additional shares of common stock, for aggregate gross proceeds of $122.7 million. We received $112.5 million in net proceeds after deducting underwriting discounts and commissions and other offering expenses payable by us. Prior to our IPO, we had 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. Prior to our IPO, 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 years ended December 31, 2021 and 2020, our revenue was $11.0 million and $6.6 million, respectively. As of December 31, 2021, we had cash and cash equivalents of $82.8 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 $39.0 million and $18.0 million for the years ended December 31, 2021 and 2020, respectively. As of December 31, 2021, we had an accumulated deficit of $65.3 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.

Reverse Stock Split

On June 10, 2021, our Board of Directors and stockholders approved a 3-for-1 reverse stock split of our 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 this Annual Report 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.

Initial Public Offering

On June 18, 2021, we completed our IPO of 7,666,664 shares of common stock, including the exercise in full by the underwriters of their option to purchase up to 999,999 additional shares of common stock, for aggregate gross proceeds of $122.7 million. Our shares began trading on the Nasdaq Global Select Market under the ticker symbol "DNAY" on June 18, 2021. We received $112.5 million in net proceeds after deducting underwriting discounts and commissions and other offering expenses payable by us. Upon closing of the IPO, all outstanding convertible preferred stock converted into 15,079,329 shares of common stock and SGI's outstanding warrants were automatically exercised into 1,201,059 shares of common stock.

Acquisition

On November 18, 2021 (the Acquisition Date), we entered into a Share Purchase Agreement, with the stockholders of EtonBio Inc. (Eton), a California corporation, pursuant to which we agreed to purchase all of the outstanding shares of capital stock of Eton. The total purchase price was approximately $13.6 million, which was funded with our existing cash on hand.

Eton is a San Diego-based biotech company specializing in synthetic biology products and services, including DNA sequencing and oligo synthesis, for the global academic research, pharmaceutical, and biotechnology industries. Eton also markets DNA prep services and products such as antibodies, peptides, and metabolism assay kits.

Components of Results of Operations

Revenue

Revenue consists of product sales and royalties and other revenue. 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 and other revenue consist of fees charged for the license of non-exclusive rights of our patents to third parties and grant revenue received from government entities as reimbursement of expenses related to the development and use of synthetic biology tools to develop solutions to address various areas of concern. The grants typically require the performance of specific activities and timely reporting of results.

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. As we continue to expand our revenue opportunities, we launched our collaboration research program which works with government entities to develop solutions to specific areas of concern.

Collaboration and License Agreement with Pfizer

In December 2021, we entered into a Research Collaboration and License Agreement (Pfizer Agreement) with Pfizer Inc. (Pfizer), pursuant to which we agreed to collaborate with Pfizer to further develop our novel enzymatic DNA synthesis technology for Pfizer's use in its research and development of mRNA-based vaccines and biotherapies. The financial terms of the deal include an upfront payment from Pfizer to us, along with success-based technical milestone payments that could be earned in the near term. We are also eligible to receive additional milestone payments based on the achievement of specified development, regulatory and commercialization goals associated with any products developed from the application of our technology developed and licensed under the agreement.

We granted Pfizer a non-exclusive, worldwide license to use our enzymatic DNA synthesis technology for purposes of researching, developing, manufacturing and commercializing pharmaceutical and biopharmaceutical products and a limited-time option to convert such license to exclusive for specific applications. If Pfizer exercises its option for these application(s) within the applicable period, then the license to Pfizer will become exclusive for products for such application(s); provided that Pfizer may later convert the particular application back to non-exclusive.

Under the Pfizer Agreement, Pfizer made an upfront payment to us of $8 million and if we meet certain technical milestones, we will be eligible to receive an additional $10 million in near-term milestone payments associated with the Research Plan.

In addition to the upfront payment and technical milestone payments, Pfizer has agreed to make milestone payments to us upon the products meeting certain clinical milestones, with each product (other than exclusive products) being eligible for milestone payments up to $20 million if it were to meet the applicable clinical milestones and the first exclusive product in each exclusive field being eligible for milestone payments up to $55 million if it were to meet the applicable clinical milestones. Pfizer has also agreed to pay us up to $60 million in sales milestones for products (other than exclusive products) if aggregate net sales of such products meet certain thresholds and up to $180 million in sales milestones for exclusive products if aggregate net sales of the exclusive products meet certain thresholds. Provided the Pfizer Agreement remains in place, Pfizer will also pay escalating royalties from a low to mid-fraction of one percent of net sales of all products. Pfizer's obligations to pay royalties with respect to a product within a country will expire after specific criteria including such product no longer being covered by patent rights licensed to Pfizer by us in such country. Royalty payments are subject to reduction after the introduction of a biosimilar product in such country by a third party.

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 kits, benchtop reagents, biofoundry services and collaboration research programs. 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 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 continued expansion of 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, IT, 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 publicly traded 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, the Purchase Note, and our finance leases.

Change in Fair Value of Derivative Liabilities

Change in fair value of derivative liabilities consists of the change in fair value of our SGI participation right liability, warrant liabilities, contingent put option liability, and success fee contingent liability. We classify derivative liabilities 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 derivative liabilities as a component of other income (expense) in our consolidated statements of operations and comprehensive loss. In connection with our IPO in June 2021, the participation right was extinguished and the warrants underlying our warrant liability were exercised. The success fee contingent liability was paid in full in July 2021. At December 31, 2021, the contingent put option liability is listed as a derivative liability on our consolidated balance sheets.

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, 2021 and 2020, we had federal NOL carryforwards of $62.1 million and $28.4 million, respectively and state NOL carryforwards of $38.5 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 years presented given the existence of the full valuation allowance.

Results of Operations

Comparison of the Years Ended December 31, 2021 and 2020

The following table summarizes our results of operations for the years ended December 31, 2021 and 2020:

	Year Ended December 31,		
	2021	2020	Change
	(in thousands)		
Revenue			
Product sales	$ 8,462	$ 5,131	$ 3,331
Royalties and other revenue	2,581	1,445	1,136
Total revenue	11,043	6,576	4,467
Cost of revenue	6,744	2,951	3,793
Gross profit	4,299	3,625	674
Operating expenses:			
Research and development	14,548	8,925	5,623
Sales and marketing	10,896	6,931	3,965
General and administrative	14,229	4,130	10,099
Total operating expenses	39,673	19,986	19,687
Loss from operations	(35,374)	(16,361)	(19,013)
Other income (expense):			
Interest expense, net	(1,369)	(690)	(679)
Change in fair value of derivative liabilities	(1,521)	(880)	(641)
Loss on extinguishment of debt	(618)	—	(618)
Other expense, net	(62)	(74)	12
Total other income (expense), net	(3,570)	(1,644)	(1,926)
Loss before provision for income taxes	(38,944)	(18,005)	(20,939)
Provision for income taxes	(14)	(5)	(9)
Net loss	$ (38,958)	$ (18,010)	$ (20,948)

Revenue

Revenue for the year ended December 31, 2021 was $11.0 million, compared to $6.6 million for the year ended December 31, 2020. The increase of $4.5 million was primarily driven by a $3.3 million increase in product sales comprised of a $1.6 million increase in product sales of new 3250 BioXp instruments, a $0.9 million increase in reagent product sales due to an increased base of installed instruments, a $0.5 million increase in revenue attributable to the Eton acquisition, primarily in DNA sequencing, and a $0.3 million increase in biofoundry services as we continue to grow this service offering. Royalties and other revenue increased by $1.1 million because of collaboration research programs which began in 2021, as well as an increase in revenue related to the licensing of our products.

Cost of Revenue

Cost of revenue for the year ended December 31, 2021 was $6.7 million, compared to $3.0 million for the year ended December 31, 2020. The increase of $3.8 million was primarily driven by an increased volume of revenue and higher raw material costs associated with our reagent product sales of $1.5 million, a $1.2 million increase due to higher instrument sales and shipping charges, a $0.6 million increase in costs related to our collaboration research programs, a $0.6 million

increase in biofoundry services costs, and $0.3 million in costs primarily related to DNA sequencing. These increases were partially offset by a $0.4 million decrease in other costs,which are composed of overhead, indirect costs, manufacturing and pricing variances.

Research and Development Expenses

Research and development expenses for the year ended December 31, 2021 were $14.5 million, compared to $8.9 million for the year ended December 31, 2020. The increase of $5.6 million was primarily due to higher personnel expenses, facility related and other costs. Personnel expenses increased $3.7 million as we continue to increase our headcount related to our ongoing product development efforts, as well as costs associated with our Eton acquisition. This increase was partially offset by allocations of research and development costs attributable to our revenue from collaboration research programs. Facility related and other costs increased $1.9 million and were mainly due to general increases in research and development activities as part of our product development efforts and higher allocations due to the increase in headcount over the prior year.

Sales and Marketing Expenses

Sales and marketing expenses for the year ended December 31, 2021 were $10.9 million compared to $6.9 million for the year ended December 31, 2020, an increase of $4.0 million. Higher personnel expenses accounted for $3.4 million of the increase and was due to increased headcount as we build out our European and US sales and marketing teams to support increased revenue, a $0.3 million increase in professional services due to increased marketing activities, and an increase of $0.3 million in subscription based marketing platforms and programs.

General and Administrative Expenses

General and administrative expenses for the year ended December 31, 2021 were $14.2 million, compared to $4.1 million for the year ended December 31, 2020. The increase of $10.1 million was primarily due to increases in professional services, personnel expenses, facility related and other costs. Professional services increased $3.9 million and were due to higher utilization of consultants, as well as increases in audit, accounting and legal services as part of our initial public offering and ongoing public company requirements, and an increase of $3.8 million in personnel expenses due to higher headcount including additions to our executive leadership team, employee stock option compensation expense and employee recruiting fees. Facility related and other costs increased $2.4 million and were primarily due to higher insurance costs related to being a publicly traded company, cyber security and other general expenses in support of our increased headcount.

Other Income (Expense), Net

Other income (expense), net for the year ended December 31, 2021 was a net expense of $3.6 million, compared to a net expense of $1.6 million for the year ended December 31, 2020. The increase of $1.9 million was primarily due to an increase in interest expense as a result of the 2021 Loan Agreement, the change in fair value of derivative liabilities due to the completion of the IPO, and the loss on extinguishment of debt under the 2019 Loan Agreement.

Liquidity and Capital Resources

Sources of Liquidity

Since our inception, we have incurred significant operating losses. On June 18, 2021, we completed our IPO of 7,666,664 shares of common stock, including the exercise in full by the underwriters of their option to purchase up to 999,999 additional shares of common stock, for aggregate gross proceeds of $122.7 million. We received $112.5 million in net proceeds after deducting underwriting discounts and commissions and other offering expenses payable by us. Prior to our IPO, we had 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. Prior to our IPO, 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 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). As of December 31, 2021, we had cash and cash equivalents of $82.8 million.

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; and

- maintain, expand, enforce, defend and protect our intellectual property portfolio and provide reimbursement of third-party expenses related to our patent portfolio.

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. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interest of our stockholders will be or could be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our stockholders. Debt financing and equity offerings, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise funds through collaborations, or other similar arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or grant licenses on terms that may not be favorable to us and/or may reduce the value of our stock. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market our product candidates even if we would otherwise prefer to develop and market such product candidates ourselves.

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 Years Ended December 31, 2021 and 2020

The following table summarizes our consolidated cash flows for the years ended December 31, 2021 and 2020:

	Year Ended December 31,	
	2021	2020
	(in thousands)	
Net cash used in operating activities	$ (36,698)	$ (15,381)
Net cash used in investing activities	(15,040)	(204)
Net cash provided by (used in) financing activities	121,081	(96)
Net increase (decrease) in cash	$ 69,343	$ (15,681)

Operating Activities

During the year ended December 31, 2021, we used $36.7 million of cash in operations, primarily resulting from our net loss of $39.0 million and net cash used in changes in our operating assets and liabilities of $3.0 million, partially offset by non-cash charges of $5.3 million. Net changes in our operating assets and liabilities for the period ended December 31, 2021, compared to the prior year period consisted primarily of a $3.9 million increase in deposits, prepaid expenses and other current assets, a $1.5 million increase in inventories, a $0.8 million increase in lease liabilities, a $0.7 million increase in accounts receivable, and a $0.5 million increase in deferred revenue, partially offset by a $4.4 million increase in accounts payable, accrued payroll and accrued liabilities. Non-cash charges consisted primarily of the change in fair value of derivative liabilities of $1.5 million, stock-based compensation expense of $1.1 million, depreciation and amortization expense of $0.9 million, amortization of lease right-of-use assets of $0.7 million, loss on the extinguishment of debt of $0.6 million, and amortization of the debt discount of $0.5 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, change in fair value of derivative liabilities of $0.9 million, amortization of our right-of-use operating lease asset of $0.6 million, as well as amortization of the debt discount of $0.2 million.

Investing Activities

During the year ended December 31, 2021, net cash used in investing activities was $15.0 million, consisting of the Eton business acquisition, net of cash acquired of $13.2 million and $1.8 million related to purchases of property and equipment.

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

Financing Activities

During the year ended December 31, 2021, net cash provided by financing activities was $121.1 million, consisting primarily of net proceeds from our IPO of $112.5 million and from borrowings of $14.9 million from the issuance of debt under the 2021 Loan Agreement, partially offset by $6.1 million related to the repayment and extinguishment of debt from the 2019 Loan Agreement and $0.2 million in principal payments on leased equipment and other.

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 (Oxford) 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 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 had a contingent obligation to pay Oxford a success fee of $0.8 million upon the completion of our initial public 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 had 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 classified the contingent put option liability within derivative liabilities on our consolidated balance sheets. We remeasured both liabilities to fair value at each reporting date, and we recognized changes in the fair value as a component of other income (expense) in our consolidated statements of operations and comprehensive loss. We continued to recognize changes in the fair value of the success fee contingent liability until the success fee was paid. The contingent put option liability was extinguished when the 2019 Loan Agreement was repaid in full in March 2021. The success fee contingent liability was paid in full in July 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 SVB may determine in its 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 was exercisable into the number of preferred shares equal to approximately $0.2 million divided by the applicable warrant price. The Preferred Warrant was initially exercisable for Series A-1 convertible preferred 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 is exercisable at the original purchase price of the Series A-1 convertible preferred stock. When the Series A-1 convertible preferred stock in which the warrant would have been exercisable into converted into common stock, the warrant holder gained the right to

exercise the warrant for such number of shares of common stock into which the preferred shares would have converted into had they been exercised prior to the conversion. 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. The Preferred Warrant was exercised in June 2021 in exchange for 51,409 shares of common stock.

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 loan is 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 loan matures 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 loan 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 loan, in whole but not in part, at any time. If we elect to voluntarily prepay the term loan 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 loan upon an acceleration of the loan. Upon a voluntary or mandatory prepayment of the loan, we are also required to pay SVB's expenses and all accrued but unpaid interest on the loan 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 loan, or a voluntary or mandatory prepayment of the loan. 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. In August 2021, the 2021 Loan Agreement was amended to change the monthly compliance reporting to quarterly reporting. For the three months ended September 30, 2021, we were not in compliance with the trailing three-month minimum revenue requirement. In November 2021, we further amended the 2021 Loan Agreement so that the trailing three-month minimum revenue requirement begins December 31, 2021 and when our cash balance falls below $55.0 million. Additionally, the interest-only period was extended until August 1, 2022 and the maturity date was amended to January 1, 2025. We assessed the amendment to the 2021 Loan Agreement under ASC 470 and determined that the amendment met the criteria of a debt modification. We accounted for the change prospectively.

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, 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 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 December 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]	$ 3,003	$ 1,310	$ 711	$ 675	$ 307
Finance lease commitments [2]	85	85	—	—	—
Debt obligations [3]	17,652	1,103	16,149	400	—
Total	$ 20,740	$ 2,498	$ 16,860	$ 1,075	$ 307

(1) Consists of payments due for our leases of office and laboratory space in San Diego, California and Durham County, North Carolina that expire between in September 2022 and November 2027.
(2) Consists of payments due for our leases of two pieces of equipment that expire between October 2022 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 December 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 U.S. 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 Annual Report, 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 extended 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 sheets. 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 sheets. 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 sheets. Amounts are recorded as accounts receivable when our right to consideration is unconditional.

Product Revenue, Net

We recognize revenue on product sales to customers when the transfer of control happens, which generally occurs upon shipment. We recognize revenue on installation and training when the service has been rendered. We include a standard one year warranty with our product sales. These standard warranties are accounted for at the time product revenues are recognized. We also offer extended warranty for an additional fee. Revenue related to extended warranty is recognized on a straight-line basis over the 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.

Royalties and Other Revenue

Royalties and other revenue consist of fees charged for the license of non-exclusive rights of our patents to third parties and grant revenue received from government entities as reimbursement of expenses related to the development and use of synthetic biology tools to develop solutions to address various areas of concern. The royalties and other revenue are recognized at the same time as the third parties record the revenue associated with the use of the license. The grant revenue from the contracts is recognized as the services are performed or ratably over the milestone period and typically require the performance of specific activities and timely reporting of results. Associated expenses are recognized when

incurred. Revenue and related expenses are presented gross in the consolidated statements of operations and comprehensive loss.

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. 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.

Business Acquisitions

We account for acquisitions using the acquisition method of accounting. The fair value of purchase consideration is allocated to the tangible and intangible assets acquired, and liabilities assumed, based on their estimated fair values. The excess of the fair value of purchase consideration over the values of the identifiable assets acquired and liabilities assumed is recorded as goodwill. When determining the fair values of assets acquired and liabilities assumed, management makes significant estimates and assumptions, especially with respect to intangible assets.

Significant estimates in valuing certain identifiable assets include, but are not limited to, the selection of valuation methodologies, future expected cash flows, discount rates, and useful lives. Our estimates of fair value are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable and, as a result, actual results may differ from estimates. Acquisition costs, such as legal and consulting fees, are expensed as incurred and are included in general and administrative expenses in the consolidated statements of operations and comprehensive loss. During the measurement period, which is up to one year from the acquisition date, we may record adjustments to the assets acquired and liabilities assumed, with the corresponding offset to goodwill. Upon the conclusion of the measurement period, any subsequent adjustments are recorded in the consolidated statements of operations and comprehensive loss.

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

Prior to our IPO, as there was no public market for our common stock, the estimated fair value of our common stock was 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.

Following our IPO, the fair value of our common stock has been determined based on the quoted market price of our common stock.

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 in this Annual Report.

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.

Item 7A. Quantitative and Qualitative Disclosures about Market Risks

We are a smaller reporting company as defined by Item 10 of Regulation S-K and are not required to provide the information otherwise required under this Item.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the 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, 2021, the related consolidated statements of operations and comprehensive loss, convertible preferred stock and stockholders' equity (deficit), and cash flows for the year ended December 31, 2021, 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, 2021, and the results of its operations and its cash flows for the year ended December 31, 2021, in conformity with accounting principles generally accepted in the United States of America.

The consolidated financial statements of the Company as of and for the year ended December 31, 2020 were audited by OUM & Co. LLP, who joined WithumSmith+Brown, PC on July 15, 2021, and rendered their opinion on such statements on March 16, 2021 (June 14, 2021, as to the effects of the reverse stock split discussed in Note 18).

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 audit. 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 audit 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 audit, 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 audit 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 audit 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 audit provides a reasonable basis for our opinion.

/s/ WithumSmith+Brown, PC

We have served as the Company's auditor since 2020.

San Francisco, California

March 23, 2022

PCAOB ID Number 100

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, 2020, and the related consolidated statement of operations and comprehensive loss, convertible preferred stock and stockholders' deficit, and cash flows for 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, 2020, and the results of its operations and its cash flows for 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 audit. 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 audit 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 audit 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 audit 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 audit 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 audit provides a reasonable basis for our opinion.

/s/ OUM & CO. LLP

We served as the Company's auditor since 2020.

San Francisco, California

March 16, 2021 (June 14, 2021, as to the effects of the reverse stock split discussed in Note 18)

Codex DNA, Inc.
Consolidated Balance Sheets
(In thousands, except share and per share data)

	December 31,	
	2021	2020
Assets		
Current assets:		
Cash and cash equivalents	$ 82,806	$ 13,463
Accounts receivable, net of allowance for bad debts of $0 and $105 at December 31, 2021 and 2020, respectively	3,665	2,266
Inventory	2,368	601
Prepaid expenses and other current assets	4,345	851
Total current assets	93,184	17,181
Property and equipment, net	3,456	689
Right-of-use assets	2,281	3,090
Other long-term assets	609	81
Goodwill	14,330	3,497
Other intangible assets, net	2,397	2,325
Total Assets	$ 116,257	$ 26,863
Liabilities, convertible preferred stock and stockholders' equity (deficit)		
Current liabilities:		
Accounts payable	$ 2,499	$ 1,191
Accrued employee expenses	3,849	1,470
Finance lease liability, current portion	81	90
Operating lease liability, current portion	1,156	693
Deferred revenue, current portion	205	606
Other accrued liabilities	1,005	220
Notes payable, current portion	603	1,333
Other current liabilities	335	22
Total current liabilities	9,733	5,625
Finance lease liability, net of current portion	—	81
Operating lease liability, net of current portion	1,394	2,776
Notes payable, net of discount and current portion	14,088	3,353
Derivative liabilities	108	1,533
Deferred revenue, net of current portion	150	40
Total liabilities	$ 25,473	$ 13,408
Commitments and contingencies (Note 12)		
Convertible preferred stock		
Series Z Preferred stock, $0.0001 par value; 0 and 7,500,000 shares authorized at December 31, 2021 and 2020, respectively; 0 and 2,500,000 shares issued and outstanding at December 31, 2021 and 2020, respectively	—	1
Series A Preferred stock, $0.0001 par value; 0 and 22,797,830 shares authorized at December 31, 2021 and 2020, respectively; 0 and 7,599,274 shares issued and outstanding at December 31, 2021 and 2020, respectively	—	20,992
Series A1 Preferred stock, $0.0001 par value; 0 and 15,402,237 shares authorized at December 31, 2021 and 2020, respectively; 0 and 4,980,055 shares issued and outstanding at December 31, 2021 and 2020, respectively	—	17,921
Stockholders' equity (deficit)		
Preferred stock, $0.0001 par value; 5,000,000 and 0 shares authorized at December 31, 2021 and 2020, respectively. No shares issued and outstanding	—	—
Common stock, $0.0001 par value; 100,000,000 and 72,000,000 shares authorized at December 31, 2021 and 2020, respectively; 29,318,578 and 5,023,957 shares issued and outstanding at December 31, 2021 and 2020, respectively	5	2
Additional paid-in capital	156,049	851
Accumulated deficit	(65,270)	(26,312)
Total stockholders' equity (deficit)	90,784	(25,459)
Total liabilities, convertible preferred stock and stockholders' equity (deficit)	$ 116,257	$ 26,863

The accompanying notes are an integral part of these consolidated financial statements.

Codex DNA, Inc.
Consolidated Statements of Operations and Comprehensive Loss
(in thousands, except share and per share data)

	Year Ended December 31,	
	2021	2020
Revenue:		
Product sales	$ 8,462	$ 5,131
Royalties and other revenue	2,581	1,445
Total revenue	11,043	6,576
Cost of revenue	6,744	2,951
Gross profit	4,299	3,625
Operating expenses:		
Research and development	14,548	8,925
Sales and marketing	10,896	6,931
General and administrative	14,229	4,130
Total operating expenses	39,673	19,986
Loss from operations	(35,374)	(16,361)
Other expense, net:		
Interest expense, net	(1,369)	(690)
Change in fair value of derivative liabilities	(1,521)	(880)
Loss on extinguishment of debt	(618)	—
Other expense, net	(62)	(74)
Total other expense, net	(3,570)	(1,644)
Loss before provision for income taxes	(38,944)	(18,005)
Provision for income taxes	$ (14)	$ (5)
Net loss and comprehensive loss	$ (38,958)	$ (18,010)
Net loss attributable to common stockholders	$ (38,958)	$ (18,010)
Net loss per share attributable to common stockholders—basic and diluted	$ (2.14)	$ (3.60)
Weighted average common stock outstanding—basic and diluted	18,222,495	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			
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)
Issuance of shares of common stock upon initial public offering, net of issuance costs of $8,587	—	—	7,666,664	1	112,483	—	112,484
Conversion of shares of convertible preferred stock into an equivalent number of shares of common stock	(15,079,329)	(38,914)	15,079,329	2	38,912	—	38,914
Issuance of warrant and conversion into shares of common stock	—	—	1,252,468	—	2,770	—	2,770
Payment of offering costs	—	—	—	—	(226)	—	(226)
Issuance of Common Stock upon exercise of stock options	—	—	296,160	—	173	—	173
Stock-based compensation expense	—	—	—	—	1,086	—	1,086
Net loss	—	—	—	—	—	(38,958)	(38,958)
Balances at December 31, 2021	—	—	29,318,578	5	156,049	(65,270)	90,784

The accompanying notes are an integral part of these consolidated financial statements.

Codex DNA, Inc.
Consolidated Statements of Cash Flows
(in thousands)

	Year Ended December 31,	
	2021	2020
Cash Flows From Operating Activities:		
Net loss	$ (38,958)	$ (18,010)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation	450	403
Amortization of intangible assets	458	463
Amortization of debt discount	480	214
Loss on disposal of assets	27	—
Impairment of intangible asset	—	73
Loss on debt extinguishment	618	—
Stock-based compensation	1,086	43
Amortization of lease right-of-use assets	666	591
Change in fair value of warrant liability	1,854	425
Change in fair value of put option liability	(195)	(55)
Change in fair value of participation right liability	(420)	420
Change in fair value of success fee liability	282	89
Non-cash interest on finance leases	(9)	(17)
Changes in assets and liabilities:		
Accounts receivable	(735)	(774)
Inventories	(1,462)	111
Deposits, prepaid expenses and other current assets	(3,916)	(765)
Accounts payable, accrued payroll and accrued liabilities	4,394	1,404
Deferred revenue	(542)	501
Operating lease liabilities	(776)	(497)
Net cash used in operating activities	(36,698)	(15,381)
Cash Flows From Investing Activities:		
Purchase of acquired business, net of cash acquired	(13,186)	—
Purchase of property and equipment	(1,854)	(204)
Net cash used in investing activities	(15,040)	(204)
Cash Flows From Financing Activities:		
Borrowings on term loan, net	14,872	—
Repayment of term loan	(5,000)	—
Debt extinguishment costs	(1,141)	—
Finance lease liability	(81)	(107)
Net proceeds from issuance of shares of common stock in initial public offering	112,484	—
Payments of offering costs	(226)	—
Proceeds from the exercise of common stock options	173	11
Net cash provided by (used in) financing activities	121,081	(96)
Net Increase (Decrease) In Cash And Cash Equivalents	69,343	(15,681)
Cash and cash equivalents at beginning of year	13,463	29,144
Cash and cash equivalents at end of year	$ 82,806	$ 13,463
Supplemental Disclosure Of Cash Flow Information:		
Cash paid for interest	$ 825	$ 464
Purchases of property and equipment included in accounts payable and accrued expenses	$ 684	$ —
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	$ —
Conversion of shares of convertible preferred stock into common stock	$ 38,914	$ —
Conversion of warrant into shares of common stock	$ 2,770	$ —
Right-of-use-assets obtained in exchange for operating lease liabilities	$ 1,904	$ —
Right-of-use asset derecognized upon lease modification	$ 2,047	$ —

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 YEARS ENDED ON DECEMBER 31, 2020 AND DECEMBER 31, 2021

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 September 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 (U.S. 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.

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 consolidated 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.

On June 18, 2021, the Company completed an initial public offering (IPO) of 7,666,664 shares of its common stock, including the exercise in full by the underwriters of their option to purchase up to 999,999 additional shares of common stock, for aggregate gross proceeds of $122.7 million. The Company's shares began trading on the Nasdaq Global Select Market under the ticker symbol "DNAY" on June 18, 2021. The Company received $112.5 million in net proceeds after deducting underwriting discounts and commissions and other offering expenses payable by the Company. Upon closing of the IPO, all outstanding convertible preferred stock converted into 15,079,329 shares of common stock and SGI's outstanding warrants were automatically exercised into 1,201,059 shares of common stock.

On November 18, 2021, the Company entered into a Share Purchase Agreement, with the stockholders of EtonBio Inc., a California corporation ("Eton"), pursuant to which, the Company agreed to purchase all of the outstanding shares of capital stock of Eton (see Note 15). The total purchase price was approximately $13.6 million, which was funded with the Company's existing cash on hand. Eton is a San Diego-based biotech company specializing in synthetic biology products and services, including DNA sequencing and oligo synthesis, for the global academic research, pharmaceutical, and biotechnology industries. Eton also markets DNA prep services and products such as antibodies, peptides, and metabolism assay kits.

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.

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 U.S. GAAP and included the accounts of the Company and its wholly owned subsidiaries after the elimination of all significant intercompany accounts and transactions.

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. 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 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, accrued warranty and valuation of acquired businesses 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 year ended December 31, 2021, one customer accounted for 11% of the Company's accounts receivable balance. For the year ended December 31, 2021, one customer accounted for 14% of the Company's revenue. For the year ended December 31, 2020, one customer accounted for 23% of the Company's accounts receivable balance and 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 and Cash Equivalents

Cash and cash equivalents consist of cash deposited with banks and money market funds. The Company considers all highly liquid investments with an original maturity of 90 days or less at the date of purchase to be cash equivalents. The Company's cash equivalents of $79.9 million, which are funds held in a money market account, are measured at fair value on a recurring basis. Cash equivalents for the year ended December 31, 2020 was $0.

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 December 31, 2021 and 2020 was $0 and $0.1 million, respectively.

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 statements of operations and comprehensive loss. Maintenance and repairs are charged to the general and administrative expenses in the consolidated statements 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, as well as from the Eton acquisition. 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 March 2019 and Eton acquisitions:

- March 2019 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 Notes 1 and 6).
- Eton Acquisition
  - Customer relationships: valued by management using an income approach.
  - Trade name: valued by management using an income approach.
  - Non-competition agreements: valued by management using an income approach.

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 year ended December 31, 2021. For the year ended December 31, 2020, the Company recorded an impairment charge of $0.1 million on its trademark (see Notes 1 and 6).

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 statements 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 years ended December 31, 2021 and 2020, except for the $0.1 million trademark impairment charge recorded in 2020.

Business Combinations

The Company accounts for acquisitions using the acquisition method of accounting. The fair value of purchase consideration is allocated to the tangible and intangible assets acquired, and liabilities assumed, based on their estimated fair values. The excess of the fair value of purchase consideration over the fair values of the identifiable assets acquired and liabilities assumed is recorded as goodwill. When determining the fair values of assets acquired and liabilities assumed, management makes significant estimates and assumptions, especially with respect to intangible assets.

Significant estimates in valuing certain identifiable assets include, but are not limited to, the selection of valuation methodologies, future expected cash flows, discount rates, and useful lives. Management's estimates of fair value are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable and, as a result, actual results may differ from estimates. Acquisition costs, such as legal and consulting fees, are expensed as incurred and are included in general and administrative expenses in the consolidated statements of operations and comprehensive loss. During the measurement period, which is up to one year from the acquisition date, the Company may record adjustments to the assets acquired and liabilities assumed, with the corresponding offset to goodwill. Upon the conclusion of the measurement period, any subsequent adjustments are recorded in the consolidated statements of operations and comprehensive loss. See Note 15 for additional information regarding business combinations.

Deferred Offering Costs

The Company capitalizes within other current assets certain legal, consulting and other third-party fees that are directly related to the Company's in-process equity financings, 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 $0.9 million and $0 offering costs capitalized during the years ended December 31, 2021 and 2020, respectively.

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 2021 and 2020. Accordingly, no provision for federal income taxes has been presented in the accompanying consolidated statements 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 years ended December 31, 2021 and 2020 (see Note 11).

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 statements 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 extended 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 sheets. 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 sheets. 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 sheets. Amounts are recorded as accounts receivable when the right to consideration is unconditional.

Product Revenue, Net

The Company recognizes revenue on product sales to customers when the transfer of control happens, which generally occurs upon shipment. The Company recognizes revenue on installation and training when the service has been rendered. The Company includes a standard one year warranty with its product sales.These standard warranties are accounted for at the time product revenues are recognized. The Company also offers extended warranty for an additional fee. Revenue related to extended warranty is recognized on a straight-line basis over the term. Product revenues are recorded net of variable consideration, including discounts.

Product Returns

The Company does not generally offer customers the ability to return product and has received an immaterial amount of returns to date.

Royalties and Other Revenue

Royalties and other revenue consist of fees charged for the license of non-exclusive rights of the Company's patents to third parties and grant revenue received from government entities as reimbursement of expenses related to the development and use of synthetic biology tools to develop solutions to address various areas of concern. The royalties and other revenue are recognized at the same time as the third parties record the revenue associated with the use of the license. The grant revenue from the contracts is recognized as the services are performed or ratably over the milestone period and typically require the performance of specific activities and timely reporting of results. Associated expenses are recognized when incurred. Revenue and related expenses are presented gross in the consolidated statements of operations and comprehensive loss.

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 statements 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 years ended December 31, 2021 and 2020 are summarized as follows (in thousands):

Balance at December 31, 2019	$ 145
Warranty revenue deferred	404
Warranty revenue recognized	(292)
Balance at December 31, 2020	257
Warranty revenue deferred	487
Warranty revenue recognized	(389)
Balance at December 31, 2021	$ 355

The deferred revenue for warranties at December 31, 2021 and 2020 are summarized as follows (in thousands):

	December 31,	
	2021	**2020**
Deferred warranty revenue, current portion	$ 205	$ 217
Deferred warranty revenue, net of current portion	150	40
Total deferred warranty revenue	$ 355	$ 257

Shipping and Handling Costs

Shipping and handling costs are included as a component of cost of revenue in the consolidated statements 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 3).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 years ended December 31, 2021 and 2020 were $0.9 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 years ended December 31, 2021 and 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 shares of common stock 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 shares of common stock outstanding for the period, including potential dilutive shares of common stock

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 shares of common stock 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 years ended December 31, 2021 and 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 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, 2022. 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.

In October 2021, the FASB issued ASU 2021-08, Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers. The ASU requires entities to apply Topic 606 to recognize and measure contract assets and contract liabilities in a business combination. The amendments improve comparability after the business combination by providing consistent recognition and measurement guidance for revenue contracts with customers acquired in a business combination and revenue contracts with customers not acquired in a business combination. The ASU is effective for fiscal years, including interim periods within those fiscal years, beginning after December 15, 2022. Entities should apply the amendments prospectively and early adoption is permitted. The Company does not expect the adoption of ASU 2021-08 to have a material impact on its consolidated financial statements and related disclosures.

In November 2021, the FASB issued ASU No. 2021-10, Disclosures by Business Entities about Government Assistance. The ASU codifies new requirements to disclose information about the nature of certain government assistance received, the accounting policy used to account for the transactions, the location in the financial statements where such transactions

were recorded and significant terms and conditions associated with such transactions. The guidance is effective for annual periods beginning after December 15, 2021. The Company does do not expect the adoption of ASU No. 2021-10 to have a material impact to its consolidated financial statements and related disclosures.

3. FAIR VALUE MEASUREMENT

The following table summarizes the fair values of the Company's derivative liabilities on the consolidated balance sheets which comprise money market funds, the participation right liability, warrant liability, contingent put liability, and success fee contingent liability (in thousands):

	Fair value measurements as of December 31, 2021			
	Level 1	Level 2	Level 3	Total
Assets				
Money market funds	$ 79,893	$ —	$ —	$ 79,893
Total	$ 79,893	$ —	$ —	$ 79,893
Liabilities				
Contingent put option liability	$ —	$ —	$ 108	$ 108
Total	$ —	$ —	$ 108	$ 108

	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 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). 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 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. As of December 31, 2020, the Company determined 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, 2021 and 2020, the fair value of the participation right was valued at $0 due to the liability's extinguishment pursuant to the Company's IPO and $0.4 million, respectively.

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 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, the significant quantitative inputs were a 0.1% risk-free interest rate, an expected term of 2.0 years, an expected volatility of 83.6% and a 0% expected dividend yield. Based on these significant quantitative inputs, the fair value of the Series A-1 convertible preferred stock warrant as of December 31, 2020 was $3.87 per share. Upon the closing of the IPO, SGI's outstanding preferred stock warrants were automatically exercised into 119,315 shares of common stock. Subsequent to the closing of the IPO, all outstanding warrants issued pursuant to the 2021 Loan

Agreement were exercised into 51,409 shares of common stock. As of December 31, 2021, there were no outstanding preferred stock warrants.

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 consolidated statements of operations and comprehensive loss. The significant inputs not observable in the market consist of the adjusted market rate of debt and the probability of default. As of December 31, 2021 and 2020, the adjusted market rate of debt was 4.24% and 7.23%, respectively and the probability of default was 21% and 39%, respectively. A significant change in those inputs could cause a significant change in valuation.

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). Due to the Company's IPO on June 18, 2021, the fair value of the success fee contingent liability was classified as a Level 1 input due to the use of an observable market quote in an active market. The success fee was paid in full in July 2021, and the liability was extinguished. As of December 31, 2020, 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 fair 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 is 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 consolidated statements 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	420	425	(55)	89
Fair value at December 31, 2020	420	594	51	468
Change in fair value	(30)	1,854	(195)	282
Issuance of liability	—	322	303	—
Extinguishment of liability	(390)	(2,770)	(51)	—
Transfer out of Level 3 to Level 1	—	—	—	(750)
Fair value at December 31, 2021	$ —	$ —	$ 108	$ —

For the years ended December 31, 2021 and 2020, the Company recorded a change in fair value of derivative liabilities included in other expense of $1.5 million and $0.9 million, respectively.

4. INVENTORY

Inventories include material, labor and overhead and are stated at the lower of cost (first-in, first-out method) or net realizable value. The components of inventory are as follows as of December 31, 2021 and 2020 (in thousands):

	December 31,	
	2021	2020
Raw materials	$ 962	$ 299
Work in process and sub-assemblies	896	201
Finished goods	510	101
Total	$ 2,368	$ 601

5. PROPERTY AND EQUIPMENT

Property and equipment consisted of the following on December 31, 2021 and 2020 (in thousands):

	December 31,	
	2021	2020
Machinery and equipment	$ 2,589	$ 1,315
Computer hardware and software	29	6
Leasehold improvements	95	32
Construction in progress	1,536	102
Total	4,249	1,455
Less: Accumulated depreciation and amortization	(793)	(766)
Total property and equipment, net	$ 3,456	$ 689

Depreciation expense for the years ended December 31, 2021 and 2020 was $0.5 million and $0.4 million, respectively, and is included in operating expenses.

6. GOODWILL AND OTHER INTANGIBLE ASSETS

Goodwill

As part of the March 8, 2019 transaction (see Note 1) and the Eton acquisition (See Note 1 and Note 15), the Company acquired intangible assets with resulting goodwill. The resulting goodwill carries a value of approximately $14.3 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 years ended December 31, 2021 and 2020, the Company has not recorded any impairment of goodwill.

Other Intangible Assets

Other intangible assets acquired as a part of the March 8, 2019 transaction (see Note 1) 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), and as a result the amount allocated to the trade name of $0.1 million was deemed impaired and written off in April 2020.

The Company acquired $0.5 million of additional intangible assets as a part of the Eton acquisition with useful lives ranging from 3 to 15 years (see Note 15).

Amortization expense related to the intangible assets for the each of the years ended December 31, 2021 and 2020 was approximately $0.5 million.

The following table summarizes the estimated future amortization expense of the intangible assets (in thousands):

Years ending December 31:		
2022	$	515
2023		515
2024		510
2025		478
2026		103
Thereafter		276
Total	$	2,397

7. LEASES

As of December 31, 2021, the Company had seven outstanding leases for office and laboratory space and scientific manufacturing equipment. The leases have terms between 9 and 70 months. Included among these are five leases for office and laboratory space assumed by the Company in connection with the Eton acquisition in November 2021 (Note 15).

Corporate Headquarters

In September 2021, the Company entered into the Wateridge Pointe lease for future office and laboratory space and concurrently signed a second amendment to the operating lease agreement for its corporate headquarters located at 9535 Waples Street, San Diego, California (the Second Amendment). Under the Second Amendment, the lease at 9535 Waples Street will terminate upon the occupancy of office and laboratory space at 10421 and 10431 Wateridge Circle, San Diego, California, which will occur subsequent to the renovation and build-out of the spaces. The Wateridge Pointe lease provides for a tenant improvement (TI) allowance for the renovation and build-out of the spaces up to $185.00 per square foot, or approximately $12.3 million, with an additional allowance of up to $10.00 per square foot, or approximately $0.7 million if properly requested by the Company. The lessor is solely responsible for the management and payment of the tenant improvements and these expenses will be recorded as lessor improvements per ASC 842 guidance. Rent for the Wateridge Pointe lease will be approximately $3.9 million per year beginning upon lease commencement, subject to annual increases of 3%. The Wateridge Pointe lease provides for a 10 year and 3 month term and the Company is entitled to one option to extend the lease term for an additional five years. Occupancy of 10421 and 10431 Wateridge Circle and the corresponding termination of the lease at 9535 Waples Street are expected to occur in the second half of 2022.

Upon the execution of the Second Amendment, which was deemed to be a lease modification, the Company re-evaluated the assumptions made at the original lease commencement date. The Company determined the Second Amendment consists of a single contract under ASC 842. Accordingly, the Company bifurcated the components of the modified lease. Upon execution of the Second Amendment the Company adjusted the right-of-use asset and lease liability for the reduced term of the 9535 Waples Street lease component. In addition the Company will record a right-of-use asset and lease liability on the commencement date of the 10421 and 10431 Wateridge Circle lease components.

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 occurred 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 sheets 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 expired on April 25, 2021.

Summary of Lease Cost

The components of lease cost under ASC 842 are as follows (in thousands):

	December 31,	
	2021	2020
Lease costs		
Finance lease cost:		
Payment of finance lease liability	$ 81	$ 107
Interest on lease liabilities	9	17
Amortization of right-of-use asset	666	591
Variable lease cost	475	350
Total lease cost	$ 1,231	$ 1,065

Supplemental disclosure of cash flow information related to leases are as follows (in thousands):

	December 31,	
	2021	2020
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	$ 1,031	$ 826
Operating cash flows from finance leases	$ 9	$ 17
Financing cash flows from finance leases	$ 81	$ 107

The weighted-average remaining lease term and discount rate were as follows:

	December 31,	
	2021	2020
Weighted-average remaining lease term		
Finance leases	1.0 years	1.8 years
Operating leases	3.9 years	4.1 years
Weighted-average discount rate		
Finance leases	7.7 %	7.9 %
Operating leases	8.5 %	8.9 %

The following table summarizes the minimum lease payments of the Company's operating and finance lease liabilities as of December 31, 2021 (in thousands):

Year Ending December 31,	Operating	Finance
2022	$ 1,310	$ 85
2023	388	—
2024	323	—
2025	333	—
2026	343	—
Thereafter	307	—
Total future minimum lease payments	3,004	85
Less: imputed interest	(454)	(4)
Present value of operating lease liability	$ 2,550	$ 81
Less: current portion of lease liability	$ (1,156)	$ (81)
Non-current portion of lease liability	$ 1,394	$ —

The table above excludes an estimated $45.1 million of legally binding minimum lease payments to be made over a period of approximately 10 years for the lease at 10421 and 10431 Wateridge Circle, San Diego, California that has been executed but not yet commenced as of December 31, 2021. Commencement of the lease at 10421 and 10431 Wateridge Circle is expected to occur in the second half of 2022.

8. NOTES PAYABLE

Loan and Security Agreement

As of December 31, 2021 and 2020, the loans payable on the consolidated balance sheets pertains to the Loan and Security Agreement with Silicon Valley Bank and the Loan and Security Agreement with Oxford, respectively, and consists of the following (in thousands):

	December 31,	
	2021	2020
Principal amount of loans payable	$ 15,000	$ 5,000
Less: Current portion of loans payable	(603)	(1,333)
Loans payable, net of current portion	14,397	3,667
Accrued Interest	94	90
Final debt payment liability	400	287
Debt discount and financing costs, net of accretion	(803)	(691)
Loans payable, net of discount and current portion	$ 14,088	$ 3,353

2019 Loan and Security Agreement

On September 5, 2019, the Company entered into a Loan and Security Agreement with Oxford Finance LLC as the lender (the 2019 Loan Agreement). Under the 2019 Loan Agreement the Company borrowed a total of $5.0 million in secured loans. These loans were repaid in full in March 2021 with the proceeds from the 2021 Loan Agreement. In connection with the repayment, the Company recognized a loss on debt extinguishment of $0.6 million which is included in other expense, net in the consolidated statements of operations and comprehensive loss. 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 the Company's assets, other than intellectual property, which was subject to a negative pledge. 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.

In connection with the 2019 Loan Agreement, the Company had a contingent obligation to pay Oxford a success fee of $0.8 million upon the completion of the Company's IPO. The Company had also identified a bifurcated compound derivative liability related to a contingent interest feature and acceleration clause (contingent put option). The fair value of the success fee and the contingent put option were recorded within derivative liabilities on the consolidated balance sheets and corresponding discount to the loans under the 2019 Loan Agreement. The Company remeasured both liabilities to fair value at each reporting date, and recognized changes in the fair value as a component of other income (expense) in the consolidated statements of operations and comprehensive loss. The Company continued to recognize changes in the fair value of the success fee contingent liability until the success fee was paid. The success fee contingent liability was paid in full during in July 2021. The contingent put option liability was extinguished when the 2019 Loan Agreement was terminated in March 2021.

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 was 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 was exercisable at the original purchase price of the Series A-1 convertible preferred stock. When the Series A-1 convertible preferred stock in which the warrant would have been exercisable into converted into common stock, the warrant holder gained the right to exercise the warrant for such number of shares of common stock into which the preferred shares would have converted into had they been exercised prior to the conversion. The Preferred Warrant was exercised in June 2021 in exchange for 51,409 shares of common stock.

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 loan is secured by substantially all of the Company's assets, other than intellectual property. The Company has agreed not to encumber its intellectual property assets, except as permitted by the 2021 Loan Agreement. For the year ended December 31, 2021, the effective interest rate on outstanding borrowings was approximately 10.15%.

The term loan matures 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 loan 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.

The Company may elect to prepay the term loan, in whole but not in part, at any time. If the Company elects to voluntarily prepay the term loan 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 loan upon an acceleration of the loan. Upon a voluntary or mandatory prepayment of the loan, the Company is also required to pay SVB's expenses and all accrued but unpaid interest on the loan 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 loan, or a voluntary or mandatory prepayment of the loan. 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. In August 2021, the 2021 Loan

Agreement was amended to change the monthly compliance reporting to quarterly reporting. For the three months ended September 30, 2021, the Company was not in compliance with the trailing three-month minimum revenue requirement. In November 2021, the Company further amended the 2021 Loan Agreement so that the trailing three-month minimum revenue requirement begins December 31, 2021 and once the Company's cash balance falls below $55.0 million. Additionally, the interest-only period was extended until August 1, 2022 and the maturity date was amended to January 1, 2025, provided the interest-only period may be extended to January 1, 2023 if SVB is satisfied the Company has achieved the revenue milestone as per the second amendment, subject to confirmatory lender calls. The Company assessed the amendment to the 2021 Loan Agreement under ASC 470 and determined that the amendment met the criteria of a debt modification. The Company accounted for the change prospectively.

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 its covenants as of December 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 consolidated financial statements. The contingent put option liability is classified as a component of derivative liabilities on the consolidated balance sheets. As of December 31, 2021, 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 3).

As of December 31, 2021, the estimated future principal payments due were as follows:

Estimated future principal payments due	
2022	$ —
2023	7,500
2024	7,500
Total	$ 15,000

9. STOCKHOLDERS' EQUITY

On June 18, 2021, the Company completed its IPO of 7,666,664 shares of its common stock, including the exercise in full by the underwriters of their option to purchase up to 999,999 additional shares of common stock, for aggregate gross proceeds of $122.7 million. The Company's common stock began trading on the Nasdaq Global Select Market under the ticker symbol "DNAY" on June 18, 2021. The Company received $112.5 million in net proceeds after deducting underwriting discounts and commissions and other offering expenses payable by the Company. Upon closing of the IPO, all outstanding convertible preferred stock converted into 15,079,329 shares of common stock and SGI's outstanding warrants

were automatically exercised into 1,201,059 shares of common stock. Subsequent to the closing of the IPO, all outstanding warrants issued pursuant to the 2021 Loan Agreement were exercised into 51,409 shares of common stock.

10. STOCK-BASED COMPENSATION

For the year ended on December 31, 2021 and 2020, the Company recorded stock-based compensation expense of approximately $1.1 million and $43,000, respectively. No income tax benefit was recognized in the accompanying 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 2019. The 2019 Plan permitted 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 Equity Incentive Plan (the 2021 Plan). 6,000,000 shares of common stock were reserved for issuance under the 2021 Plan.

The 2021 Plan provided for the grant of incentive and non-statutory stock options to employees, non-employee 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 non-statutory 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 granted the Company a right of first refusal to repurchase shares issued under the plan at a price set by the optionee, which right terminated upon the IPO. As of December 31, 2021 and 2020, there were no outstanding shares subject to these repurchase rights.

Effective in connection with the IPO, the Company established the 2021 Employee Stock Purchase Plan (the ESPP). The maximum number of shares of common stock that may be issued under the ESPP was initially 350,000. Additionally, the number of shares reserved and available for issuance under the ESPP automatically increases each January 1, beginning on January 1, 2022 and each January 1 thereafter, by the lesser of (i) 1,050,000 shares of common stock, (ii) 1.0% of the total number of shares of common stock outstanding on December 31 of the preceding calendar year, or (iii) such smaller number of shares of common stock as the Company's board of directors may designate. As of December 31, 2021, the number of shares of common stock that may be issued under the ESPP is 350,000.

The ESPP enables eligible employees to purchase shares of common stock of the Company at the end of each offering period at a price equal to 85% of the fair market value of the shares on the first business day or the last business day of the offering period, whichever is lower. Participation in the ESPP is voluntary. Eligible employees become participants in the ESPP by enrolling in the plan and authorizing payroll deductions. At the end of each offering period, payroll deductions that have accumulated are used to purchase shares of the Company's shares at the discounted price. The Company makes no contributions to the ESPP. A participant may withdraw from the ESPP or suspend contributions to the ESPP. If the participant elects to withdraw during an offering, all contributions are refunded as soon as administratively practicable. If a participant elects to withdraw or suspend contributions, they will not be able to re-enroll in the current offering but may elect to participate in future offerings. The ESPP purchases only whole shares of the Company's shares. The Company's first ESPP offering period began December 1, 2021 and will end on June 1, 2022, with a second offering period commencing on June 1, 2022. Subsequent offering periods will be on a rolling six-month basis.

As of December 31, 2021, no shares of common stock have been issued under the ESPP. Share-based compensation expense related to the ESPP of $39,000 for the year ended December 31, 2021 was recorded in operating expenses.

In June 2021, the Company established the 2021 Stock Incentive Plan (the 2021 SIP). The 2021 SIP became effective on the effective date of the IPO, at which time the Company ceased granting awards under the 2021 Plan. The 2021 SIP allows the Company's compensation committee to grant equity-based awards to the Company's employees, directors and consultants. A total of 3,500,000 shares of common stock were initially reserved for issuance under the 2021 SIP, plus the number of shares (not to exceed 2,459,970 shares) consisting of (i) the shares of common stock that were available for the issuance of awards under the 2021 Plan at the time the 2021 SIP became effective, which ceased to be available for future issuance under the 2021 Plan at such time and (ii) any shares subject to outstanding options or other share awards that were granted under the 2019 Plan and the 2021 Plan that terminate or expire prior to exercise or settlement; are forfeited because of the failure to vest; or are reacquired or withheld (or not issued) to satisfy a tax withholding obligation or the purchase or exercise price. In addition, the number of shares reserved and available for issuance under the 2021 SIP automatically increases each January 1, beginning on January 1, 2022 and each January 1 thereafter by the lesser of

5,250,000 shares or 5% of the outstanding number of shares of common stock on the immediately preceding December 31, or such lesser number of shares as determined by the Company's board of directors. As of December 31, 2021, the number of shares of common stock reserved for issuance under the 2021 SIP is 3,350,226.

Stock option activity under the 2019 Plan, the 2021 Plan and the 2021 SIP for the years ended December 31, 2021 and 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 December 31, 2019	705,548	$ 0.55	9.5	$ 117
Options granted	303,065	0.72		
Options exercised	(23,957)	0.49		
Options cancelled	(224,497)	0.64		
Balances at December 31, 2020	760,159	$ 0.60	8.7	$ 2,884
Options granted	2,340,264	6.83		
Options exercised	(296,160)	0.59		
Options cancelled	(253,279)	2.86		
Balances at December 31, 2021	2,550,984	$ 6.09	9.1	$ 12,417
Vested and expected to vest at December 31, 2021	1,919,893	$ 5.83	9.1	$ 9,828
Vested and expected to vest at December 31, 2020	760,159	$ 0.60	8.7	$ 2,884
Exercisable at December 31, 2021	234,967	$ 2.09	8.2	$ 2,048
Exercisable at December 31, 2020	256,888	$ 0.56	8.5	$ 988

There were 2,340,264 and 303,065 options granted during the years ended December 31, 2021 and 2020, respectively. The weighted average grant date calculated fair value of options granted during the years ended December 31, 2021 and 2020 was $4.05 and $0.26 per share, respectively.

The calculated value of option grants during the years ended on December 31, 2021 and 2020 were estimated using the Black-Scholes option pricing model with the following weighted average assumptions:

	Year Ended December 31,	
	2021	2020
Risk free interest rate	1.2 %	1.1 %
Expected dividend yield	— %	— %
Expected term (in years)	6.4 years	6.1 years
Expected volatility	39.9 %	36.4 %

Stock-based compensation expense related to stock options was classified in the consolidated statements of operations and comprehensive loss as follows (in thousands):

	Year Ended December 31,	
	2021	2020
Research and development	$ 25	$ 13
Sales and marketing	93	5
General and administrative	929	25
Total	$ 1,047	$ 43

As of December 31, 2021, total unrecognized stock-based compensation expense related to unvested stock-based awards was $5.6 million, which is expected to be recognized over a weighted average period of 3.4 years.

11. INCOME TAXES

The domestic and foreign components of pre-tax loss for the years ended December 31, 2021 and 2020 were as follows (in thousands):

	Year Ended December 31,	
	2021	2020
Domestic	$ (39,026)	$ (18,011)
Foreign	81	1
Total	$ (38,945)	$ (18,010)

The Company had no current or deferred federal and state income tax expense or benefit for the years ended December 31, 2021 and 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:

	Year Ended December 31,	
	2021	2020
Federal statutory income (benefit) tax rate	(21.0)%	(21.0)%
State income taxes, net of federal benefit	(3.7)	(4.9)
Change in valuation allowance	23.7	27.2
Permanent items	1.2	1.2
Tax credits	(0.2)	(2.5)
Effective income tax rate	— %	— %

The components of our deferred tax assets and liabilities on December 31, 2021 and 2020 consisted of (in thousands):

	Year Ended December 31,	
	2021	2020
Deferred tax assets:		
Net operating loss carryforwards	$ 15,555	$ 7,045
Research and development tax credit carryforwards	915	865
Stock based compensation	168	—
Accruals and other	666	303
	17,304	8,213
Valuation Allowance	(16,749)	(7,554)
Total deferred tax assets	555	659
Deferred tax liabilities:		
Fixed assets	(62)	(80)
Intangibles	(493)	(579)
Total deferred tax liabilities	(555)	(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, 2021 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 years ended December 31, 2021 and 2020, related primarily to the increases in net operating loss carryforwards, research and development tax credits generated and accruals.

The valuation allowance increased by $9.2 million and $4.9 million during the years ended December 31, 2021 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 years ended December 31, 2021 and 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, 2021 and 2020, the Company had U.S. federal net operating loss carryforwards of $62.1 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 $60.8 million will carryforward indefinitely but are subject to an 80% 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, 2021 and 2020, the Company had state net operating loss carryforwards of $38.5 million and $15.9 million, respectively. The state net operating loss carryforwards of $38.5 million will begin to expire in 2029.

The Company also had California research and development tax credit carryforwards of approximately $0.6 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 3-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 associated with uncertain tax positions as interest expense and related penalties in general and administrative expenses.

The following table shows the changes in the gross amount of unrecognized tax benefits as of December 31, 2021 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
Increase of unrecognized tax benefits taken in prior years		(36)
Increase of unrecognized tax benefits taken in current year		58
Balance as of December 31, 2021	$	338

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, 2021. 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 2021 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 and 2021 tax years will remain open for examination by the United Kingdom tax authority for one year from the filing deadline.

12. 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.

Codexis Trademark Litigation

In May 2020 Codexis, Inc. (Codexis) filed a complaint against the Company relating to its CODEX DNA name based on Codexis' 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 the Company 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 the Company's profits and punitive damages as permitted by California common law) as well as attorneys' fees and costs. The Company has been defending the case. If the Company cannot resolve the matter with Codexis, then a jury trial is scheduled to begin in May 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 the Company's prior name) and Synthetic Genomics, Inc. (the Company's former parent company, and together with Dr. Nelson and SGI-DNA, the Defendants) to enforce non-competition and non-solicitation provisions of an agreement.

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, and rescheduled to August 27, 2021, is now a bench trial that is scheduled to begin May 6, 2022.

It is not possible at this time to assess whether the outcome of these complaints will have a material adverse effect on the Company's consolidated results of operations, cash flows or financial position. Therefore, in accordance with ASC 450, the Company has not accrued any accrual for a contingent liability associated with these legal proceedings based on its belief

that a liability, while possible, is not probable nor estimable, and any range of potential contingent liability amounts cannot be reasonably estimated at this time.

Contingencies

As described in the above Note 8, the Company had a success fee contingent liability to a creditor that required a payment of $0.8 million. This contingent liability was recorded at its fair value of $0.5 million at December 31, 2020 and was paid in full in July 2021.

Leases

The Company's non-cancelable lease commitments are described in Note 7.

13. 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:):

	Year Ended December 31,	
	2021	2020
Numerator:		
Net loss	$ (38,958)	$ (18,010)
Net loss attributable to common stockholders	$ (38,958)	$ (18,010)
Denominator:		
Weighted average common stock outstanding - basic and diluted	18,222,495	5,001,538
Net loss per share attributable to common stockholders - basic and diluted	$ (2.14)	$ (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 shares of common stock 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 shares of common stock 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:

	Year Ended December 31,	
	2021	2020
Series Z convertible preferred stock (as converted to common stock)	—	2,500,000
Series A convertible preferred stock (as converted to common stock)	—	7,599,274
Series A-1 convertible preferred stock (as converted to common stock)	—	4,980,055
Warrants to purchase common stock	—	1,081,745
Warrants to purchase Series A-1 convertible preferred stock (as converted to common stock)	—	154,022
Stock options to purchase common stock	2,550,984	760,159
Total	2,550,984	17,075,255

14. 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 years ended December 31, 2021 and 2020.

15. ACQUISITION

On November 18, 2021, the Company entered into a Share Purchase Agreement, with the stockholders of EtonBio Inc., a California corporation ("Eton"), pursuant to which, the Company agreed to purchase all of the outstanding shares of capital stock of Eton. The total purchase price was approximately $13.6 million, which was funded with the Company's existing cash on hand. Eton is a San Diego-based biotech company specializing in synthetic biology products and services,

including DNA sequencing and oligo synthesis, for the global academic research, pharmaceutical, and biotechnology industries. Eton also markets DNA prep services and products such as antibodies, peptides, and metabolism assay kits. The Eton acquisition has been accounted for as a business combination in accordance with ASC 805.

The assets acquired and liabilities assumed in connection with the Eton acquisition were recorded at their fair values on the date of acquisition as follows (in thousands):

Cash	$	393
Accounts receivable		664
Inventory		305
Other current assets		79
Property and equipment, net		1,388
Other long-term assets		28
Goodwill		10,833
Intangible assets		530
Accounts payable, accrued employee expenses and other accrued liabilities		(389)
Deferred revenue, current portion		(252)
Total purchase consideration	$	13,579
Less: Acquired cash		(393)
Purchase of Eton, net of cash acquired		13,186

The excess of the purchase price over the fair values of the net identifiable tangible and intangible assets acquired has been assigned to goodwill. Goodwill represents the future benefits as a result of the acquisition that will enhance the services available to both new and existing customers and increase the Company's competitive position.

The following table sets forth the amounts allocated to the intangible assets identified and the estimated useful lives of those intangible assets as of the date of acquisition (in thousands):

		Fair value	Useful life (in years)
Trade name	$	80	3
Customer relationships		420	15
Non-competition agreements		30	3
Total intangible assets acquired	$	530	

The intangible assets acquired are expected to be amortized over their useful lives on a straight-line basis.

As part of the Eton acquisition, the Company incurred acquisition-related costs of $0.3 million which were recorded in general and administrative expenses in the consolidated statements of operations and comprehensive loss.

As of the date of the Eton acquisition, the Company's consolidated statements of operations and comprehensive loss includes the results of the acquired Eton business unit. For the year ended December 31, 2021, revenue of $0.5 million and net loss of $0.2 million have been included in the Company's consolidated statement of operations and comprehensive loss.

The unaudited supplemental pro forma financial results below for the years ended December 31, 2021 and 2020, combine the consolidated results of the Company and the Eton business unit, giving effect to the Eton acquisition as if it had been completed on January 1, 2020. This unaudited supplemental pro forma financial information is presented for informational purposes only and is not indicative of future operations or results had the acquisition been completed as of January 1, 2020, or any other date (in thousands).

	Year Ended December 31,	
	2021	2020
Pro forma revenue	$ 17,094	$ 12,104
Pro forma net loss	$ (38,228)	$ (17,616)

The unaudited pro forma financial information in the table above summarizes the combined results of our operations and the Eton business unit, on a pro forma basis, as though we had acquired the Eton business unit on January 1, 2020. The unaudited pro forma financial information for all periods presented also includes the effects of business combination accounting resulting from the acquisition, amortization expense from acquired intangibles assets, and reversal of the acquisition-related expenses in the period incurred and recognition of the acquisition-related expenses in the prior period.

16. COLLABORATION

In December 2021, the Company entered into a Research Collaboration and License Agreement (Pfizer Agreement) with Pfizer Inc. (Pfizer), pursuant to which we agreed to collaborate with Pfizer to further develop our novel enzymatic DNA synthesis technology for Pfizer's use in its research and development of mRNA-based vaccines and biotherapies. The financial terms of the deal include an upfront payment from Pfizer to the Company, along with success-based technical milestone payments that could be earned in the near term. The Company is also eligible to receive additional milestone payments based on the achievement of specified development, regulatory and commercialization goals associated with any products developed from the application of the Company's technology developed and licensed under the agreement.

The Company granted Pfizer a non-exclusive, worldwide license to use the Company's enzymatic DNA synthesis technology for purposes of researching, developing, manufacturing and commercializing pharmaceutical and biopharmaceutical products and a limited-time option to convert such license to exclusive for specific applications. If Pfizer exercises its option for these application(s) within the applicable period, then the license to Pfizer will become exclusive for products for such application(s); provided that Pfizer may later convert the particular application back to non-exclusive.

Under the Pfizer Agreement, Pfizer made an upfront payment to us of $8.0 million and if the Company meets certain technical milestones, the Company will be eligible to receive an additional $10.0 million in near-term milestone payments associated with the Research Plan.

In addition to the upfront payment and technical milestone payments, Pfizer has agreed to make milestone payments to the Company upon the products meeting certain clinical milestones, with each product (other than exclusive products) being eligible for milestone payments up to $20.0 million if it were to meet the applicable clinical milestones and the first exclusive product in each exclusive field being eligible for milestone payments up to $55.0 million if it were to meet the applicable clinical milestones. Pfizer has also agreed to pay the Company up to $60.0 million in sales milestones for products (other than exclusive products) if aggregate net sales of such products meet certain thresholds and up to $180.0 million in sales milestones for exclusive products if aggregate net sales of the exclusive products meet certain thresholds. Provided the Pfizer Agreement remains in place, Pfizer will also pay escalating royalties from a low to mid-fraction of one percent of net sales of all products. Pfizer's obligations to pay royalties with respect to a product within a country will expire after specific criteria including such product no longer being covered by patent rights licensed to Pfizer by the Company in such country. Royalty payments are subject to reduction after the introduction of a biosimilar product in such country by a third party.

The Company assessed the collaboration and license agreement in accordance with ASC 606, Revenue from Contracts with Customers, and concluded that Pfizer is a customer based on the agreement structure. The Company identified a single combined performance obligation under the arrangement which includes performance under the research plan, technology transfer between the parties, participation in the Joint Research Committee, research licenses exchanged by the parties and the non-exclusive commercial license. In addition, the Company identified a material right for the option granted to Pfizer to extend the research term by an additional year. The $8.0 million upfront payment represents the transaction price at inception.

The Company determined that the $8.0 million upfront payment represents the entirety of the consideration to be included in the transaction price as of the outset of the arrangement. The potential milestone payments that the Company may have been eligible to receive were initially excluded from the transaction price at the outset of the arrangement because (i) all technical and development milestone payments did not meet the criteria for inclusion using the most-likely amount method and (ii) the Company recognizes as revenue sales-based milestones and royalties when the related sales occur. As of December 31, 2021 no milestones or royalties have been deemed likely to be achieved or have been achieved.

In accordance with ASC 606, the Company allocated the transaction price, comprising the upfront payment of $8.0 million, based on the standalone selling price of the combined performance obligation and the material right. Based on

Management's analysis, the material right was allocated $0.3 million of the transaction price, while the combined performance obligation was allocated $7.7 million of the transaction price.

The $7.7 million of revenue allocated to the combined performance obligation will be recognized using the input method based on time elapsed as compared to the research term of 24 months, and the $0.3 million of revenue allocated to the material right will be recognized over the third year of services performed under the research plan in the event the option to extend the research plan is exercised, or when the option expires in the event the option to extend the research plan is not exercised. During the year ended December 31, 2021, the Company recognized $0.2 million of collaboration revenue.

17. RELATED PARTY TRANSACTIONS

During the years ended December 31, 2021 and 2020, the Company made payments to related parties of approximately $0.3 million and $0.2 million, respectively for payments to board members and services relating to intellectual property matters, including patent filings and patent prosecution.

18. SUBSEQUENT EVENTS

The Company has evaluated subsequent events through March 23, 2022, the date these consolidated financial statements were issued and concluded there are no events to disclose.

Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosures.
None.

Item 9A. Controls and Procedures.
To come

Item 9B. Other Information
None.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections.
None.

Part III

Item 10. Directors, Executive Officers and Corporate Governance

We have adopted a written code of business conduct and ethics that applies 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 http://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 Annual Report.

The remaining information required under this item is incorporated herein by reference to our definitive proxy statement (Proxy Statement) pursuant to Regulation 14A under the Securities Exchange Act of 1934, as amended, which Proxy Statement is expected to be filed with Securities and Exchange Commission not later than 120 days after the close of our fiscal year ended December 31, 2021.

Item 11. Executive Compensation

The information required by this item will be set forth in the Proxy Statement and is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owner and Management and Related Stockholder Matters

The information required by this item will be set forth in the Proxy Statement and is incorporated herein by reference.

Item 13. Certain Relationships and Related Party Transactions, and Director Independence

The information required by this item will be set forth in the Proxy Statement and is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services

The information required by this item will be set forth in the Proxy Statement and is incorporated herein by reference.

Part IV

Item 15. Exhibits, Financial Statement Schedules

The following documents are filed as part of this Annual Report:

1.Financial Statements: The financial statements filed as part of this Annual Report are included in Part II, Item 8 of this Annual Report.

2.Financial Statement Schedules: Financial statement schedules have been omitted in this Annual Report because they are not applicable, not required under the instructions or the information requested is set forth in the financial statements or related notes thereto.

3.Exhibits: The list of exhibits filed with this Annual Report is set forth in the Exhibit Index preceding the signature page and is incorporated herein by reference or filed with this Annual Report, in each case as indicated therein (numbered in accordance with Item 601 of Regulation S-K).

Exhibit Number	Description	Form	File No.	Exhibit	Filing Date
2.1	Share Purchase Agreement among Codex DNA, Inc. and the stockholders of Eton Bioscience Inc. dated November 9, 2021	8-K	001-40497	2.1	11/9/21
3.1	Amended and Restated Certificate of Incorporation of the Registrant.	S-1	333-256644	3.2	5/28/21
3.2	Amended and Restated Bylaws of the Registrant.	S-1	333-256644	3.4	5/28/21
4.1	Amended and Restated Investors' Rights Agreement by and among the Registrant and certain of its stockholders, dated December 19, 2019.	S-1	333-256644	4.1	5/28/21
4.2	Specimen common stock certificate of the Registrant.	S-1/A	333-256644	4.2	6/14/21
4.3	Warrant to Purchase Stock issued to Silicon Valley Bank, dated as of March 4, 2021.	S-1	333-256644	4.3	5/28/21
4.4	Description of the Registrant's securities registered pursuant to section 12 of the securities exchange act of 1934.				
10.1+	Form of Indemnification Agreement between the Registrant and each of its directors and executive officers.	S-1	333-256644	10.1	5/28/21
10.2+	2019 Stock Plan, as amended, and forms of agreement thereunder.	S-1	333-256644	10.2	5/28/21
10.3+	2021 Equity Incentive Plan, as amended, and forms of agreement thereunder.	S-1	333-256644	10.3+	5/28/21
10.4+	2021 Stock Incentive Plan and forms of agreements thereunder.	S-1/A	333-256644	10.4+	6/14/21
10.5+	2021 Employee Stock Purchase Plan and forms of agreements thereunder.	S-1	333-256644	10.5+	5/28/21

10.6+	Confirmatory Employment Letter between the Registrant and Todd Nelson dated May 19, 2021.	S-1	333-256644	10.6+	5/28/21
10.7+	Confirmatory Employment Letter between the Registrant and Jennifer McNealey dated May 19, 2021.	S-1	333-256644	10.7+	5/28/21
10.8+	Confirmatory Employment Letter between the Registrant and Daniel Gibson dated May 19, 2021.	S-1	333-256644	10.8+	5/28/21
10.9+	Confirmatory Employment Letter between the Registrant and Timothy Cloutier dated May 19, 2021.	S-1	333-256644	10.9+	5/28/21
10.10+	Confirmatory Employment Letter between the Registrant and Brent Hunter dated May 19, 2021.	S-1	333-256644	10.10+	5/28/21
10.11+	Executive Incentive Compensation Plan.	S-1	333-256644	10.11+	5/28/21
10.12+	Form of Change in Control Severance Agreement.	S-1	333-256644	10.12+	5/28/21
10.13+	Outside Director Compensation Policy.	S-1	333-256644	10.13+	5/28/21
10.14	Office Lease, dated April 4, 2019, between the Registrant and BMR-Waples LP, as amended.	S-1	333-256644	10.14+	5/28/21
10.15#	Supply Agreement, dated October 26, 2015, between the Registrant and Integrated DNA Technologies, Inc., as amended.	S-1	333-256644	10.15+	5/28/21
10.16#	Loan and Security Agreement, dated March 4, 2021, between the Registrant and Silicon Valley Bank.	S-1	333-256644	10.16+	5/28/21
10.17#	Confidential Settlement Agreement between the Registrant and New England Biolabs, Inc. dated September 20, 2017.	S-1/A	333-256644	10.17#	6/14/21
10.18	Lease by and between the Registrant and BRE-BMR Waterbridge Pointe LP dated September 29, 2021	10-Q	001-40497	10.1	11/10/21
10.19	Separation and General Release Agreement	10-Q	001-40497	10.2	11/10/21
10.20	Second Amendment to Loan and Security Agreement by and between Registrant and Silicon Valley Bank, dated November 8, 2021	8-K	001-40497	10.1#	11/08/21
10.21#	Research Collaboration and License Agreement by and between Registrant and Pfizer Inc. dated December 20, 2021				
16.1	Letter of OUM & CO. LLP, dated July 20, 2021	8-K	001-40497	16.1	7/20/21

21.1	Subsidiaries of the Registrant	S-1	333-256644	21.1	5/28/21
23.1	Consents of Independent Registered Public Accounting Firms.				
31.1†	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				
31.2†	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				
32.1†	Certification of Principal Executive Officer and Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				
101.INS	XBRL Instance Document				
101.SCH	XBRL Taxonomy Extension Schema Document				
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document				
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document				
101.LAB	XBRL Taxonomy Extension Label Linkbase Document				
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document				
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)				

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\+ Indicates management contract or compensatory plan.

\# Portions of the exhibit have been omitted as the Registrant has determined that (i) the omitted information is not material; and (ii) the Registrant customarily and actually treats the omitted information as private or confidential.

† The certifications attached as Exhibit 31.1, 31.2 and 32.1 that accompany this Annual Report, are deemed furnished and not filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of the Registrant under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Annual Report, irrespective of any general incorporation language contained in such filing.

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the Registrant has duly caused this Report to be signed on its behalf by the undersigned, thereunto duly authorized.

Date: March 23, 2022

CODEX DNA, INC.

By: /s/ Todd R. Nelson
Todd R. Nelson
President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this Report has been signed below by the following persons on behalf of the Registrant in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Todd R. Nelson Todd R. Nelson	President, Chief Executive Officer and Director *(Principal Executive Officer)*	March 23, 2022
/s/ Jennifer I. McNealey Jennifer I. McNealey	Chief Financial Officer *(Principal Financial Officer)*	March 23, 2022
/s/ Brent M. Hunter Brent M. Hunter	Senior Director, Corporate Controller *(Principal Accounting Officer)*	March 23, 2022
/s/ Andrea L. Jackson Andrea L. Jackson	Director	March 23, 2022
/s/ Jami D. Nachtsheim Jami D. Nachtsheim	Director	March 23, 2022
/s/ William F. Snider William F. Snider	Director	March 23, 2022
/s/ Christine A. Tsingos Christine A. Tsingos	Director	March 23, 2022
/s/ Frank R. Witney Frank R. Witney	Chair of the Board of Directors	March 23, 2022

DESCRIPTION OF THE REGISTRANT'S SECURITIES
REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES
EXCHANGE ACT OF 1934

Codex DNA, Inc. (the Company) has one class of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended (the Exchange Act): our common stock, par value $0.0001 per share.

As used in this summary, the terms "the Company," "we," "our" and "us" refer to Codex DNA, Inc. The following is a description of the material terms and provisions relating to our capital stock. The following description is a summary that is not complete and is subject to and qualified in its entirety by reference to our amended and restated certificate of incorporation and our amended and restated bylaws, and to provisions of the Delaware General Corporation Law. Copies of our amended and restated certificate of incorporation and our amended and restated bylaws, each of which may be amended from time to time, are included as exhibits to the Annual Report on Form 10-K to which this description is an Exhibit.

DESCRIPTION OF CAPITAL STOCK

Our authorized capital stock consists 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.

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 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 be fully paid and nonassessable.

Preferred Stock
Our board of directors has 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. No shares of preferred stock are outstanding, and we have no present plan to issue any shares of preferred stock.

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 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 contains 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 provides 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 provides 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 authorizes only our board of directors to fill vacant directorships.

No Cumulative Voting
Our amended and restated certificate of incorporation provides 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 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 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 do 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 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 provides 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 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 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
Our common stock is listed 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.

Exhibit 10.21

RESEARCH COLLABORATION AND LICENSE AGREEMENT

by and between

PFIZER INC.

and

CODEX DNA, INC.

DECEMBER 20, 2021

Certain identified information marked with [***] has been excluded from this exhibit because it is not material and is of the type that the registrant treats as private and confidential.

Exhibit 10.21

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EXHIBITS

SCHEDULES

Exhibit 10.21

RESEARCH COLLABORATION AND LICENSE AGREEMENT

This Research Collaboration and License Agreement (the "Agreement") is entered into as of December 20, 2021 (the "Effective Date"), by and between PFIZER INC., a corporation organized and existing under the laws of Delaware and having a principal place of business at 235 East 42nd Street, New York, NY 10017 ("Pfizer") and CODEX DNA, Inc., a corporation organized and existing under the laws of Delaware and having a principal place of business at 9535 Waples St, Suite 10, San Diego, CA 92121 ("Codex"). Pfizer and Codex may each be referred to herein individually as a "Party" and collectively as the "Parties."

WHEREAS, Codex owns or otherwise controls certain patents, patent applications, technology, know-how, scientific and technical information and other proprietary rights and information relating to Instruments and Methods (each as defined below);

WHEREAS, Pfizer has extensive experience and expertise in the development, manufacturing and commercialization of biopharmaceutical products, including mRNA vaccine products;

WHEREAS, [***] ("Initial Instruments"), along with any instructions, methods, processes, workflows and other techniques or protocols for use of the Initial Instrument(s) that were provided to Pfizer to use such Initial Instruments ("Initial Methods");

WHEREAS, the Parties wish to collaborate to develop the Deliverables (as defined below) to synthesize DNA and RNA to meet the requirements described in the Research Plan (defined below);

WHEREAS, subject to the terms of this Agreement, Codex wishes to grant to Pfizer, and Pfizer wishes to receive from Codex, a non-exclusive license in the Field (as defined below), with the exclusive option to an exclusive license in each Exclusive Field (as defined below) in the Territory (as defined below) under certain of Codex's patents, patent applications, technology, know-how, scientific and technical information and other proprietary rights and information relating to the Deliverables to use, research, develop, manufacture, commercialize and otherwise exploit Products for the Field, including in each Exclusive Field, in each case in the Territory;

NOW THEREFORE, in consideration of the mutual promises and covenants set forth below and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties hereby agree as follows:

1. DEFINITIONS AND INTERPRETATION.

1.1. Defined Terms. Capitalized terms used and not otherwise defined in this Agreement shall have the following meanings:

1.1.1. "Acquiring Entity" means (a) a Third Party that merges or consolidates with or acquires a Party, or to which a Party transfers all or substantially all of its assets to

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which this Agreement pertains in a Change of Control transaction and (b) any Affiliate of such Third Party prior to the transaction described in clause (a) that is not also an Affiliate of the relevant Party prior to the transaction described in clause (a).

1.1.2. "Affiliate" means any entity directly or indirectly controlled by, controlling, or under common control with, a Person, but only for so long as such control will continue. For purposes of this definition, "control" (including, with correlative meanings, "controlled by", "controlling" and "under common control with") means (a) possession, direct or indirect, of the power to direct or cause direction of the management or policies of an entity (whether through ownership of securities or other ownership interests, by contract or otherwise), or (b) beneficial ownership of more than 50% (or the maximum ownership interest permitted by applicable Law) of the voting securities or other ownership or general partnership interest (whether directly or pursuant to any option, warrant or other similar arrangement) or other comparable equity interests of an entity; provided, however, that where an entity owns a majority of the voting power necessary to elect a majority of the board of directors or other governing board of another entity, but is restricted from electing such majority by contract or otherwise, such entity will not be considered to be in control of such other entity until such time as such restrictions are no longer in effect.

1.1.3. "Bankruptcy Code" means Title 11 of the United States Code, as amended.

1.1.4. "Binding Obligation" means, with respect to a Party (a) any oral or written agreement or arrangement that binds such Party, including any assignment, license agreement, loan agreement, guaranty, or financing agreement, (b) the provisions of such Party's charter, bylaws or other organizational documents or (c) any order, writ, injunction, decree or judgment of any court or Governmental Authority entered against such Party or by which any of such Party's operations or property are bound.

1.1.5. "Biosimilar Version" means, with respect to a Product that is being sold in a country or regulatory jurisdiction in the Territory (the "Reference Product"), a biopharmaceutical product sold by a Third Party (other than a Third Party acting on behalf of or in concert with Pfizer or any Affiliate or Sublicensee of Pfizer) in such country or regulatory jurisdiction in the Territory that through reference to the Regulatory Approval of the Reference Product, is eligible for and has achieved Regulatory Approval in such country or regulatory jurisdiction pursuant to an abbreviated follow-on biological approval pathway established by the Regulatory Authority in such country or regulatory jurisdiction pursuant to the applicable Law, or otherwise is approved for marketing and sale in such country or regulatory jurisdiction by an abridged procedure in reliance, in whole or in part, on the prior Regulatory Approval of the Reference Product or on the safety and efficacy data generated for the prior Regulatory Approval (in such country or regulatory jurisdiction) of the Reference Product, including any such biopharmaceutical product that (i) with respect to such biopharmaceutical product in the United States, has been approved

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as a biosimilar or interchangeable product by the FDA pursuant to 42 U.S.C. § 262 of the Public Health Service Act, (ii) with respect to such biopharmaceutical product subject to the regulatory jurisdiction of the EMA, has been approved as a similar biological medicine product by EMA as described in CHMP/437/04, issued 30 October 2005, as may be amended, or any subsequent or superseding law, statute or regulation or (iii) with respect to such biopharmaceutical product outside the United States and in a country which is not subject to the regulatory jurisdiction of the EMA, has otherwise obtained Regulatory Approval from a Regulatory Authority pursuant to similar statutory or regulatory requirement as that described in the foregoing subsections (i) and (ii) in such other country or regulatory jurisdiction in the Territory.

1.1.6. "Business Day" means a day other than a Saturday, Sunday or bank or other public holiday in New York, New York.

1.1.7. "Calendar Quarter" means the respective periods of three consecutive calendar months ending on March 31, June 30, September 30 and December 31.

1.1.8. "Calendar Year" means any twelve (12) month period beginning on January 1 and ending on the next subsequent December 31.

1.1.9. "Change of Control" means, with respect to a Party (a) the acquisition of beneficial ownership, directly or indirectly, by any Person (other than such Party or an Affiliate of such Party, and other than by virtue of obtaining irrevocable proxies) of securities or other voting interest of such Party representing a majority or more of the combined voting power of such Party's then outstanding securities or other voting interests, (b) any merger, reorganization, consolidation or business combination involving such Party with a Third Party that results in the holders of beneficial ownership (other than by virtue of obtaining irrevocable proxies) of the voting securities or other voting interests of such Party (or, if applicable, the ultimate parent of such Party) immediately prior to such merger, reorganization, consolidation or business combination ceasing to hold beneficial ownership of at least [***] of the combined voting power of the surviving entity immediately after such merger, reorganization, consolidation or business combination, (c) any sale, lease, exchange, contribution or other transfer (in one transaction or a series of related transactions) of all or substantially all of the assets of such Party to which this Agreement relates, other than a sale or disposition of such assets to an Affiliate of such Party or (d) the approval of any plan or proposal for the liquidation or dissolution of such Party (other than in circumstances where such Party is deemed a Debtor pursuant to Section 9.5).

1.1.10. "Clinical Trial" means a human clinical study conducted on sufficient numbers of human subjects that is designed to (a) establish that a pharmaceutical product is reasonably safe for continued testing, (b) investigate the safety and efficacy of the pharmaceutical product for its intended use, and to define warnings, precautions and adverse reactions that may be associated with the pharmaceutical product in the dosage

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range to be prescribed or (c) support Regulatory Approval of such pharmaceutical product or label expansion of such pharmaceutical product.

1.1.11. "Codex Know-How" means any (a) Codex Sole Research Plan Know-How and Codex's interest in any Joint Research Plan Know-How and (b) other Know-How that is (i) Controlled by Codex or any of its Affiliates as of the Effective Date or that comes into the Control of Codex or any of its Affiliates during the Term (other than through the grant of a license by Pfizer) and (ii) reasonably necessary for Pfizer to implement the Deliverables, reasonably necessary for Pfizer to practice the licenses or exercise other rights granted to Pfizer under this Agreement, or reasonably necessary for Pfizer to conduct activities under the Research Plan or (c) other Know-How that is otherwise provided by or on behalf of Codex to Pfizer hereunder.

1.1.12. "Codex Patent Right" means any (a) Codex Sole Research Plan Patent Right and Codex's interest in any Joint Research Plan Patent Rights and (b) any other Patent Right that (i) is Controlled by Codex or any of its Affiliates as of the Effective Date (including the Codex Patent Rights listed in Exhibit A) or (ii) that comes into the Control of Codex or any of its Affiliates during the Term (other than through the grant of a license by Pfizer) and, in each case ((i) and (ii)), claims or discloses any invention included in any Codex Know-How.

1.1.13. "Codex Sole Research Plan Know-How" means any Research Plan Know-How that is invented solely by or on behalf of Codex or its Affiliates in the course of performing activities under the Research Plan; provided that Codex Sole Research Plan Know-How excludes the Output Materials Know-How and Pfizer Material Improvements.

1.1.14. "Codex Sole Research Plan Patent Right" means any Patent Right that claims or discloses any invention included in any Codex Sole Research Plan Know-How.

1.1.15. "Codex Technology" means any Codex Know-How and Codex Patent Rights.

1.1.16. "Codex Third Party Agreement" means any agreement between Codex (or any of its Affiliates) and any Third Party (such Third Party, a "Third Party Licensor") pursuant to which Codex or any of its Affiliates obtains Control of any of the Codex Technology.

1.1.17. "Commercialize" or "Commercializing" means, with respect to a compound or product, to (a) market, promote, distribute, offer for sale, sell, have sold, import, have imported, export, have exported or otherwise commercialize such a compound or product and (b) conduct discovery, pre-clinical, research, or other Development activities with respect to a compound or product after such compound or product has received Regulatory Approval. When used as a noun, "Commercialization" means any and all activities involved in Commercializing.

Certain identified information marked with [***] has been excluded from this exhibit because it is not material and is of the type that the registrant treats as private and confidential.

1.1.18. "Commercially Reasonable Efforts" means, with respect to the efforts to be expended by a Party with respect to any objective, those reasonable, good faith efforts to accomplish such objective as such Party would normally use to accomplish a similar objective under similar circumstances.

1.1.19. "Confidential Information" means, with respect to each Party, all Know-How or other information, including proprietary information and materials (whether or not patentable) regarding or embodying such Party's or its Representatives' technology, products, business information or objectives, that is communicated by or on behalf of the Disclosing Party to the Receiving Party or its permitted recipients, but only to the extent that such Know-How or other information in written form is marked in writing as "confidential" at the time of disclosure, and such Know-How or other information disclosed orally or in non-tangible form is (a) identified by the Disclosing Party as "confidential" at the time of disclosure and (b) within [***] days thereafter, the Disclosing Party provides a written summary of such Know-How or other information marked as "confidential". Failure to mark or identify or summarize Confidential Information disclosed hereunder as "confidential" shall not cause the information to be considered non-confidential if such information should have been known by a reasonable person with expertise on the subject matter, based on the nature of the information and the circumstances of its disclosure, to be Confidential Information, provided that the Disclosing Party has otherwise made good faith efforts to clearly so mark or identify Confidential Information as such. Confidential Information does not include any Know-How or other information that (i) was already known by the Receiving Party (other than under an obligation of confidentiality to the Disclosing Party) at the time of disclosure by or on behalf of the Disclosing Party, (ii) was generally available to the public or otherwise part of the public domain at the time of its disclosure to the Receiving Party, (iii) became generally available to the public or otherwise part of the public domain after its disclosure to the Receiving Party, other than through any act or omission of the Receiving Party in breach of its obligations under this Agreement, (iv) was disclosed to the Receiving Party, other than under an obligation of confidentiality, by a Third Party who had no direct or indirect obligation to the Disclosing Party not to disclose such information to the Receiving Party or (v) was independently discovered or developed by or on behalf of the Receiving Party without the use of or reference to any Confidential Information belonging to the Disclosing Party. The terms and conditions of this Agreement shall be considered Confidential Information of both Parties.

1.1.20. "Control" or "Controlled" means with respect to any intellectual property right or material (including any Patent Right, Know-How or other data, information or material), the ability (whether by sole, joint or other ownership interest, license or otherwise, other than pursuant to this Agreement) to, without violating the terms of any agreement with a Third Party, grant a license or sublicense or provide access or other right in, to or under such intellectual property right or material. If either Party undergoes a Change of Control during the Term, any Know-How or Patent Rights of the Acquiring Entity shall not be deemed to be Controlled by such Party unless: (i) prior to the

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consummation of such Change of Control, such Party or any of its Affiliates also Controlled such Know-How or Patent Rights of the Acquiring Entity, (ii) any such Know-How or Patent Rights of the Acquiring Entity arises from participation by representatives of such Acquiring Entity in any activities under this Agreement after such Change of Control or (iii) such Know-How or Patent Rights of the Acquiring Entity were not used in the performance of activities under this Agreement prior to the consummation of such Change of Control, but after the consummation of such Change of Control, such Party or any of its Affiliates uses any such Know-How or Patent Rights in the performance of its obligations or exercise of its rights under this Agreement.

1.1.21. "Core Codex DNA Technology" means Codex's proprietary systems, platforms and technologies, including its Instruments and proprietary Methods, together with related workflows and kits/reagents, in each case as proprietary to Codex and reasonably necessary to operate an Instrument or perform any Method, as applicable, and, in each case, (a) including any intellectual property rights (including Patent Rights) therein owned or Controlled by Codex, and (b) excluding any Research Plan Technology.

1.1.22. "Cover" means, with respect to the Instrument, a Product or a Deliverable and given Patent Right, that a Valid Claim of such Patent Right would, absent a license thereunder or ownership thereof, be infringed by the use or other Exploitation of such Instrument, Product or Deliverable.

1.1.23. [***]

1.1.24. "Current Licenses" means any agreement (a) that Codex or its Affiliates has entered into prior to the Effective Date and (b) pursuant to which Codex or its Affiliates are (i) granted rights to any Codex Technology as of the Effective Date or (ii) granted a license or otherwise transferred any right to practice under any Patent Rights or Know-How, in each case that are reasonably necessary to use the Deliverables or perform activities under this Agreement.

1.1.25. "Current Licensor" means any Third Party that is a party to a Current License.

1.1.26. "Deliverables" means any tangible Instrument, Method or other Know-How first made or developed by one or both Parties in the conduct of the Research Plan that are provided to Pfizer hereunder including in accordance with Section 2.11.

1.1.27. "Develop" or "Developing" means to discover, research or otherwise develop a process, compound or product, including conducting non-clinical and clinical research and development activities prior to Regulatory Approval. When used as a noun, "Development" means any and all activities involved in Developing.

1.1.28. "Development Milestone Payment" means any amounts payable by Pfizer upon achievement of any Development Milestones in accordance with Section 3.3.

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1.1.29. "DNA" means deoxyribonucleic acid.

1.1.30. "Exclusive Fields" means (a) the [***] or (b) [***], in each case (a) and (b), if Pfizer has exercised the Option for such under Section 2.4, in each case (a) and (b) unless and until such Field has converted to a Non-Exclusive Field pursuant to this Agreement (for example, under Sections 5.2 or 9.4.1). Each of the [***] and the [***] is an Exclusive Field once Pfizer has exercised the Option for such Field under Section 2.4.

1.1.31. "Exploit" means to Develop, Manufacture, Commercialize, use or otherwise exploit. Cognates of the word "Exploit" will have correlative meanings.

1.1.32. "FD&C Act" means the United States Federal Food, Drug, and Cosmetic Act, as amended, and the rules and regulations promulgated thereunder.

1.1.33. "FDA" means the United States Food and Drug Administration or any successor agency thereto.

1.1.34. "Field" means [***].

1.1.35. "First Commercial Sale" means, with respect to any Product and with respect to any country in the Territory, the first sale of such Product (as applicable) by Pfizer or an Affiliate or Sublicensee of Pfizer to a Third Party in such country after such Product has been granted Regulatory Approval by the appropriate Regulatory Authority in such country.

1.1.36. [***]

1.1.37. "GAAP" means United States generally accepted accounting principles, consistently applied.

1.1.38. "Government Official", to be broadly interpreted, means (a) any elected or appointed government official (e.g., a member of a ministry of health), (b) any employee or person acting for or on behalf of a government official, Governmental Authority, or other enterprise performing a governmental function, (c) any political party, candidate for public office, officer, employee, or person acting for or on behalf of a political party or candidate for public office, and (d) any employee or person acting for or on behalf of a public international organization (e.g., the United Nations). For clarity, healthcare providers employed by government-owned hospitals will be considered Government Officials.

1.1.39. "Governmental Authority" means any court, agency, department, authority or other instrumentality of any national, state, county, city or other political subdivision.

Certain identified information marked with [***] has been excluded from this exhibit because it is not material and is of the type that the registrant treats as private and confidential.

1.1.40. "IND" means an Investigational New Drug Application submitted under the FD&C Act, or an analogous application or submission with any analogous agency or Regulatory Authority outside of the United States for the purposes of obtaining permission to conduct Clinical Trials.

1.1.41. "Indication" means the intended use of a Product for either therapeutic treatment or for the prevention of a distinct illness, sickness, interruption, cessation or disorder of a particular bodily function, system, tissue type or organ, or sign or symptom of any such items or conditions, regardless of the severity, frequency or route of any treatment, treatment regimen, dosage strength or patient class, for which Regulatory Approval is being or would be sought and which will be referenced on any Product labeling in any country. Label extensions shall not be deemed to be separate Indications. By way of example, each of the following would be considered a separate Indication: breast cancer, prostate cancer, colon cancer, gastric cancer, lung cancer, etc, but moving from one line of therapy to another would not be considered a new Indication. For clarity, a single Indication would include the primary disease and all variants or sub-divisions or sub-classifications within such primary disease, and regardless of prophylactic or therapeutic use, pediatric or adult use. For further clarity, any variant or sub-division or sub-classification within a primary disease shall constitute an Indication, but shall not be a distinct Indication from any other variant or sub-division or sub-classification within such primary disease.

1.1.42. "Instrument" means Codex's proprietary fully automated, benchtop gene synthesis workstations existing during the Research Term that synthesize de novo gene constructs from digitally submitted sequences.

1.1.43. "Instrument/Methods Know-How" means any Research Plan Know-How that is invented, developed, or discovered, by either Party alone, or jointly with the other, whether or not patentable, predominantly directed to (a) any Instrument, (b) kit or reagent for operation of an Instrument, or (c) Methods, but not any Pfizer Material Improvement or Output Materials.

1.1.44. "Instrument/Methods Patent Rights" means any Research Plan Patent Right that claims or discloses any Instrument/Methods Know-How, but not any other Research Plan Know-How, Output Materials or Pfizer Material Improvement.

1.1.45. "Joint Research Committee" or "JRC" means the joint research committee described in Section 4.4.2(a).

1.1.46. "Joint Research Plan Know-How" means Research Plan Know-How other than Output Materials Know-How and Pfizer Material Improvements that is jointly invented, developed, discovered, or other Know-How, whether or not patentable, discovered, made or created jointly by (i) Codex or its Representatives and (ii) Pfizer or its Representatives under this Agreement.

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1.1.47. "Joint Research Plan Patent Right" means a Patent Right that claims or discloses any Joint Research Plan Know-How (and does not claim or disclose any invention included in any Pfizer Sole Research Plan Know-How or Codex Sole Research Plan Know-How).

1.1.48. "Joint Research Plan Technology" means the Joint Research Plan Know-How and the Joint Research Plan Patent Rights.

1.1.49. "Know-How" means any proprietary invention, discovery, development, data, information, process, method, technique, material (including any chemical or biological material), technology, result, cell line, compounds, probe, sequence or other know-how, whether or not patentable, and any physical embodiments of any of the foregoing.

1.1.50. "Law" means any law, statute, rule, regulation, order, judgment or ordinance of any Governmental Authority.

1.1.51. "Major EU Market Country" means any of [***].

1.1.52. "Major Market Country" means any [***].

1.1.53. "Manufacture" or "Manufacturing" means to make, produce, manufacture, process, fill, finish, package, label, perform quality assurance testing, release, ship or store, and for the purposes of further Manufacturing, distribute, import or export, a compound or product or any component thereof. When used as a noun, "Manufacture" or "Manufacturing" means any and all activities involved in Manufacturing a compound, protein, device or product or any component thereof.

1.1.54. "Methods" means any instructions, methods, processes, workflows and other techniques or protocols necessary or useful for use of the Instrument.

1.1.55. "Milestone Payments" shall mean the Technical Milestone Payments, the Development Milestone Payments and the Sales Milestone Payments.

1.1.56. "Milestones" means the Technical Milestones, the Development Milestones and the Sales Milestones.

1.1.57. "Net Sales" means: (a) with respect to a Product, the gross receipts from sales by Pfizer and its Affiliates and Sublicensees of such Product to Third Parties in the Territory, less in each case (i) bad debts and (ii) sales returns and allowances actually paid, granted or accrued, including trade, quantity and cash discounts and any other adjustments, including those granted on account of price adjustments, billing errors, rejected goods, damaged or defective goods, recalls, returns, rebates, chargeback rebates, reimbursements or similar payments granted or given to wholesalers or other distributors, buying groups, health care insurance carriers, chain pharmacies, mass merchandisers, staff model HMO's,

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pharmacy benefit managers or other institutions, adjustments arising from consumer discount programs or other similar programs, customs or excise duties, sales tax, consumption tax, value added tax, and other taxes (except income taxes and all to the extent paid by Pfizer and non-refundable in accordance with applicable Law) or duties relating to sales, compulsory or negotiated payments and cash rebates in respect of sales to the United States government, any state government or any foreign government, or to any other Governmental Authority, or with respect to any government-subsidized program or managed care organization, and freight (including storage, shipping and handling) and insurance (to the extent that Pfizer, its Affiliates or its Sublicensees bear the cost of freight (including storage, shipping and handling) and insurance for such Product). For clarity, the transfer of Product by or among Pfizer, its Affiliates or Sublicensees is not considered a sale, provided (1) such transfer is intended for further sale, transfer, lease, exchange, or other disposition and Pfizer, its Affiliates or Sublicensees are not the end users or consumers, and (2) any amount received by Pfizer, its Affiliates or Sublicensees in connection with the transfer from such entity to end users shall also be deemed part of Net Sales of such Product. Net Sales will be determined from books and records maintained in accordance with GAAP, as consistently applied by Pfizer with respect to sales of the Product, as applicable.

1.1.58. "Non-Exclusive Field" means, individually and collectively, the Field outside of the Exclusive Fields, on an Indication-by-Indication basis.

1.1.59. "Option Exercise Date" means, with respect to each Option, the date on which Pfizer has delivered written notice of Pfizer's exercise of such Option to Codex pursuant to Section 2.4.

1.1.60. "Option Exercise Period" means the period of time beginning on the Effective Date and ending on the date that is [***].

1.1.61. "Output Materials" means any chemical or biological materials, including any mRNA or DNA that are produced or generated through or from, or are the result or by-product of, the operation of an Instrument by a Party in the conduct of and in accordance with the Research Plan.

1.1.62. "Output Materials Know-How" means any Research Plan Know-How that is invented, developed, or discovered, by either Party alone, or jointly with the other, whether or not patentable, directed to or embodied in any Output Materials and/or the use thereof.

1.1.63. "Output Materials Patent Rights" means a Patent Right that claims or discloses Output Materials Know-How, but not any other Research Plan Know-How.

1.1.64. "Patent Rights" means any and all (a) issued patents, (b) pending patent applications, including all provisional applications, substitutions, continuations, continuations-in-part, divisions and renewals, and all patents granted thereon, (c) patents-

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of-addition, reissues, reexaminations and extensions or restorations by existing or future extension or restoration mechanisms, including patent term adjustments, patent term extensions, supplementary protection certificates or the equivalent thereof, (d) inventor's certificates, (e) other forms of government-issued rights substantially similar to any of the foregoing and (f) United States and foreign counterparts of any of the foregoing.

1.1.65. "Person" means an individual, sole proprietorship, partnership, limited partnership, limited liability partnership, corporation, limited liability company, business trust, joint stock company, trust, incorporated association, joint venture or similar entity or organization, including a government or political subdivision or department or agency of a government.

1.1.66. "Pfizer Know-How" means any Know-How that is (a) Controlled by Pfizer or any of its Affiliates on the Effective Date or that comes into the Control of Pfizer or any of its Affiliates during the Term (other than through the grant of a license by Codex) and is (b) either reasonably necessary for Codex to conduct activities under the Research Plan or otherwise provided to Codex hereunder.

1.1.67. "Pfizer Patent Right" means any Patent Right that (a) is Controlled by Pfizer or any of its Affiliates as of the Effective Date or (b) that comes into the Control of Pfizer or any of its Affiliates during the Term (other than through the grant of a license by Codex) and, in each case ((a) and (b)), claims or discloses any invention included in any Pfizer Know-How.

1.1.68. "Pfizer Quarter" means each of the four (4) thirteen (13) week periods (a) with respect to the United States, commencing on January 1 of any Pfizer Year and (b) with respect to any country in the Territory other than the United States, commencing on December 1 of any Pfizer Year.

1.1.69. "Pfizer Sole Research Plan Know-How" means any (a) Research Plan Know-How that is invented solely by or on behalf of Pfizer or its Affiliates in the course of performing activities under the Research Plan, (b) any Pfizer Material Improvement and (c) any Output Materials Know-How.

1.1.70. "Pfizer Sole Research Plan Patent Right" means any Patent Right that claims or discloses any invention included in any Pfizer Sole Research Plan Know-How. All Pfizer Material Improvement and Output Material Patent Rights will be Pfizer Sole Research Plan Patent Rights.

1.1.71. "Pfizer Technology" means the Pfizer Know-How and Pfizer Patent Rights.

1.1.72. "Pfizer Year" means the twelve-month fiscal periods observed by Pfizer (a) commencing on January 1 with respect to the United States and (b) commencing on December 1 with respect to any country in the Territory other than the United States.

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1.1.73. "Phase I Clinical Trial" means a Clinical Trial (whether a Phase Ia or a Phase Ib trial) that generally provides for the first introduction into humans of a pharmaceutical product with the primary purpose of determining safety, metabolism and pharmacokinetic properties and clinical pharmacology of such product, including in a manner that is generally consistent with 21 CFR § 312.21(a), as amended (or its successor regulation), or an equivalent clinical study required by a Regulatory Authority outside of the United States; provided, however, a Phase I Clinical Trial does not include any study generally characterized by the FDA as an "exploratory IND study" in CDER's Guidance for Industry, Investigators, and Reviewers Exploratory IND Studies, January 2006, irrespective of whether or not such study is actually performed in the United States or under an IND. A so-called Phase I/II Clinical Trial shall be deemed to be a Phase I Clinical Trial.

1.1.74. "Price Approval" means, in any country where a Governmental Authority authorizes reimbursement for, or approves or determines pricing for, pharmaceutical products, receipt (or, if required to make such authorization, approval or determination effective, publication) of such reimbursement authorization or pricing approval or determination (as the case may be).

1.1.75. "Product" means a pharmaceutical or biopharmaceutical product in a formulation suitable for administration to humans, including mRNA encoding one or more polypeptides or fragments thereof, including naturally occurring or engineered variants thereof, for prophylaxis or treatment of a disease in humans, provided that such mRNA was (a) discovered, designed, encoded or created using the Deliverables by, or on behalf of, a Party or (b) was transcribed from DNA that was discovered, designed, encoded or created using the Deliverables by, or on behalf of, a Party. For the avoidance of doubt, Instruments, Deliverable(s), and Output Materials are not Products. For further clarity and by way of example, updates or changes to (y) the mRNA of a Product to account for changes to a Product's formulation, or (z) dosage volume will not constitute a different Product, so long as such "updated" Product is for the same Indication.

1.1.76. "Public Health Service Act" means the United States Public Health Service Act (42 U.S.C. 201 et seq), as amended from time to time (including any rules and regulations promulgated thereunder) or any subsequent or superseding law, statute or regulation.

1.1.77. "Regulatory Approval" means all technical, medical and scientific licenses, registrations, authorizations and approvals (including approvals of NDAs, supplements and amendments, pre- and post- approvals and labeling approvals) of any Regulatory Authority, necessary or useful for the use, Development, Manufacture, and Commercialization of a pharmaceutical or biopharmaceutical product in a regulatory jurisdiction, including commercially reasonable Price Approvals and commercially reasonable Third Party reimbursement approvals. For clarity, an emergency use authorization pursuant to Section 564 of the Federal Food, Drug and Cosmetic Act, 21

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U.S.C.A. 301, et. Seq. and the equivalent to such authorization outside the United States (an "Emergency Use Authorization") shall be deemed a "Regulatory Approval".

1.1.78. "Regulatory Authority" means, with respect to a country in the Territory, any national (e.g., the FDA), supra-national (e.g., the European Commission, the Council of the European Union, or the European Medicines Agency), regional, state or local regulatory agency, department, bureau, commission, council or other Governmental Authority with authority over the distribution, importation, exportation, manufacture, production, use, storage, transport, clinical testing or sale of a pharmaceutical product (including any Product) including, to the extent required in such country, Price Approval, for pharmaceutical products in such country.

1.1.79. "Representatives" means (a) with respect to Pfizer, its Affiliates, its Sublicensees and each of their respective officers, directors, employees, consultants, contractors and agents and (b) with respect to Codex, its Affiliates and each of their respective officers, directors, employees, consultants, contractors and agents.

1.1.80. "Research Plan" means the Research Plan attached hereto as Exhibit B, as may be amended from time to time pursuant to Section 4.4.2.

1.1.81. "Research Plan Know-How" means any and all Know-How, whether or not patentable, made solely by or on behalf of either Party or its Representatives in the conduct of activities under the Research Plan or made jointly by or on behalf of (i) Codex or its Representatives and (ii) Pfizer or its Representatives, in each case, in the conduct of activities under the Research Plan.

1.1.82. "Research Plan Patent Right" means any Patent Right that claims or discloses any invention included in any Research Plan Know-How.

1.1.83. "Research Plan Technology" means any and all Research Plan Know-How or Research Plan Patent Rights.

1.1.84. "Research Term" means the period of time beginning on the Effective Date and expiring on [***] thereof or such later date as may be established pursuant to Section 4.5, unless earlier terminated pursuant to the terms of this Agreement.

1.1.85. "Residual Knowledge" means knowledge, techniques, experience and Know-How that (a) are, or are based on any Confidential Information Controlled by the Disclosing Party and (b) are retained in the unaided memory of any authorized Representative of the Receiving Party after having access to such Confidential Information in accordance with this Agreement. An individual's memory will be considered to be unaided if the individual has not intentionally memorized the Confidential Information for the purpose of retaining and subsequently using or disclosing it.

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1.1.86. "RNA" means any form of ribonucleic acid, including messenger RNA (mRNA), self-amplifying RNA (saRNA) or modified RNA (modRNA).

1.1.87. "Royalty Term" means, with respect to any particular Product or Exclusive Product (as the case may be) in any particular country in the Territory, the period that commences on the First Commercial Sale of such Product or Exclusive Product in such country in the Territory and ends on the earliest to occur of [***].

1.1.88. "Sales Milestone Payment" means any amounts payable by Pfizer upon achievement of any Sales Milestones in accordance with Section 3.

1.1.89. "Sublicensee" means any Person to whom Pfizer grants or has granted, directly or indirectly, a license or sublicense with respect to a Product.

1.1.90. "Taxes" means all taxes, charges, fees, levies, or other assessments, including income, withholding, excise, value added, sales, payroll, transfer, and franchise taxes imposed by any Governmental Authority. Such term shall include any interest, penalties, or additions payable in connection with such taxes, charges, fees, levies, duties, or other assessments.

1.1.91. "Territory" means worldwide.

1.1.92. "Third Party" means any Person other than Pfizer, Codex or their respective Affiliates.

1.1.93. "Trademark" means any trademark, trade name, service mark, service name, brand, domain name, trade dress, logo, slogan or other indicia of origin or ownership, including the goodwill and activities associated with each of the foregoing.

1.1.94. "Valid Claim" means, with respect to a particular country, a claim of a Codex Patent Right that is (a) issued and unexpired and has not been (i) held permanently revoked, unenforceable or invalid by a decision of a court or other Governmental Authority of competent jurisdiction, which decision is unappealable or unappealed within the time allowed for appeal, or (ii) cancelled, withdrawn, abandoned, disclaimed or admitted to be invalid or unenforceable through reissue, disclaimer or otherwise, or (b) a bona fide claim in a pending patent application that has not been (i) cancelled, withdrawn or abandoned without being refiled in another application in the applicable jurisdiction or (ii) finally rejected by an administrative agency action, which action is unappealable or unappealed within the time allowed for appeal, [***]

The following terms are defined in the section of this Agreement listed opposite each term:

Defined Term	Section in Agreement
Agreement	Preamble
Codex	Preamble

Certain identified information marked with [***] has been excluded from this exhibit because it is not material and is of the type that the registrant treats as private and confidential.

Codex Indemnified Party	10.2
Codex JRC Members	4.4.2(a)
Codex Permitted Activities	4.9.2
Competing Product	8.4.2
Debtor	9.5.1
Development Milestones	3.3.2
Development Notice	5.6.1
Diligence Issue	5.2.2
Disclosing Party	7.1
Disputed Matter	4.4.2(e)
Effective Date	Preamble
Exclusive Development Milestones	3.3.2
Exclusive Marginal Royalty Rate	3.7.2
Exclusive Sales Milestones	3.4.2
Force Majeure	12.4
Global Trade Control Laws	12.10
Indemnified Party	10.4.1
Indemnifying Party	10.4.1
Infringement Claim	6.3.3
Initial Instruments	Preamble
Initial Methods	Preamble
JRC Co-Chair	4.4.2(b)
Liability	10.2
Licensed Activities	6.3.2(a)
Litigation Conditions	10.4.2
Pfizer Materials	4.9.1
Non-Exclusive Development Milestones	3.3.1
Non-Exclusive Marginal Royalty Rate	3.7.1
Non-Exclusive Sales Milestones	3.4.1
Non-Publishing Party	7.5.2
Notice of Dispute	12.12.1
Option	2.4.1
Party or Parties	Preamble
Per Exclusive Product Annual Net Sales	3.7.2
Per Non-Exclusive Product Annual Net Sales	3.7.1
Pfizer	Preamble
Pfizer Indemnified Party	10.3
Pfizer JRC Members	4.4.2(a)
Pfizer Material Improvements	4.9.6
Program Director and Program Directors	4.4.1(a)
Publishing Party	7.5.2
Receiving Party	7.1

Certain identified information marked with [***] has been excluded from this exhibit because it is not material and is of the type that the registrant treats as private and confidential.

Research Program	4.1
Restricted Market	12.10.1
Restricted Parties	12.10.2
Restricted Party Lists	12.10.2
Review Period	7.5.2
Sales Milestones	3.4.2
Technical Milestone	3.2
Technical Milestone Payment	3.2
Term	9.1
Third Party Claim	10.4.1
Total Annual Exclusive Net Sales	3.4.2
Total Annual Net Sales	3.4.1
VAT	3.9.1(a)

1.2. Interpretation. Except where the context expressly requires otherwise, (a) the use of any gender herein shall be deemed to encompass references to either or both genders, and the use of the singular shall be deemed to include the plural (and vice versa), (b) the words "include", "includes" and "including" shall be deemed to be followed by the phrase "without limitation", (c) the word "will" shall be construed to have the same meaning and effect as the word "shall", (d) any definition of or reference to any agreement, instrument or other document herein shall be construed as referring to such agreement, instrument or other document as from time to time amended, supplemented or otherwise modified (subject to any restrictions on such amendments, supplements or modifications set forth herein), (e) any reference herein to any Person shall be construed to include the Person's successors and assigns, (f) the words "herein", "hereof" and "hereunder", and words of similar import, shall be construed to refer to this Agreement in its entirety and not to any particular provision hereof, (g) all references herein to Sections, Exhibits or Schedules shall be construed to refer to Sections, Exhibits or Schedules of this Agreement, and references to this Agreement include all Exhibits and Schedules hereto, (h) the word "notice" means notice in writing (whether or not specifically stated) and shall include notices, consents, approvals and other written communications contemplated under this Agreement, (i) provisions that require that a Party, the Parties or any committee hereunder "agree," "consent" or "approve" or the like shall require that such agreement, consent or approval be specific and in writing, whether by written agreement, letter, approved minutes or otherwise (but excluding e-mail and instant messaging), (j) references to any specific law, rule or regulation, or article, section or other division thereof, shall be deemed to include the then-current amendments thereto or any replacement or successor law, rule or regulation thereof, and (k) the term "or" shall be interpreted in the inclusive sense commonly associated with the term "and/or."

2. LICENSE GRANTS AND TECHNOLOGY TRANSFER.

2.1. Reciprocal Non-Exclusive Research Program Licenses. During the Research Term, effective as of the Effective Date:

Certain identified information marked with [***] has been excluded from this exhibit because it is not material and is of the type that the registrant treats as private and confidential.

2.1.1. To Pfizer. Subject to the terms and conditions of this Agreement, including the Options in Section 2.4, Codex hereby grants to Pfizer a non-exclusive, royalty-free, fully paid-up license (and, to the extent any Codex Technology is Controlled by Codex pursuant to a Codex Third Party Agreement, a sublicense, as applicable), with no right to sublicense other than to Affiliates of Pfizer or Third Party subcontractors under the Codex Technology solely to the extent necessary to perform Pfizer's activities under the Research Plan.

2.1.2. To Codex. Subject to the terms and conditions of this Agreement, Pfizer hereby grants to Codex a non-exclusive, royalty-free, fully paid-up license in the Territory, with no right to grant sublicenses other than to Affiliates of Codex or Third Party subcontractors pursuant to Section 4.8, under the Pfizer Technology solely to the extent necessary to perform Codex's activities under the Research Plan.

2.2. Non-Exclusive Commercial License under Codex Technology from Codex to Pfizer. Effective as of the Effective Date, subject to the terms and conditions of this Agreement, Codex agrees to grant and hereby grants to Pfizer a non-exclusive, sublicensable (subject to Section 2.7) license (and, to the extent any Codex Technology is Controlled by Codex pursuant to a Codex Third Party Agreement, a sublicense, as applicable) under the Codex Technology to Develop and use the Deliverables solely to use, have used, Develop, have Developed, Manufacture, have Manufactured, Commercialize, have Commercialized and otherwise Exploit Products in the Field.

2.3. Output Materials. Codex agrees that, as between the Parties, (a) Pfizer is the sole and exclusive owner of all right, title and interest in and to any Output Materials generated under the Research Plan by either Party and any Products containing, expressing or encoding such Output Materials and (b) Codex has no right, title or interest in or to any such Output Materials or Products. Codex further agrees that consistent with such ownership rights, Pfizer shall have sole authority over and control of the Development, Manufacture, Regulatory Approval and Commercialization of such Output Materials and Products in accordance with the terms of Section 5.

2.4. Exclusive Option.

2.4.1. Grant. Effective as of the Effective Date, subject to the terms and conditions of this Agreement (including Section 2.10 (Retained Rights)), Codex hereby grants to Pfizer exclusive options, on the terms set forth in this Section 2.4 (the "Options" and each an "Option"), exercisable at Pfizer's sole discretion during the Option Exercise Period pursuant to Section 2.4.2, on an Exclusive Field-by-Exclusive Field basis, to obtain an exclusive (even as to Codex), sublicensable (subject to Section 2.5) license (and, to the extent any Codex Technology is Controlled by Codex pursuant to a Codex Third Party Agreement, a sublicense, as applicable) under the Codex Technology (including any Deliverables therein), to use, have used, Develop, have Developed, Manufacture, have Manufactured, Commercialize, have Commercialized and otherwise Exploit products in such Exclusive Field for which Pfizer has exercised the Option pursuant to Section 2.4.

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2.4.2. Exercise of the Option. At any time prior to the expiration of the Option Exercise Period, on an Option-by-Option basis, Pfizer may exercise its Option(s) in accordance with the procedure set forth in this Section 2.4.2. On or before the last day of the Option Exercise Period, Pfizer shall notify Codex in writing if Pfizer, in its sole discretion, elects to exercise the Option(s). For avoidance of doubt, the Exclusive Development Milestones, Exclusive Sales Milestones and Exclusive Royalties described in Section 3 shall solely be applicable to any Exclusive Products for use in an Exclusive Field for which Pfizer has exercised its Option in accordance with this Section 2.

2.4.3. Effects of Exercise of Option. Upon exercise of an Option in accordance with Section 2.4.2 in respect of an Exclusive Field, effective upon the Option Exercise Date with respect to such Exclusive Field and subject to the terms and conditions of this Agreement (including Section 2.10 (Retained Rights)), Codex hereby grants to Pfizer an exclusive (even as to Codex), sublicensable (subject to Section 2.7) license (and, to the extent any Codex Technology is Controlled by Codex pursuant to a Codex Third Party Agreement, a sublicense, as applicable) under the Codex Technology (including the Deliverables) to use, have used, Develop, have Developed, Manufacture, have Manufactured, Commercialize, have Commercialized and otherwise Exploit Products in such Exclusive Field.

2.5. Unblocking License. Subject to the terms and conditions of this Agreement and without limiting Section 2.10, Pfizer hereby grants to Codex a non-exclusive, royalty-free, perpetual, irrevocable, fully paid-up license in the Territory, with the right to grant sublicenses (subject to the remainder of this Section 2.5) to Third Parties without Pfizer's prior written consent, under any Pfizer Sole Research Plan Patent Rights solely to the extent such Pfizer Sole Research Plan Patent Rights is directed to Instrument/Methods Know-How and not directed to Output Materials or Pfizer Material Improvements and is necessary for Codex to practice the Core Codex DNA Technology. Notwithstanding the forgoing, Codex would be permitted to sublicense the foregoing license to a third party licensor of Codex only if (i) Codex has a similar reciprocal arrangement with such Third Party licensee running to the benefit of Pfizer or (ii) Codex and Pfizer have agreed upon reasonable terms and conditions with respect to such right to sublicense to such Third Party, which the Parties agree to negotiate in good faith.

2.6. Right of Reference. Codex hereby grants to Pfizer, its Affiliates and its Sublicensees a "Right of Reference," as that term is defined in 21 C.F.R. § 314.3(b) (or any analogous Law recognized outside of the United States), to all data (including any regulatory filings or Regulatory Approvals) Controlled by Codex or its Affiliates that relates generally to DNA or RNA Manufactured by an Instrument and Codex will provide a signed statement to this effect, if requested by Pfizer, in accordance with 21 C.F.R. § 314.50(g)(3) (or any analogous Law outside of the United States). For clarity, the foregoing obligation to provide any right or reference does not include any such obligation with respect to any specific DNA or RNA product or component thereof.

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2.7. Permitted Sublicensees. Pfizer shall have the right to freely grant sublicenses under any and all rights licensed to Pfizer under this Agreement to Third Party subcontractors, Affiliates or Third Parties; provided that (a) the rights licensed to Pfizer pursuant to Section 2.1.1 may not be sublicensed to any Sublicensee other than an Affiliate or Third Party subcontractors without Codex's prior written consent, such consent not to be unreasonably withheld, delayed or conditioned and (b) the rights licensed to Pfizer pursuant to Sections 2.2 and 2.4.3 may be sublicensed to any Sublicensee without Codex's prior written consent provided that such rights are licensed as part of an agreement between Pfizer or its Affiliate and a Third Party for such Third Party to Develop, Manufacture or Commercialize one or more Products (or further versions thereof). Upon Codex's request, Pfizer shall furnish to Codex copies of such sublicense agreements, subject to redactions for financial, business and technical information (including confidential information of Third Parties) to the extent not required to ensure compliance with Section 2.7. Each sublicense granted by Pfizer shall be granted pursuant to a written agreement that is subject to and consistent with the terms and conditions of this Agreement.

2.8. Direct Licenses to Affiliates. Pfizer may, from time to time, request that Codex grant licenses directly to Affiliates of Pfizer by giving written notice, upon receipt of which Codex agrees to enter into and sign a separate direct license agreement with such designated Affiliate of Pfizer. All such direct license agreements shall be consistent with the terms and conditions of this Agreement, except for such modifications as may be required by applicable Laws in the country in which the direct license will be exercised. The Parties further agree to make any amendments to this Agreement that are necessary to conform the combined terms of such direct licenses and this Agreement to the terms of this Agreement as set forth on the Effective Date. All costs of making such direct license agreement(s), including Codex's reasonable attorneys' fees, under this Section 2.5 shall be borne by Pfizer. Pfizer shall remain responsible for the performance of its Affiliates under any such direct license agreement(s), and any breach of any such direct license agreement(s) by the Pfizer Affiliate that is a party thereto.

2.9. No Implied Rights. Except as expressly provided in this Agreement, neither Party shall be deemed to have granted the other Party (by implication, estoppel or otherwise) any right, title, license or other interest in or with respect to any intellectual property right, including any Patent Right, Know-How or information Controlled by such Party. For the avoidance of doubt, Pfizer shall not (a) sell, lease or otherwise transfer any Instrument, Method or Deliverable to a Third Party other than a Third Party subcontractor or Sublicensee or (b) use (or authorize, assist or enable an Affiliate or Third Party to use) any Instrument, Method or Deliverable to perform fee-for-service activities for or on behalf of a Third Party unless such activity is a part of an agreement with such Third Party for the Development, Manufacture or Commercialization of one or more Products.

2.10. Retained Rights. Notwithstanding the exclusive nature of the licenses granted pursuant to Section 2.4.3 following the exercise of an Option pursuant to Section 2.4.2, Codex expressly retains the rights to practice Codex Technology in the Exclusive Fields in the Territory solely in order to (a) perform its obligations under the Research Plan and (b) use, have used and otherwise Exploit the Instruments, Methods and Deliverables for research use (and authorize

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others to do the same), including research pertaining to any Exclusive Field. For the avoidance of doubt, nothing in this Section 2.10 conveys, or is meant to convey or suggest, any right of Codex (x) to disclose, use or permit the disclosure or use of the Confidential Information of Pfizer or Pfizer Technology in the conduct of activities described in clause (a) and (b) of the preceding sentence or (y) to Commercialize or clinically Develop products in an Exclusive Field using Codex Technology, and (z) Codex's violation of the foregoing would be a material breach of the terms of this Agreement. For clarity, Codex retains the exclusive right to practice, license and otherwise Exploit the Codex Technology for any reason outside the scope of the licenses granted herein.

2.11. Technology Transfer. During the Term, Codex will promptly effect the timely and orderly transfer of Codex Technology and Deliverables to enable Pfizer to perform its obligations under the Research Plan and to exercise its rights under this Agreement, including by providing Pfizer with all reasonable assistance necessary or desirable to effect such transfer; provided that, unless otherwise expressly stated hereunder, Codex will not have an obligation to effect the transfer to Pfizer of any Codex Know-How first conceived following the Research Term.

3. PAYMENTS BY PFIZER TO CODEX

3.1. Upfront Payment. Within [***] days following the Effective Date, and upon receipt of an invoice by Pfizer in accordance with Section 3.9.3, Pfizer shall pay Codex a one-time payment of $8,000,000 USD in consideration for access to the Codex Technology, and as consideration, in part, for Codex's performance of the Research Plan.

3.2. Technical Milestone Payments. Upon receipt of an invoice by Pfizer in accordance with Section 3.9.3, Pfizer shall pay Codex the amounts set forth below (each, a "Technical Milestone Payment") within [***] days following the first occurrence of each event specified below next to such amount and as further described in the Research Plan (each, a "Technical Milestone"):

	Technical Milestones	Technical Milestone Payment
(i)	[***]	[***]
(ii)	[***]	[***]
(iii)	[***]	[***]
(iv)	[***]	[***]

Each of the Technical Milestone Payments set forth above shall be payable one time only, upon final determination by mutual agreement of the JRC that the applicable Technical Milestone has been achieved in accordance with the criteria set forth under the Research Plan. The maximum amount payable by Pfizer in respect of Technical Milestone Payments if all Technical Milestones occur shall be [***]USD.

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3.3. Development Milestones.

3.3.1. Products in the Non-Exclusive Field(s). Subject to Section 3.5, with respect to any Product upon receipt of an invoice by Pfizer in accordance with Section 3.9.3, Pfizer will pay Codex the amounts set forth below within [***] days following the first occurrence of each event described below (the "Non-Exclusive Development Milestones") for the first Product in each Non-Exclusive Field (i.e., on an Indication-by-Indication basis) to achieve such Non-Exclusive Development Milestone. Pfizer shall provide Codex with notice of the occurrence of each Non-Exclusive Development Milestone within [***] of achievement.

	Non-Exclusive Development Milestone	Development Milestone Payment for Products in Non-Exclusive Field
[***]	[***]	[***]
[***]	[***]	[***]
[***]	[***]	[***]

Each of the Development Milestone Payments payable pursuant to this Section 3.3.1 as set forth above will be payable one time only for each Non-Exclusive Field (regardless of the number of Products in such Non-Exclusive Field with respect to which the specified Non-Exclusive Development Milestone occurs). No Development Milestone Payments will be payable by Pfizer for any subsequent Product for each Non-Exclusive Field regardless of the number of Products Developed for each Non-Exclusive Field. Notwithstanding anything to the contrary in this Agreement, in the event [***] Product achieves the same Non-Exclusive Development Milestone for more than [***], the Development Milestone Payment shall be reduced by [***] for the [***] achievement of such Non-Exclusive Development Milestone by such Product and by [***] for the [***] achievement of such Non-Exclusive Development Milestone by such Product; provided that a Development Milestone Payment will not be paid for the achievement of a Non-Exclusive Development Milestone by the same Product after such Product has achieved such Non-Exclusive Development Milestone [***] (for clarity, [***]). For clarification, if one Product replaces another Product in Development for use in each Non-Exclusive Field, then such replacement Product will only be subject to Development Milestone Payments that have not previously been triggered by a Product in such Non-Exclusive Field. If the Non-Exclusive Development Milestones set forth in (ii) or (iii) of the table immediately above is achieved prior to the achievement of the Non-Exclusive Development Milestone set forth in (i), then Pfizer will pay the Development Milestone Payment for the Non-Exclusive Development Milestone in (i) of the table immediately above together with the payment for the most recently achieved Non-Exclusive Development Milestone. In the event the Non-Exclusive Development Milestone in (iii) of the table immediately above is achieved prior to the achievement of the Non-Exclusive Development Milestone in (ii) of the table immediately above, the Non-Exclusive Development Milestone in (ii) of the table immediately above will not be due or payable. The maximum amount payable by Pfizer

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under this Agreement with respect to all Non-Exclusive Development Milestones for Products if all Non-Exclusive Development Milestones will be [***] for each Non-Exclusive Field.

3.3.2. Products in the Exclusive Field(s). Subject to Section 3.5, on an Exclusive Field-by-Exclusive Field basis, with respect to any Product in an Exclusive Field, upon receipt of an invoice by Pfizer in accordance with Section 3.9.3, Pfizer will pay Codex the amounts set forth below within [***] days following the first occurrence of each event described below (the "Exclusive Development Milestones" and, together with the Non-Exclusive Development Milestones, the "Development Milestones") for the first Product for an Exclusive Field to achieve such Exclusive Development Milestone. Pfizer shall provide Codex with notice of the occurrence of each Exclusive Development Milestone within [***] of achievement.

	Exclusive Development Milestone	Development Milestone Payment
[***]	[***]	[***]
[***]	[***]	[***]
[***]	[***]	[***]

Each of the Development Milestone Payments payable pursuant to this Section 3.3.2 as set forth above will be payable one time only for each Exclusive Field (regardless of the number of Products for an Exclusive Field with respect to which, or the number of times with respect to any Product for a single Exclusive Field, the specified Exclusive Development Milestone occurs). No Development Milestone Payments will be payable by Pfizer for any subsequent Product for an Exclusive Field regardless of the number of Products Developed for that Exclusive Field. For clarification, if one Product replaces another Product in Development for use for an Exclusive Field, then such replacement Product will only be subject to Development Milestone Payments that have not previously been triggered by one or more prior Products for such Exclusive Field. With respect to each Exclusive Field, if the Exclusive Development Milestones set forth in (ii) or (iii) of the table immediately above is achieved prior to the achievement of the Exclusive Development Milestone set forth in (i), then Pfizer will pay the Development Milestone Payment for the Exclusive Development Milestone in (i) of the table together with the payment for the most recently achieved Exclusive Development Milestone. With respect to each Exclusive Field, in the event the Exclusive Development Milestone in (iii) of the table immediately above is achieved prior to the achievement of the Exclusive Development Milestone in (ii) of the table immediately above, the Exclusive Development Milestone in (ii) of the table immediately above will not be due or payable. The maximum amount payable by Pfizer under this Agreement with respect to all Development Milestone Payments for Products in a single Exclusive Field if all Exclusive Development Milestones occur with respect to such Exclusive Field will be [***].

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3.4. Sales Milestone Payments.

3.4.1. Products in Non-Exclusive Field. Subject to Section 3.5, with respect to any Product in the Non-Exclusive Field, Pfizer will pay Codex, on a Product-by-Product basis for such Product in the Non-Exclusive Field, the following one-time payments when aggregate Net Sales of such Product in the Non-Exclusive Field on which royalties have been paid to Codex under Section 3.7.1 in a Pfizer Year (the "Total Annual Net Sales") first reach the respective thresholds indicated below (the "Non-Exclusive Sales Milestones"):

	Non-Exclusive Sales Milestone	Sales Milestone Payment
[***]	[***]	[***]
[***]	[***]	[***]
[***]	[***]	[***]

Pfizer will make any Sales Milestone Payment payable pursuant to this Section 3.4.1 with respect to a Pfizer Year within [***] days after the end of the applicable Pfizer Quarter in which such Non-Exclusive Sales Milestone is achieved and such payment will be accompanied by a report identifying the relevant Product in the Non-Exclusive Field, Net Sales of such Product in the Non-Exclusive Field and the amount payable to Codex under this Section 3.4. For the avoidance of doubt, each of the Sales Milestone Payments set forth above will be payable one time only with respect to each Product in the Non-Exclusive Field to achieve such Sales Milestone, regardless of the number of times the corresponding Total Annual Net Sales levels are achieved by such Product.

3.4.2. Products in Exclusive Field(s). Subject to Section 3.5, with respect to any Products in the Exclusive Field, Pfizer will pay Codex, on an Product-by-Product basis in the Exclusive Field, the following one-time payments when aggregate Net Sales of such Product in the Exclusive Field on which royalties have been paid to Codex under Section 3.7.2 in a Pfizer Year ("Total Annual Exclusive Net Sales") first reach the respective thresholds indicated below (the "Exclusive Sales Milestones" and, together with the Non-Exclusive Sales Milestones, the "Sales Milestones"):

	Exclusive Sales Milestone	Sales Milestone Payment
[***]	[***]	[***]
[***]	[***]	[***]
[***]	[***]	[***]

Pfizer will make any Sales Milestone Payment payable pursuant to this Section 3.4.2 with respect to a Pfizer Year within [***] after the end of the applicable Pfizer Quarter in which such Exclusive Sales Milestone is achieved and such payment will be accompanied by a report identifying the relevant Product in the Exclusive Field, Net Sales of such Product in the Exclusive Field, and the amount payable to Codex under this Section 3.4. For the avoidance of doubt, each of the Sales Milestone Payments set forth above will be payable

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one time only with respect to each Product in the Exclusive Field to achieve such Sales Milestone, regardless of the number of times the corresponding Total Annual Exclusive Net Sales levels are achieved by such Product.

3.5. Products in Both Exclusive and Non-Exclusive Field. If a Product contains mRNA encoding antigens in both a Non-Exclusive Field and Exclusive Field, such Product shall be deemed and treated as a Product in an Exclusive Field for purposes of this Agreement. To the extent that any payment to Codex under this Agreement is based on or for the same event or activity as a payment or reimbursement of costs under this Agreement or any other license agreement between Pfizer or any of its Affiliates and Codex or any of its Affiliates, such payment shall be payable to Codex only once, notwithstanding that the obligation to make such payment or reimbursement arises under both this Agreement and any such other agreement.

3.6. Milestone Payment Adjustment; Additional Payments for Previously Achieved Milestones. Each Development Milestone Payment for a Product in the Non-Exclusive Field or an Product in the Exclusive Field, as applicable, will be reduced by [***] if, at such time as the corresponding Development Milestone is achieved, neither the Manufacture or sale of the Product triggering such Milestone nor Pfizer's use of the Deliverables used for the Development or Manufacture of such Product is Covered by a Valid Claim. Each Sales Milestone Payment for any Product, as applicable, will be reduced by [***] if, at such time as the corresponding Milestone is achieved, neither the Manufacture or sale of the Product(s) triggering such Milestone nor Pfizer's use of the Deliverables used for the Development or Manufacture of such Product is Covered by a Valid Claim. In the event that more than one Sales Milestone is first achieved in a given Pfizer Year, Pfizer shall pay Codex the Sales Milestone Payment associated with each such Sales Milestone achieved during such Pfizer Year. Notwithstanding the above, in the event that a Development Milestone Payment is made with respect to a Product in the [***] or [***] (when such Field is part of the Non-Exclusive Field) and the [***] or [***], as applicable, becomes an Exclusive Field due to Pfizer's exercise of the relevant Option for such Exclusive Field pursuant to this Agreement, Pfizer shall pay Codex the differential between the Development Milestone Payment in the Non-Exclusive Field and the Exclusive Field within [***] days of invoice.

3.7. Royalty Payments.

3.7.1. Royalties for Products in Non-Exclusive Field. Subject to the provisions of Section 3.7.4, Pfizer will pay Codex, on a Product-by-Product basis, royalties on a tiered marginal royalty rate basis as set forth below (the "Non-Exclusive Marginal Royalty Rates") based on the annual aggregate Net Sales of such Product in the Non-Exclusive Field in the Territory during each Pfizer Year of the applicable Royalty Term for such Product in all Non-Exclusive Fields (each, the "Per Non-Exclusive Product Annual Net Sales"):

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Per Non-Exclusive Product Annual Net Sales in a Pfizer Year for a Product in all Non-Exclusive Fields	Non-Exclusive Marginal Royalty Rate (% Per Non-Exclusive Product Annual Net Sales)
[***]	[***]
[***]	[***]
[***]	[***]

Each Non-Exclusive Marginal Royalty Rate applicable to sales of Products in the Non-Exclusive Field set forth in the table above will apply only to that portion of the Per Non-Exclusive Product Annual Net Sales of a given Product in the Non-Exclusive Field in the Territory during a given Pfizer Year that falls within the indicated range. An example calculation of royalties under this Section 3.7.1 is set forth in Schedule 3.7.

3.7.2. Royalties for Products in an Exclusive Field(s). Subject to the provisions of Section 3.7.4, Pfizer will pay Codex on an Product-by-Product basis, royalties at the marginal royalty rates set forth below (the "Exclusive Marginal Royalty Rates") based on the annual aggregate Net Sales for such Product in the Exclusive Field in the Territory during each Pfizer Year of the applicable Royalty Term for such Product in the Exclusive Field (each the "Per Exclusive Product Annual Net Sales"):

[***]	Exclusive Marginal Royalty Rate (% of Per Exclusive Product Annual Net Sales)
[***]	[***]
[***]	[***]
[***]	[***]

Each Exclusive Marginal Royalty Rate applicable to sales of each Product in the Exclusive Field set forth in the table above will apply only to that portion of the Per Exclusive Product Annual Net Sales of a given Product in the Exclusive Field in the Territory during a given Pfizer Year that falls within the indicated range. An example calculation of royalties under this Section 3.7.2 is set forth in Schedule 3.7.

3.7.3. Fully Paid-Up, Royalty Free License. Following expiration of the Royalty Term for a Product in a given country, no further royalties will be payable in respect of sales of such Product in such country and, thereafter the license granted to Pfizer under this Agreement with respect to such Product in such country will automatically become fully paid-up, perpetual, irrevocable and royalty-free.

3.7.4. No Adjustment for Codex Third Party Agreements. As between the Parties, Codex will be solely responsible for (i) all payment obligations (including any royalty or other obligations that relate to the Codex Technology) under its agreements with Third Parties that are in effect as of the Effective Date or that Codex enters into during the Term and (ii) all payments to inventors (other than inventors that are Representatives of

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Pfizer) of Codex Technology who are Representatives of Codex, including payments under inventorship compensation Laws.

3.7.5. Biosimilar Entry. Notwithstanding the foregoing, for Net Sales based on sales of a Product in a country in the Territory, on a country-by-country basis, any payments owed with respect to such Product pursuant to this Section 3.7 will be reduced by [***] for the remainder of the applicable Royalty Term, if at any time (i) one or more Biosimilar Versions of such Product is available in such country and (ii) such one or more Biosimilar Versions in the aggregate have achieved in excess of [***] market penetration (based on unit volume).

3.8. Reports and Payments.

3.8.1. Cumulative Royalties. The obligation to pay royalties under this Agreement will be imposed only once with respect to any sale of any given unit of Product.

3.8.2. Royalty Statements and Payments. As soon as reasonably practicable (but in no event more than [***] after the end of each Calendar Quarter, Pfizer will deliver to Codex a report setting forth, for the most recent Pfizer Quarter ending during such Calendar Quarter, the following information, on a Product-by-Product in the Field, country-by-country and Territory-wide basis: [***]

3.9. Payment Terms.

3.9.1. Taxes and Withholding.

(a) It is understood and agreed between the Parties that any payments made by Pfizer to Codex under this Agreement are exclusive of any value added or similar tax ("VAT") imposed upon such payments. Where VAT is properly added to a payment made under this Agreement, the Party making the payment will pay the amount of VAT only on receipt of a valid tax invoice issued in accordance with the laws and regulations of the country in which the VAT is chargeable. In addition, in the event any payments made by Pfizer pursuant to this Agreement become subject to withholding taxes under the Laws or regulations of any jurisdiction or Governmental Authority, Pfizer will deduct and withhold the amount of such taxes for the account of Codex to the extent required by applicable Laws or regulations; such amounts payable to Codex will be reduced by the amount of taxes deducted and withheld; and Pfizer will pay the amounts of such taxes to the proper Governmental Authority in a timely manner and transmit to Codex an official tax certificate or other evidence of such tax obligations together with proof of payment from the relevant Governmental Authority of all amounts deducted and withheld sufficient to enable Codex to claim such payment of taxes. Any such withholding taxes required under applicable Laws or regulations to be paid or withheld will be an expense of, and borne solely by, Codex. Pfizer will provide Codex with reasonable assistance to enable Codex to recover such taxes as permitted by

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applicable Laws or regulations. The Parties shall reasonably cooperate with each other in claiming exemptions from such deductions and withholdings under any agreement or treaty in effect at the relevant time.

(b) Notwithstanding anything in this Agreement to the contrary, (i) if an action (including but not limited to any assignment, sublicense or exercise by any Affiliate of a Party's rights or obligations under this Agreement, or payment by any Affiliate of any amount due under this Agreement, or any failure to comply with applicable Laws or filing or record retention requirements) by a Party leads to the imposition of withholding tax liability or VAT on the other Party that would not have been imposed in the absence of such action or in an increase in such liability above the liability that would have been imposed in the absence of such action, then the sum payable by that Party (in respect of which such deduction or withholding is required to be made) shall be increased to the extent necessary to ensure that the other Party receives a sum equal to the sum which it would have received had no such action occurred, (ii) otherwise, the sum payable by that Party (in respect of which such withholding is required to be made) shall be made to the other Party after deduction of the amount required to be so withheld, which withheld amount shall be remitted in accordance with applicable Law.

3.9.2. Currency. All amounts payable and calculations under this Agreement shall be in United States dollars. As applicable, Net Sales and any royalty deductions will be translated into United States dollars at the exchange rate used by Pfizer for public financial accounting purposes. If, due to restrictions or prohibitions imposed by national or international authority, a given payment cannot be made as provided in this Section 3, Pfizer shall continue to provide Net Sales reports for such royalty payments, such royalty payments shall continue to accrue in such country, and the Parties shall consult with a view to finding a prompt and acceptable solution. If the Parties are unable to identify a mutually acceptable solution regarding such payment, then Pfizer may elect, in its sole discretion, to deliver such payment in the relevant jurisdiction and in the local currency of the relevant jurisdiction.

3.9.3. Method of Payment. Except as permitted pursuant to Section 3.7.4, each payment hereunder will be made by electronic transfer in immediately available funds via either a bank wire transfer, an ACH (automated clearing house) mechanism, or any other means of electronic funds transfer, at Pfizer's election, to such bank account as Codex will designate in writing to Pfizer at least [***] before the payment is due. All invoice or billing related questions should be referred to Pfizer's Accounting Department at [***] or go to the Accounts Payable Invoice Portal at [***].

3.9.4. Record Keeping. Pfizer and its Affiliates will keep and will contractually obligate its Sublicensees to keep books and accounts of record in connection with the sale of Products in the Field in sufficient detail to permit accurate determination of all figures necessary for verification of royalties and Sales Milestone Payments to be paid hereunder.

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Pfizer and its Affiliates will maintain and will contractually obligate its Sublicensees to maintain such records for a period of at least three years after the end of the Pfizer Quarter in which they were generated.

3.9.5. Audits. Upon [***] days prior notice from Codex, Pfizer will permit an independent certified public accounting firm of nationally recognized standing selected by Codex and reasonably acceptable to Pfizer, to examine, at Codex's sole expense, the relevant books and records of Pfizer and its Affiliates as may be reasonably necessary to verify the amounts reported by Pfizer in accordance with Section 3.8.2 and the payment of royalties and Sales Milestone Payments hereunder. An examination by Codex under this Section 3.9.5 will occur not more than once in any Calendar Year and will be limited to the pertinent books and records for any Calendar Year ending not more than three years before the date of the request. The accounting firm will be provided access to such books and records at Pfizer's or its Affiliates' facility(ies) where such books and records are normally kept and such examination will be conducted during normal business hours. Pfizer may require the accounting firm to sign a reasonably acceptable non-disclosure agreement before providing the accounting firm with access to Pfizer's or its Affiliates' facilities or records. Upon completion of the audit, the accounting firm will provide both Pfizer and Codex a written report disclosing any discrepancies in the reports submitted by Pfizer or the royalties or Sales Milestone Payments paid by Pfizer, and, in each case, the specific details concerning any discrepancies. No other information will be provided to Codex. Pfizer shall use commercially reasonable efforts to obtain the right to inspect and audit such Sublicensee's books and records for itself, and if such right is obtained, Pfizer shall disclose the results of any such audit to Codex in accordance with this Section 3.9.5 to the extent permitted by such Sublicensee.

3.9.6. Underpayments/Overpayments. If such accounting firm concludes that additional royalties or Sales Milestone Payments were due to Codex, then Pfizer will pay to Codex the additional royalties or Sales Milestone Payments within [***] of the date Pfizer receives such accountant's written report. Further, if the amount of such underpayments exceeds more than [***] of the amount that was properly payable to Codex, then Pfizer will reimburse Codex for Codex's out-of-pocket costs in connection with the audit. If such accounting firm concludes that Pfizer overpaid royalties or Sales Milestone Payments to Codex, then Codex will refund such overpayments to Pfizer, within [***] of the date Codex receives such accountant's report.

3.9.7. Confidentiality. Notwithstanding any provision of this Agreement to the contrary, all reports and financial information of Pfizer, its Affiliates or its Sublicensees which are provided to or subject to review by Codex under this Section 3 will be deemed to be Pfizer's Confidential Information and subject to the provisions of Section 7.

3.9.8. Acknowledgement. Pfizer and Codex acknowledge and agree that: (a) payments to Codex pursuant to Section 3.2 have been included in this Agreement on the basis that they are only payable or otherwise relevant if a Technical Milestone has been

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achieved; (b) payments to Codex pursuant to Sections 3.3 and 3.4 have been included in this Agreement on the basis that they are only payable or otherwise relevant if the applicable Product in the applicable country (if any) is successfully Developed (in the case of Section 3.3) or Commercialized (in the case of Section 3.4); and (ii) are solely intended to allocate amounts that may be achieved upon such successful Development or Commercialization of such Product between Pfizer (who will receive all Product sales revenues) and Codex; (c) Milestone Payments are not intended to be used and will not be used as a measure of damages if this Agreement is terminated for any reason, including pursuant to Pfizer's right to terminate at for convenience, before any such success is achieved and such amounts become due; and (d) Milestone Payments will only be triggered, and will only be relevant as provided in accordance with the terms and conditions of such provisions. Pfizer and Codex further acknowledge and agree that nothing in this Agreement, or in any document or presentation provided by Pfizer to Codex prior to the Effective Date will be construed as representing any estimate or projection of (i) the successful Development or Commercialization of any Product under this Agreement, (ii) the number of Products that will or may be successfully Developed or Commercialized under this Agreement, (iii) anticipated sales or the actual value of any Products that may be successfully Developed or Commercialized under this Agreement or (iv) the damages, if any, that may be payable if this Agreement is terminated for any reason. Pfizer makes no representation, warranty or covenant, either express or implied, that (A) it will successfully Develop, Manufacture, Commercialize or continue to Develop, Manufacture or Commercialize any Product in any country, (B) if Commercialized, that any Product will achieve any particular sales level, whether in any individual country or cumulatively throughout the Territory or (C) Pfizer will devote, or cause to be devoted, any level of diligence or resources to Developing or Commercializing any Product in any country, or in the Territory in general.

3.9.9. Disclosure of Fees. Consistent with any disclosure policy that may be implemented from time-to-time by Pfizer regarding payments made to members of the medical or scientific community, or in accordance with applicable laws or regulations, Pfizer shall have the right to disclose any terms related to this Agreement, including Codex's name and the fees provided hereunder. Codex also agrees to disclose its relationship with Pfizer as needed to comply with any disclosure requirements of any healthcare institution, medical committee, or other medical or scientific organization with which Codex is affiliated. This duty to disclose will continue during the term of this Agreement and for [***] after its termination.

3.9.10. No Double Counting. To the extent that any payment to Codex or reimbursement of costs due to Codex under this Agreement is based on or for the same event or activity as a payment or reimbursement of costs under this Agreement or any other license agreement between Pfizer or any of its Affiliates and Codex or any of its Affiliates, such payment or reimbursement of costs shall be payable to Codex only once, notwithstanding that the obligation to make such payment or reimbursement arises under both this Agreement and any such other agreement.

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4. RESEARCH PROGRAM.

4.1. Scope of Research. Pfizer and Codex will collaborate during the Research Term to conduct the research under the Research Plan (the "Research Program") in accordance with the terms set forth in this Section 4.

4.2. Research Plan. The Research Program will be performed by the Parties in accordance with the Research Plan and the terms and conditions set forth in this Section 4.

4.3. Allocation of Responsibilities.

4.3.1. General. Each Party shall use Commercially Reasonable Efforts to perform its obligations under the Research Plan in a professional and timely manner. Further, each Party shall perform its obligations under the Research Plan in compliance with all Laws applicable to its activities under the Research Plan.

4.4. Research Program Governance

4.4.1. Collaboration Management.

(a) Program Directors. During the Research Term, the Research Program shall have a program director from each Party (each, a "Program Director" and together the "Program Directors"), initially [***] for Codex and [***] for Pfizer. Each Party may change its designated Program Director at any time upon written notice to the other Party. The Program Directors shall coordinate the research efforts of their respective Party in conducting the Research Program. Each Program Director shall:

(i) use good faith efforts to attend (either in person or by telecommunications) all meetings of the JRC, but shall be a non-voting member at such meetings; and

(ii) be the first point of referral for all matters of conflict resolution within the scope of the JRC's decision-making authority, and bring any such disputes to the attention of the JRC in a timely manner.

4.4.2. Joint Research Committee.

(a) Composition. The Parties shall establish a Joint Research Committee, comprised of two representatives of Codex and two representatives of Pfizer. As of the Effective Date, the JRC representatives shall be [***] for Pfizer (the "Pfizer JRC Members") and [***] for Codex (the "Codex JRC Members"). Each Party may replace its representatives to the JRC at any time upon notice to the other Party. Each Party may invite non-voting employees and, with the other Party's JRC Chair's prior written consent, Third Party consultants to attend

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meetings of the JRC. All members of the JRC and any invitees of either Party described above shall agree in writing to be bound to obligations of confidentiality and assignment of inventions no less restrictive than those that bind the Parties under this Agreement.

(b) Committee Chair. The JRC shall be co-chaired by a Pfizer JRC Member and a Codex JRC Member (each, a "JRC Co-Chair") named by each Party. Each Party may replace its JRC Co-Chair at any time upon notice to the other Party. The responsibilities of the JRC Co-Chairs shall be:

(i) to notify each Party at least [***] days in advance of each JRC meeting;

(ii) to collect and organize agenda items for each JRC meeting; and

(iii) to prepare the written minutes of each JRC meeting and circulate such minutes for review and approval by the Parties, and identify action items to be carried out by the Parties.

(c) Meetings. During the Research Term, the JRC shall meet at least quarterly or as frequently as agreed upon by the Parties, either in-person or by audio or video teleconference. Either Party may call a special meeting of the JRC by videoconference or teleconference upon at least [***] Business Days prior written notice to the other Party if such Party reasonably believes that a significant matter must be addressed prior to the next scheduled meeting. Meetings of the JRC will only occur if at least one representative of each Party is present at the meeting or participating by teleconference or videoconference. Each Party shall be responsible for all of its own expenses of participating in such JRC meetings. The Parties shall endeavor to schedule meetings of the JRC in advance as mutually agreed. The JRC Co-Chairs shall use good faith efforts to (i) prepare and circulate to each JRC meeting agenda no later than [***] Business Days prior to the scheduled date for each JRC meeting and (ii) circulate for review and approval by the Parties written minutes of each JRC meeting within [***] days after such meeting. The Parties shall agree on the minutes of each meeting promptly, but in no event later than the next meeting of the JRC.

(d) Responsibilities. The JRC shall oversee and supervise the overall performance of the Research Plan and within such scope shall:

(i) review the efforts of the Parties under the Research Plan;

(ii) review and approve any revised Research Plan; provided that any change to a Technical Milestone of the criteria for the achievement thereof shall require mutual agreement of the Parties;

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(iii) as required under Section 3.2, determine by mutual agreement of the Parties, whether a Technical Milestone has been achieved in accordance with the criteria set forth under the Research Plan;

(iv) address such other matters relating to the activities of the Parties under the Research Program as either Party may bring before the JRC, including any matters that are expressly for the JRC to decide as provided in this Agreement; and

(v) attempt to resolve any disputes relating to the Research Program on an informal basis.

(e) Decision-making. Notwithstanding the number of Pfizer JRC Members and Codex JRC Members, each Party will have one (1) vote, and the JRC will make decisions on a unanimous basis. The JRC will use good faith efforts to reach agreement on any and all matters properly brought before it. If, despite such good faith efforts, the JRC is unable to reach unanimous agreement on a particular matter within the scope of the JRC's decision-making authority, within [***] days after the JRC first meets to consider such matter, or such later date as may be mutually acceptable to the Parties (each such matter, a "Disputed Matter"), then either Party may refer that Disputed Matter for resolution by the appropriate senior officer of each Party, and such senior officers will promptly initiate discussions in good faith to resolve such Disputed Matter. If the senior officers of each Party are unable to resolve the Disputed Matter within [***] of it being referred to them, then [***] will have final decision-making authority with respect to all Disputed Matters, subject only to specific issues identified in this Agreement as expressly requiring mutual consent of the Parties. For clarity, the decision-making of the JRC is limited to matters related to the Research Program and Research Plan (including the implementation thereof).

(f) Limits on JRC Authority. Notwithstanding any provision of this Section 4.4 to the contrary, (i) each Party shall retain the rights, powers and discretion granted to it under this Agreement and no such rights, powers, or discretion shall be delegated to or vested in the JRC unless such delegation or vesting of rights is expressly provided for in this Agreement or the Parties expressly so agree in writing, (ii) the JRC shall not have the power to (A) impose any additional financial obligation on either Party or its Affiliates in a manner inconsistent with this Agreement, (B) resolve any dispute regarding the existence of amounts of any payment owed under this Agreement, (C) impose on either Party or its Affiliates a material obligation to allocate such Party's or its Affiliate's tangible or intangible resources or assets in a certain manner inconsistent with this Agreement or (D) amend this Agreement or otherwise modify or waive compliance with this Agreement in any manner and no decision of the JRC shall be in contravention of any term or condition of this Agreement and (iii) neither Party

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shall require the other Party to (A) breach any obligation or agreement that such other Party may have with or to a Third Party or (B) perform any activities that are materially different or greater in scope or more costly than those provided for in the Research Plan then in effect. It is understood and agreed that issues to be formally decided by the JRC are limited to those specific issues that are expressly provided in Section 4.4.2(d) of this Agreement and disputes which relate to subjects other than those set forth in Section 4.4.2(d) will be handled according to Section 12.12.

(g) Term. The JRC shall be dissolved immediately upon expiration of the Research Term.

4.5. Research Term Extension. If additional time is needed for the Parties to achieve the Technical Milestones described in the Research Plan, Pfizer may extend the Research Term at its option by up to one additional year by providing notice to Codex not later than [***] prior to the end of the first year of the Research Term.

4.6. Research Program Expenses. Each Party shall bear all costs and expenses it incurs in connection with its activities under the Research Program.

4.7. Scientific Records. Each Party shall maintain complete, current and accurate records of all activities conducted by it pursuant to the Research Program, and all data and other information resulting from such activities. Such records shall fully and properly reflect all work done and results achieved in the performance of such activities in good scientific manner appropriate for regulatory and patent purposes, and such records shall comply with applicable Laws, including applicable national and international guidelines such as the then-current Good Laboratory Practices promulgated or endorsed by the United States Food and Drug Administration, and any relevant guidelines under the International Congress on Harmonization. Each Party will provide the other Party with reasonable access to such records upon advance written notice as may be required to undertake the Research Program or to the extent necessary for regulatory purposes that are within the scope of such Party's rights and responsibilities under this Agreement.

4.8. Delegation and Subcontracting. Codex shall not delegate or subcontract any of its obligations in connection with the Research Program to an Affiliate or Third Party, without Pfizer's prior written consent. Any permitted Affiliate or Third Party subcontractors of either Party must have reasonably sufficient knowledge, experience and resources to perform such activities and, such Third Party, as applicable, must have entered into a binding subcontract with such Party under which such Third Party:

4.8.1. has agreed to assign and does assign to such Party all intellectual property rights generated during and in the course of its performance of the Research Program;

4.8.2. has agreed to terms and conditions with respect to confidentiality at least as restrictive as those described in Section 7; and

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4.8.3. has agreed to comply with terms substantially similar to the provisions set out in Section 4.7 with respect to its performance of the Research Program.

No delegation or subcontracting shall relieve either Party from its obligations under this Agreement, and the subcontracting Party shall remain fully responsible for the conduct of any Affiliate or Third Party subcontractor as though it were performing the activities itself.

4.9. Transfer of Pfizer Materials

4.9.1. Transfer. From time to time during the Research Term, Pfizer may, in its sole discretion, provide Codex with tangible chemical or biological materials, including Product(s) (the "Pfizer Materials"). Any Pfizer Materials are provided on an "as-is" basis without any representation or warranty of any type, express or implied, including any representation or warranty of merchantability, non-infringement, title or fitness for a particular purpose, each of which is hereby expressly disclaimed by Pfizer.

4.9.2. Permitted Use of Pfizer Materials. Codex shall use the Pfizer Materials solely in connection with conducting the activities specified in the Research Plan (the "Codex Permitted Activities"). Without limiting the generality of the foregoing, except in the performance of the Codex Permitted Activities, Codex shall not (a) make or attempt to make any analogues, progeny or derivatives of, or modifications to, the Pfizer Materials or attempt to reverse engineer, characterize or in any way try to ascertain the identity, chemical structure, sequence, mechanism of action or composition of the Pfizer Material or (b) use the Pfizer Materials for its own benefit or for the benefit of any of its Affiliates or any Third Party. Further, Codex shall not administer any Pfizer Material to any human. Codex shall comply with all Laws applicable to the handling and use of the Pfizer Materials. Codex shall retain possession over the Pfizer Materials and not provide any Pfizer Materials to any of its Affiliates or to any Third Party without Pfizer's prior written consent, which consent may be withheld in Pfizer's sole discretion.

4.9.3. Unauthorized Use of Pfizer Materials. If Codex uses any Pfizer Material in any manner other than in the performance of the Codex Permitted Activities, then any and all results of such unauthorized use, whether patentable or not, shall belong solely and exclusively to Pfizer. Codex, on behalf of itself and its Affiliates, hereby assigns and agrees to assign to Pfizer all of Codex's and its Affiliates' right, title and interest in and to all such discoveries and inventions. Codex further agrees to cooperate with Pfizer to execute and deliver any and all documents that Pfizer deems reasonably necessary to perfect and enforce Pfizer's rights under this Section 4.9.3. Nothing in this Section 4.9.3 shall limit in any way any other remedy that Pfizer may have under this Agreement as a result of Codex's unauthorized use of any Pfizer Materials.

4.9.4. Title to Pfizer Materials and Output Materials. All right, title and interest in and to the Pfizer Materials shall remain the sole and exclusive property of Pfizer notwithstanding the transfer to and use by Codex of the same. Pfizer shall also have any

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and all right, title and interest in and to the Output Materials, which shall be the sole and exclusive property of Pfizer. Without limiting Section 6, Codex, on behalf of itself and its Affiliates, hereby assigns and agrees to assign to Pfizer all of Codex's and its Affiliates' right, title and interest in and to all Output Materials.

4.9.5. Return of Pfizer Materials. At the end of the Research Term (or such earlier time as Pfizer may request in writing), Codex shall either destroy or return to Pfizer, at Pfizer's sole discretion, all unused Pfizer Materials and Output Materials, as applicable.

4.9.6. Ownership of Pfizer Material Improvements and Output Materials. "Pfizer Material Improvement" means any Research Plan Know-How that is invented, developed or discovered by either Party that is predominantly directed to any Pfizer Material or (b) constitutes an improvement or enhancement to, or a derivative or modification of, any Pfizer Material or any method of making or using, which is predominantly related to any Pfizer Material, including, without limitation, any Output Materials. Without limiting Section 6, Codex, on behalf of itself and its Affiliates, hereby assigns and agrees to assign to Pfizer all of Codex's and its Affiliates' right, title and interest in and to any and all Pfizer Material Improvements and Output Materials. Codex shall promptly notify Pfizer of any Pfizer Material Improvement made by Codex or its Affiliates and shall reasonably cooperate in obtaining patent and other proprietary protection for such Pfizer Material Improvement. Such protection shall be obtained in the name of Pfizer and at Pfizer's cost and expense, and Codex shall, and shall cause its Affiliates to, execute and deliver all requested applications, assignments and other documents, and take such other actions as Pfizer may reasonably request, in order to perfect and enforce Pfizer's rights in any Pfizer Material Improvement.

4.9.7. Activities. Notwithstanding anything to the contrary in this Agreement, nothing in this Agreement (including this Section 4.9) shall be deemed to prevent or restrict in any way the ability of either Party or its Affiliates to conduct any activities in the Territory, which activities would be allowed under any safe harbor, research exemption, government or executive declaration of urgent public health need, or similar right available in law or equity if conducted by a Third Party.

4.9.8. Confidentiality. Each Party's obligations under this Section 4.9 are in addition to, and shall in no way limit, its obligations under Section 7.1 with respect to the other Party's materials.

5. PRODUCT DEVELOPMENT AND COMMERCIALIZATION.

5.1. General. Pfizer shall have sole authority over and control of the Development, Manufacture, regulatory approval and Commercialization of its Products for all Fields in the Territory.

5.2. Diligence.

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5.2.1. General. Upon exercise of an Option with respect to an Exclusive Field in accordance with Section 2.4.2, Pfizer shall itself, or through its Affiliates or Sublicensees, use Commercially Reasonable Efforts to [***] Pfizer will have no other diligence obligations with respect to the Development, Regulatory Approval or Commercialization of Products under this Agreement. For clarity, if an Exclusive Field become a Non-Exclusive Field pursuant to this Agreement, Pfizer shall no longer have an obligation under this Section 5.2.1 with respect to such field.

5.2.2. Assertion of Pfizer Diligence Obligation Claims. If Codex is, becomes or reasonably should be aware of facts that might form a reasonable basis to allege that Pfizer has failed to meet its diligence obligation under Section 5.2.1, then Codex will promptly notify Pfizer in writing of such potential alleged performance failure (each such potential alleged performance failure, a "Diligence Issue"). Promptly upon Pfizer's receipt of any notice of a Diligence Issue pursuant to this Section 5.2.2, the Parties shall use reasonable, good faith efforts to identify an appropriate corrective course of action if a Diligence Issue exists. If, no later than [***] days after Pfizer's receipt of such a notice, (a) the Parties have not reached consensus regarding whether Pfizer has failed to satisfy its obligations pursuant to Section 5.2.1 or (b) the Parties have not agreed upon an appropriate corrective course of action for such Diligence Issue, then such Diligence Issue may be escalated by either Party and resolved pursuant to the dispute resolution provisions set forth in Section 12.12. If Codex fails to notify Pfizer of a Diligence Issue pursuant to this Section 5.2.2 within [***] days after the date that Codex first discovers or reasonably should have discovered such Diligence Issue, then Pfizer will be deemed to have satisfied its obligations under Section 5.2.1 with respect to such Diligence Issue.

5.2.3. Remedies for Breach of Pfizer Diligence Obligations. If it is determined under Section 5.2.2 that Pfizer failed to meet its diligence obligation with respect to an Exclusive Field and such failure is a material breach of Pfizer's obligations under this Agreement, then Codex may elect to convert Pfizer's exclusive license with respect to such Exclusive Field granted under Section 2.4.3 into a non-exclusive license and the restrictions on Codex under Section 8.4.2 with respect to such Exclusive Field shall be lifted. Codex acknowledges and agrees that the election set forth in this Section 5.2.3: (i) has been negotiated by the Parties to fully address any harm that Codex may incur as a result of Pfizer's material breach of the Agreement in the form of a failure to meet its diligence obligation under Section 5.2.1 with respect to an Exclusive Field and (ii) if exercised, constitutes Codex's sole and exclusive remedy with respect to any breach by Pfizer of its diligence obligation under Section 5.2.1 with respect to the applicable Exclusive Field. In the event that Codex elects to convert Pfizer's exclusive license with respect to an Exclusive Field to a non-exclusive license, such Exclusive Field will become a Non-Exclusive Field and will no longer be an "Exclusive Field" under this Agreement, in each case immediately as of the time of conversion.

5.3. Regulatory Approvals. Pfizer or its designated Affiliate(s) shall have the sole authority to file applications for Regulatory Approval for its Products for all Fields in the Territory,

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including communicating with any Regulatory Authority both prior to and following Regulatory Approval. To the extent Pfizer requests any information or support with respect to any such application for Regulatory Approval for a Product, Codex shall provide reasonably requested support or information with any reasonable out-of-pocket costs incurred to be at Pfizer's expense.

5.4. Commercialization Activities.

5.4.1. General. Pfizer shall have sole and exclusive control over all matters relating to the Commercialization of its Products for the Field in the Territory, including sole and exclusive control over (a) pricing of such Products in the Field and (b) the negotiation of pricing with Regulatory Authorities and other Third Parties for such Products in the Field.

5.4.2. Branding. Pfizer or its designated Affiliates or Sublicensees shall select and own all Trademarks used in connection with the commercialization of any and all Output Materials and its Products for the Field in the Territory. Neither Codex nor its Affiliates shall use or seek to register, anywhere in the world, any Trademark not otherwise in use by Codex at the time of selection by Pfizer, its designated Affiliate or Sublicensee which is confusingly similar to any Trademark used by or on behalf of Pfizer, its Affiliates or Sublicensees in connection with any such Product for the Field in the Territory.

5.5. Manufacturing. Pfizer shall have the exclusive right to Manufacture, itself or through one or more Affiliates or Third Parties selected by Pfizer in its sole discretion, its Products for the Field in the Territory. For clarity, Pfizer shall have no diligence obligations with respect to the Manufacture of such Products.

5.6. Reporting. All information or written reports provided by Pfizer to Codex under this Section 5.6 shall be deemed Confidential Information of Pfizer and subject to Section 7.

5.6.1. Development Notices. Pfizer shall notify Codex in writing promptly following Pfizer's decision to [***] with respect to a Product that has been (a) discovered, designed, encoded or created using the Deliverables or (b) transcribed from DNA that was discovered, designed, encoded or created using the Deliverables (such notice, a "Development Notice").

5.6.2. Progress Reports. Until the First Commercial Sale of a Product, Pfizer will provide Codex with an annual written report summarizing, on a Product-by-Product basis, Pfizer's activities to Develop Products in the Field.

5.7. Other Pfizer Matters. Codex understands and acknowledges that Pfizer may have present or future initiatives or opportunities, including initiatives or opportunities with its Affiliates or Third Parties, involving the manufacture or synthesis of DNA or RNA, including products, programs, technologies or processes that are similar to, and in some instances may compete with, a Product, Instrument, or other program, technology or processes covered by this Agreement. Codex acknowledges and agrees that nothing in this Agreement will be construed as a

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representation, warranty, covenant or inference that Pfizer will not itself Develop, Manufacture or Commercialize or enter into business relationships with one or more of its Affiliates or Third Parties to develop, Manufacture or synthesize DNA or RNA, or Manufacture or Commercialize any products, instruments, programs, technologies or processes that are similar to or that may compete with any Instrument, Product or other program, technology or process covered by this Agreement.

6. INTELLECTUAL PROPERTY

6.1. Ownership of Intellectual Property. Except as otherwise explicitly set forth in this Agreement, the Parties hereby agree that ownership and inventorship of any Know-How made by any Party, solely or jointly, pursuant to this Agreement and any and all Patent Rights claiming or disclosing any invention included in such Know-How shall be determined in accordance with United States patent laws.

6.1.1. Ownership of Pfizer Technology. As between the Parties, subject to Section 6.1.3, Pfizer shall own all right, title and interest in and to the Pfizer Technology. Codex, on behalf of itself and its Affiliates, hereby assigns and agrees to assign to Pfizer all of Codex's and its Affiliates' right, title and interest in and to all Pfizer Sole Research Plan Know-how and Pfizer Sole Research Plan Patent Rights. Codex further agrees to cooperate with Pfizer (at Pfizer's request and expense) to execute and deliver any and all documents that Pfizer deems reasonably necessary to perfect and enforce Pfizer's rights in and to the Pfizer Technology under this Section 6.1.1.

6.1.2. Ownership of Codex Technology. As between the Parties, subject to Section 6.1.3, Codex shall own all right, title and interest in and to the Codex Technology. Pfizer further agrees to cooperate with Codex (at Codex's request and expense) to execute and deliver any and all documents that Codex deems reasonably necessary to perfect and enforce Codex's rights in and to the Codex Technology under this Section 6.1.2.

6.1.3. Ownership of Joint Research Plan Technology. The Parties will jointly own any Joint Research Plan Technology. Subject to the licenses or other rights granted to Pfizer under Sections 2.1, 2.2, 2.3, and 2.4 and the Parties' other rights and obligations under this Agreement (including Codex's obligations under Section 8.4), each Party shall be free to exploit, either itself or through the grant of licenses to Third Parties (which Third Party licenses may be further sublicensed), Joint Research Plan Technology throughout the world without restriction, without the need to obtain further consent from or provide notice to the other Party, and without any duty to account or otherwise make any payment of any compensation to the other Party.

6.1.4. Disclosure. Each Party will promptly disclose to the other Party all inventions within the Research Plan Know-How that it develops or invents, whether solely or jointly with others (in any event, prior to the filing of any patent application with respect to such inventions), including all invention disclosures or other similar documents

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submitted to such Party by its or its Affiliates' employees, agents, or independent contractors relating thereto. Each Party will also promptly respond to reasonable requests from the other Party for additional information relating thereto.

6.2. Patent Rights.

6.2.1. Filing, Prosecution and Maintenance of Patent Rights.

(a) Codex Sole Research Plan Patent Rights and Instrument/Methods Patent Rights. Codex shall have the sole right, at its sole expense, to file, prosecute and maintain the Codex Sole Research Plan Patent Rights and Instrument/Methods Patent Rights in its sole discretion; provided, however that no Codex Sole Research Plan Patent Right shall claim or disclose any Pfizer Sole Research Plan Know-How, in each case without Pfizer's prior written consent.

(b) Pfizer Sole Research Plan Patent Rights. Pfizer shall have the sole right, at its sole expense, to file, prosecute and maintain the Pfizer Sole Research Plan Patent Rights, including Pfizer Material Improvements or Output Material Patent Rights, in its sole discretion; provided, however that no Pfizer Sole Research Plan Patent Right shall claim or disclose any Codex Sole Research Plan Know-How, in each case without Codex's prior written consent.

(c) Joint Research Plan Technology. Notwithstanding anything herein to the contrary, in the event the Parties make any Joint Research Plan Know-How that is not Instrument/Method Know-How, the Parties shall discuss the timing of the filing and content of Joint Research Plan Patent Rights with the mutual goal of preserving the value of the Joint Research Plan Patent Rights. Unless otherwise agreed in writing by the Parties, (1) Pfizer will have the sole right to file, prosecute and maintain any Joint Research Plan Patent Rights that Cover or are primarily directed to one or more Products and (2) Codex will have the first right to file, prosecute and maintain other Joint Research Plan Patent Rights, in each case at such Party's own cost and expense. With respect to Joint Research Plan Patent Rights, each Party will, as applicable, (i) provide the other Party a reasonable opportunity and reasonable time to review and provide comment to such Party's counsel regarding relevant substantive communications by such Party and drafts of any responses or other proposed substantive filings by such Party before any applicable filings are submitted to any relevant patent office (or Governmental Authority) and (ii) reflect any reasonable and timely comments offered by the other Party in any final filings submitted by such Party to any relevant patent office (or Governmental Authority). In addition, if the Party with the first right to file, prosecute and maintain elects to cease the prosecution or maintenance of any Joint Research Plan Patent Right in any country or jurisdiction, it shall notify the other Party in writing sufficiently in advance (but not less than [***] before any action is required) so that such other Party may, at its discretion, assume the responsibility for the filing,

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prosecution or maintenance of such Joint Research Plan Patent Right in such designated country. The Parties agree that either Party may use internal patent counsel and agents, filing clerks, and paralegals employed by such Party, for coordinating worldwide filings of such Patent Rights, for prosecution before the European and Japanese Patent Offices, and for directly instructing US and ex-US outside counsel and patent agents, including by providing draft applications and responses, and that such Party may employ its preferred outside counsel and patent agents to conduct such activities as required for US and ex-US prosecution).

(d) The Parties shall at all times reasonably cooperate with each other in order to reasonably implement the foregoing provisions of this Section 6.2.1. Such cooperation may include each Party's execution of necessary legal documents, coordinating filing and/or prosecution of applications to avoid potential issues during prosecution (including novelty, enablement, estoppel and double patenting, execution of amendments and documents for reliance on the CREATE Act, if needed), and the assistance of each Party's relevant personnel. Without limiting the foregoing, it is understood that even if a Party is permitted to reference the other Party's technology created, discovered or utilized in the Research Program in a patent application filed pursuant to this Agreement, the filing Party shall not file any such patent application without first notifying the non-filing Party of the disclosure of the non-filing Party's technology. If the non-filing Party determines that any such filing could adversely affect its filing strategy, the filing Party shall delay filing any such patent application and the Parties shall cooperate in accordance with this Section 6.2.1(d) to determine a strategy that would protect each Party's interests. However, the filing Party will only be required to delay filing for a maximum of [***] days after notice to the non-filing Party unless the non-filing Party can show that a limited additional time period would allow it to protect its interests without prejudice to the filing Party's interests. Pfizer shall not disclose and/or claim in any patent application, patent or publication any Codex Confidential Information without Codex's prior written consent. Codex shall not disclose and/or claim in any patent application, patent or publication any Pfizer Confidential Information without Pfizer's prior written consent.

6.2.2. Clarifications. For clarity, (i) prosecution under this Section 6.2 includes opposition, revocation, post-grant review or other patent office proceedings, unless such proceedings are concurrent with Third Party litigation under Section 6.3, in which case the provisions of Section 6.3 shall govern the Parties' rights and obligations with respect to such proceedings, and (ii) Third Party declaratory judgment actions or other court actions relating to Patent Rights shall be governed by Sections 6.3.2 and 6.3.3, if applicable.

6.2.3. Liability. To the extent that a Party is obtaining, prosecuting or maintaining a Patent Right or otherwise exercising its rights under this Section 6.2, such Party, and its Affiliates, employees, agents or representatives, will not be liable to the other Party in respect of any act, omission, default or neglect on the part of any such Party, or its

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Affiliates, employees, agents or representatives, in connection with such activities undertaken in good faith.

6.2.4. Recording. If Pfizer deems it necessary or desirable to register or record this Agreement or evidence of this Agreement with any patent office or other appropriate Governmental Authority(ies) in one or more jurisdictions in the Territory, Codex shall reasonably cooperate (at Pfizer's request and expense) to execute and deliver to Pfizer any documents accurately reflecting or evidencing this Agreement that are necessary or desirable, in Pfizer's reasonable judgment, to complete such registration or recordation. Pfizer shall reimburse Codex for all reasonable out-of-pocket expenses, including attorneys' fees, incurred by Codex in complying with the provisions of this Section 6.2.4.

6.3. Enforcement and Defense of Patent Rights.

6.3.1. Enforcement.

(a) Enforcement of Codex Patent Rights. Codex shall have the sole right, but no obligation, to take action to obtain a discontinuance of infringement or bring suit against a Third Party infringing or challenging the validity or enforceability of any Codex Patent Right other than a Joint Research Plan Patent Right.

(b) Enforcement of Pfizer Patent Rights. Pfizer shall have the sole right, but no obligation, to take action to obtain a discontinuance of infringement or bring suit against a Third Party infringing or challenging the validity or enforceability of any Pfizer Patent Right other than a Joint Research Plan Patent Right.

(c) Enforcement of Joint Research Plan Patent Rights. Notwithstanding anything herein to the contrary, each Party will promptly notify the other in the event of any actual, potential or suspected infringement of a patent under the Joint Research Plan Patent Rights by any Third Party. As between Pfizer and Codex, Pfizer will have the sole right, but not the obligation, to institute litigation or take other steps to remedy infringement in connection with the Joint Research Plan Patent Rights by the development, manufacture or commercialization of an Product in the Territory, and any such litigation or steps will be at Pfizer's expense, subject to Codex's obligation to indemnify Pfizer for such expenses pursuant to Section 10; provided that any infringement recoveries resulting from such litigation or steps relating to a claim of Third Party infringement, after deducting Pfizer's out of pocket expenses (including counsel fees and expenses) in pursuing such claim, will be deemed Net Sales. Pfizer will not, without the prior written consent of Codex, enter into any compromise or settlement relating to such litigation that (i) admits the invalidity or unenforceability of any Codex Patent Right or Joint Research Plan Patent Right or (ii) requires Pfizer

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to abandon any Joint Research Plan Patent Right. Codex, upon request of Pfizer, agrees to timely commence or to join in any such litigation, at Pfizer's expense, and in any event to cooperate with Pfizer in such litigation or steps at Pfizer's expense. Codex will have the right to consult with Pfizer about such litigation and to participate in and be represented by independent counsel in such litigation at Codex's own expense. Neither Party will incur any liability to the other Party (other than that related to a Party's indemnification obligation pursuant to Section 10) as a consequence of any litigation initiated or pursued pursuant to this Section 6.3 or any unfavorable decision resulting therefrom, including any decision holding any Codex Patent Right or Joint Research Plan Patent Right invalid or unenforceable. With respect to instituting litigation or taking other steps to remedy infringement in connection with the other Joint Research Plan Patent Rights, the Parties shall determine a mutually agreeable course of action. In no event shall a Party make an argument or settle a dispute which would render a claim in a Joint Research Plan Patent Right to be invalid or unenforceable without the other Party's prior written consent.

6.3.2. Allegations of Infringement and Right to Seek Third Party Licenses.

(a) Notice. If Codex receives written notice from a Third Party that the practice of any Codex Technology, or the exercise of any other right granted by Codex to Pfizer hereunder (collectively, the "Licensed Activities") by Pfizer or any of its Affiliates or Sublicensees is alleged by such Third Party to infringe, misappropriate or otherwise violate such Third Party's Patent Rights or other intellectual property rights, or Codex otherwise identifies any Third Party Patent Rights or other intellectual property rights that may be relevant to such activities, Codex shall, promptly upon becoming aware of such allegation or identification, notify Pfizer in writing.

(b) Pfizer Option to Negotiate. If Pfizer determines, in its sole discretion, that, in order for Pfizer, its Affiliates or Sublicensees to engage in the Licensed Activities, it is necessary or desirable to obtain a license under one or more Patent Rights or other intellectual property rights Controlled by a Third Party, then Pfizer shall have the sole right, but not the obligation, to negotiate and enter into an exclusive license or other agreement with such Third Party in the Field under such Patent Rights or other intellectual property rights; provided that if and to the extent such Patent Rights are necessary to practice Core Codex DNA Technology, Pfizer shall only negotiate and enter into a non-exclusive license or other agreement with such Third Party with respect to the Non-Exclusive Field.

6.3.3. Third Party Infringement Suits. Each of the Parties shall promptly notify the other in the event that any Third Party files any suit or brings any other action alleging patent infringement by Pfizer or Codex or any of their respective Affiliates or Sublicensees with respect to the practice of any Codex Technology or Licensed Activities

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(any such suit or other action referred to herein as an "Infringement Claim"). In the case of any Infringement Claim against Pfizer (including its Affiliates or Sublicensees) alone or against both Pfizer and Codex (including its Affiliates), Pfizer shall have the right, but not the obligation, to control the defense of such Infringement Claim, including control over any related litigation, settlement, appeal or other disposition arising in connection therewith. Codex, upon request of Pfizer, agrees to join in any litigation associated with any Infringement Claim at Pfizer's expense and in any event to cooperate with Pfizer at Pfizer's expense. Codex will have the right to consult with Pfizer concerning any Infringement Claim and to participate in and be represented by independent counsel in any associated litigation in which Codex is a party at Codex's own expense. If Pfizer elects to control the defense of any Infringement Claim and Codex is obligated under Section 10.3 to indemnify Pfizer (including any Pfizer Indemnified Party) with respect to such Infringement Claim, then (a) Pfizer will bear [***] incurred in investigating, preparing or defending such Infringement Claim notwithstanding the provisions of Section 10.3 and (b) Codex will otherwise indemnify Pfizer and any applicable Pfizer Indemnified Parties to the full extent provided for under Section 10.3. In the case of any Infringement Claim against Codex alone, Pfizer shall have the right to consult with Codex concerning such Infringement Claim and Pfizer, upon request of Codex, will reasonably cooperate with Codex at Codex's expense (but Pfizer shall have no obligation to join any Infringement Claim or associated litigation).

6.3.4. Enforcement and Defense of Know-How.

(a) Misappropriation Actions Relating to Codex Know-How. Codex shall have the sole right, but no obligation, to take action to obtain a discontinuance of misappropriation or bring suit against a Third Party that is misappropriating, or that is suspected of misappropriating, any Codex Know-How other than a Joint Research Plan Know-How.

(b) Misappropriation of Actions Relating to Pfizer Know-How. Pfizer shall have the sole right, but no obligation, to take action to obtain a discontinuance of misappropriation or bring suit against a Third Party that is misappropriating, or that is suspected of misappropriating, any Pfizer Know-How and Pfizer Sole Research Plan Know-How other than a Joint Research Plan Know-How.

(c) Misappropriation of Joint Research Plan Know-How. Each Party will promptly notify the other in the event of any actual, potential or suspected misappropriation of Joint Research Plan Know-How by any Third Party, and the Parties shall determine a mutually agreeable course of action. In no event shall a Party, without the prior written consent of other Party, enter into any compromise or settlement relating to such misappropriation claim that (i) admits that all or any portion of the Joint Research Plan Know-How is not protectable under relevant trade secret Laws or (ii) requires the other Party to abandon trade secret protection for any Joint Research Plan Know-How.

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6.4. Codex Third Party Agreements. If on or after the Effective Date, Codex contemplates entering into a Codex Third Party Agreement under which Pfizer would be obligated to comply with any additional non-financial provisions as a sublicensee or transferee, then Codex shall (a) notify Pfizer of such agreement and (b) provide Pfizer [***] to review and provide comments to the terms of such agreement prior to signing with any reasonable comments provided by Pfizer to be considered and implemented in good faith by Codex; provided that for any such Codex Third Party Agreement, Codex shall notify Pfizer within [***] days of execution of such agreement, such notice to be accompanied by a copy of such Codex Third Party License Agreement, and Pfizer will not be granted a sublicense under such Codex Third Party Agreement unless it notifies Codex in writing of such sublicense acceptance within [***] days of Codex's notice.

7. CONFIDENTIALITY

7.1. Confidentiality. Except to the extent expressly authorized by this Agreement, the Parties agree that, during the Term and for five years thereafter, each Party (the "Receiving Party") receiving any Confidential Information of the other Party (the "Disclosing Party") hereunder shall: (a) keep the Disclosing Party's Confidential Information confidential; (b) not disclose, or permit the disclosure of, the Disclosing Party's Confidential Information; and (c) not use, or permit to be used, the Disclosing Party's Confidential Information for any purpose other than as expressly permitted under the terms of this Agreement.

7.2. Authorized Disclosure.

7.2.1. Disclosure to Party Representatives. Notwithstanding the foregoing provisions of Section 7.1, the Receiving Party may disclose Confidential Information belonging to the Disclosing Party to the Receiving Party's Representatives who (a) have a need to know such Confidential Information in connection with the performance of the Receiving Party's obligations or the exercise of the Receiving Party's rights under this Agreement and (b) have agreed in writing to non-disclosure and non-use provisions with respect to such Confidential Information that are at least as restrictive as those set forth in this Section 7.

7.2.2. Disclosure to Third Parties. Notwithstanding the foregoing provisions of Section 7.1, each Party may disclose Confidential Information belonging to the other Party to the extent such disclosure is reasonably necessary:

(a) to Governmental Authorities (i) to the extent desirable to obtain or maintain INDs or Regulatory Approvals for any Output Material or Product within the Territory, and (ii) in order to respond to inquiries, requests or investigations relating to Output Material, Products or this Agreement;

(b) to outside consultants (including any professional advisor), potential acquisition partners (including any potential successors in interest), private investors or financing sources, contractors, advisory boards, managed care

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organizations, and non-clinical and clinical investigators, in each case to the extent desirable to develop, register or market any Output Material, Product; provided that the Receiving Party shall obtain the same confidentiality obligations from such Third Parties as it obtains with respect to its own similar types of confidential information, and at least as restrictive as those set forth in this Section 7;

(c) in connection with filing or prosecuting Patent Rights or Trademark rights as permitted by this Agreement,

(d) in connection with prosecuting or defending litigation arising from this Agreement;

(e) subject to the provisions of Section 7.5.2, in connection with or included in scientific presentations and publications relating to Output Material, Products, including abstracts, posters, journal articles and the like, and posting results of and other information about clinical trials to clinicaltrials.gov or PhRMA websites;

(f) Pfizer may disclose Confidential Information belonging to Codex (including the terms of this Agreement) to any bona fide or potential Sublicensee or co-development or co-promotion partner who has agreed in writing to non-disclosure and non-use provisions with respect to such Confidential Information that are at least as restrictive as those set forth in this Section 7; and

(g) to the extent necessary or desirable in order to enforce its rights under this Agreement.

If a Party deems it reasonably necessary to disclose Confidential Information belonging to the other Party pursuant to this Section 7.2.2, then the Party disclosing pursuant to this Section 7.2.2 shall to the extent possible give reasonable advance written notice of such disclosure to the other Party and take such measures to ensure confidential treatment of such information as is reasonably required by the other Party, at the other Party's expense.

7.3. SEC Filings and Other Disclosures. Either Party may disclose the terms of this Agreement and make any other public written disclosure regarding the existence of, or performance under, this Agreement, to the extent required, in the reasonable opinion of such Party's legal counsel, to comply with applicable Law, including the rules and regulations promulgated by the United States Securities and Exchange Commission or any equivalent Governmental Authority, securities exchange or securities regulator in any country in the Territory. Before disclosing this Agreement or any of the terms hereof pursuant to this Section 7.3, the Parties will consult with one another on the terms of this Agreement to be redacted in making any such disclosure, with the Party disclosing pursuant to this Section 7.3 providing as much advanced notice as is feasible under the circumstances (but in no event less than [***] unless law requires otherwise), and giving good faith consideration to the comments of the other Party. Certain identified information marked with [***] has been excluded from this exhibit because it is not material and is of the type that the registrant treats as private and confidential.

Further, if a Party discloses this Agreement or any of the terms hereof in accordance with this Section 7.3, such Party shall, at its own expense, seek such confidential treatment of confidential portions of this Agreement and such other terms, as may be reasonably requested by the other Party and limit its disclosure of such Confidential Information to only that required to comply with applicable Law.

7.4. Residual Knowledge Exception. Notwithstanding any provision of this Agreement to the contrary, Residual Knowledge shall not be considered Confidential Information for purposes of this Section 7; provided that, for clarity, a Party's rights to Residual Knowledge hereunder shall not include the right to practice any Patent Right owned or Controlled by the other Party that claims or discloses such Residual Knowledge unless otherwise expressly granted in another provision of this Agreement or in another agreement between the Parties.

7.5. Public Announcements; Publications.

7.5.1. Announcements. Except as may be expressly permitted under Section 7.3 or this Section 7.5, neither Party will make any public announcement regarding this Agreement without the prior written approval of the other Party. For the sake of clarity, nothing in this Agreement shall prevent Pfizer from making any scientific publications or public announcement with respect to any Product under this Agreement; provided, however, that, except as permitted under Section 7.2, Pfizer shall not disclose any of Codex's Confidential Information in any such publication or announcement without obtaining Codex's prior written consent to do so. The Parties agree that the Parties will issue a mutually agreed upon joint press release regarding the signing of this Agreement following the Effective Date, substantially similar to the draft set forth in Schedule 7.5.1.

7.5.2. Publications. During the Term, each Party (the "Publishing Party") shall submit to the other Party (the "Non-Publishing Party") for review and approval any proposed publication or public presentation which contains the Non-Publishing Party's Confidential Information. In addition, except as otherwise permitted pursuant to Section 7.3 or Section 7.5.1, each Publishing Party shall submit to the Non-Publishing Party for review and approval any proposed publication or public presentation relating to the Research Program. In both instances, such review and approval will be conducted for the purposes of preserving the value of the Codex Technology and the Pfizer Technology, and the rights granted to Pfizer hereunder and determining whether any portion of the proposed publication or presentation containing the Non-Publishing Party's Confidential Information should be modified or deleted. Written copies of such proposed publication or presentation required to be submitted hereunder shall be submitted to the Non-Publishing Party no later than [***] days before submission for publication or presentation (the "Review Period"). The Non-Publishing Party shall provide its comments with respect to such publications and presentations within [***] days of its receipt of such written copy. The Review Period may be extended for an additional [***] days in the event the Non-Publishing Party can, within [***] days of receipt of the written copy, demonstrate reasonable need for such extension including for the preparation and filing of patent

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applications. Each Publishing Party will comply with standard academic practice regarding authorship of scientific publications and recognition of contribution of other parties in any publication governed by this Section 7.5.2, including International Committee of Medical Journal Editors standards regarding authorship and contributions. For the sake of clarity, Pfizer's obligation to submit any publication to Codex for review and approval under this Section 7.5.2 shall not apply to any publication which does not contain Codex's Confidential Information. In addition, Codex may use and disclose certain anonymized data obtained from performing the Research Program for the purpose of presenting the capabilities of the Codex Technology, Instrument or Methods to existing or prospective Codex partners, investors, acquirers or to members of the media; provided, that the use and disclosure of such anonymized data fall under one of the use rights as listed in Exhibit E, and Codex obtains Pfizer's prior written consent from Pfizer prior to such disclosure. Such anonymized data to be used from the Research Program shall make no reference to the fact that the data was generated under this Agreement, using the Pfizer Materials provided by Pfizer or the name or mechanism of action of any Product.

7.6. Obligations in Connection with Change of Control. If Codex is subject to a Change of Control during the Research Term, Codex will, and it will cause its Representatives to, ensure that no Confidential Information of Pfizer is released to (a) any Affiliate of Codex that becomes an Affiliate as a result of the Change of Control or (b) any other Representatives of Codex (or of the relevant surviving entity of such Change of Control) who become Codex Representatives as a result of the Change of Control, unless such Affiliate or other Representatives, as applicable, have signed confidentiality agreements which include equivalent obligations to those set out in this Section 7. If any Change of Control of Codex occurs, Codex shall promptly notify Pfizer, share with Pfizer the policies and procedures it plans to implement in order to protect the confidentiality of Pfizer's Confidential Information prior to such implementation and make any adjustments to such policies and procedures that are reasonably requested by Pfizer.

8. REPRESENTATIONS, WARRANTIES AND COVENANTS.

8.1. Mutual Representations and Warranties. Each of Codex and Pfizer hereby represents and warrants to the other Party that:

8.1.1. it is duly organized, validly existing and in good standing under the laws of the jurisdiction of its organization;

8.1.2. the execution, delivery and performance of this Agreement by such Party has been duly authorized by all requisite action under the provisions of its charter, bylaws and other organizational documents, and does not require any action or approval by any of its shareholders or other holders of its voting securities or voting interests;

8.1.3. it has the power and authority to execute and deliver this Agreement and to perform its obligations hereunder;

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8.1.4. this Agreement has been duly executed and is a legal, valid and binding obligation on each Party, enforceable against such Party in accordance with its terms; and

8.1.5. the execution, delivery and performance by such Party of this Agreement and its compliance with the terms and provisions hereof does not and will not conflict with or result in a breach of or default under any Binding Obligation existing as of the Effective Date.

8.2. Mutual Covenants. Each of Codex and Pfizer hereby covenants to the other Party that, from the Effective Date until expiration or termination of this Agreement, it will perform its obligations under this Agreement in compliance with applicable Laws.

8.3. Representations and Warranties of Codex. As of the Effective Date, Codex hereby represents and warrants to Pfizer that:

8.3.1. the execution and delivery of this Agreement by Codex, and the consummation of the transactions contemplated hereby and thereby, do not require any material consent, waiver, authorization or approval of, or any notice to or other filing with, any Governmental Authority;

8.3.2. it is in compliance in all material respects with all Laws applicable to the ownership of the Initial Instrument and Initial Methods, including all manufacturing, development, marketing and regulatory filing and maintenance activities related to the Initial Instrument and Initial Methods to the extent necessary for Codex to perform those activities assigned to it under the Research Program;

8.3.3. [***];

8.3.4. it has and will have the full right, power and authority to grant all of the right, title and interest in the licenses and other rights granted or to be granted to Pfizer, Pfizer's Affiliates or Pfizer's Sublicensees under this Agreement;

8.3.5. (a) Exhibit A sets forth a true and complete list of all Codex Patent Rights as of the Effective Date, (b) each such Codex Patent Right is in full force and effect and (c) Codex or its Affiliates have timely paid all filing and renewal fees payable with respect to such Codex Patent Rights;

8.3.6. (a) the issued and pending Codex Patent Rights as of the Effective Date, are, or upon issuance, will be, valid and enforceable patents and (b) [***];

8.3.7. Codex, its Affiliates and Third Parties and Representatives acting on Codex's behalf in connection with this Agreement have complied with all applicable Laws, including any disclosure requirements, in connection with the filing, prosecution and maintenance of the Codex Patent Rights;

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8.3.8. Codex, its Affiliates, and to its knowledge, all Third Parties and Representatives acting on Codex's behalf, have and will comply in all material respects with all applicable Law and accepted pharmaceutical industry business practices, including, to the extent applicable, the FD&C Act (21 U.S.C. § 301, et seq.), the Anti-Kickback Statute (42 U.S.C. § 1320a-7b), Civil Monetary Penalty Statute (42 U.S.C. § 1320a-7a), the False Claims Act (31 U.S.C. § 3729 et seq.), comparable state statutes, the regulations promulgated under all such statutes, and the regulations issued by the FDA, consistent with the 'Compliance Program Guidance for Pharmaceutical Manufacturers' published by the Office of Inspector General, U.S. Department of Health and Human Services;

8.3.9. [***];

8.3.10. Codex, its Affiliates, and to its knowledge all Third Parties and Representatives acting on Codex's behalf, have and will continue to comply with the laws and regulations of the countries where it operates, including anti-bribery and anti-corruption laws, including, to the extent applicable, the U.S. Foreign Corrupt Practices Act of 1977 and the U.K. Bribery Act 2010, accounting and record keeping laws, and laws relating to interactions with healthcare professionals or healthcare providers and Government Officials;

8.3.11. [***];

8.3.12. [***];

8.3.13. no Codex Technology existing as of the Effective Date is subject to any funding agreement with any government or Governmental Authority;

8.3.14. [***];

8.3.15. there is no (a) claim, demand, suit, proceeding, arbitration, inquiry, investigation or other legal action of any nature, civil, criminal, regulatory or otherwise, pending or, to the best knowledge of Codex, threatened against Codex or any of its Affiliates or (b) judgment or settlement against or owed by Codex or any of its Affiliates, in each case with respect to the Codex Technology, the Current Licenses, or the Instrument, or the transactions contemplated by this Agreement;

8.3.16. [***];

8.3.17. there are no Current Licenses and no Third Party has any right, title or interest in or to, or any license under, any Codex Technology; and

8.3.18. the (a) conduct of the Research Plan by or on behalf of Codex, including the use of the Initial Instrument and Initial Methods in the conduct of the Research Plan, (b) use by or on behalf of Pfizer of the Initial Instruments and Initial Methods in the conduct

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of the Research Plan and (c) the use by Codex or the authorized use by Pfizer of the Deliverables, in each case ((a)-(c)), (x) does not and will not infringe any issued patent of any Third Party or (y) will not infringe the claims of any published Third Party patent application when and if such claims issue.

For purposes of this Section 8.3, "knowledge" means the actual knowledge of the individuals listed in Schedule 8.3, after consulting with their direct reports.

8.4. Codex Covenants. In addition to the covenants made by Codex elsewhere in this Agreement, Codex hereby covenants to Pfizer that, from the Effective Date until expiration or termination of this Agreement:

8.4.1. it shall not, and shall cause its Affiliates not to (a) exclusively license, sell, assign or otherwise transfer (other than in a connection with a permitted assignment of this Agreement by Codex pursuant to Section 12.1) to any Person (other than Pfizer or its Affiliates or Sublicensees pursuant to the terms of this Agreement) any Codex Technology (or agree to do any of the foregoing) or (b) incur or permit to exist, with respect to any Codex Technology, any lien, encumbrance, charge, security interest, mortgage, liability, assignment, grant of license or other Binding Obligation that is or would be inconsistent with the licenses and other rights granted to Pfizer or its Affiliates under this Agreement;

8.4.2. [***];

8.4.3. it will (a) not enter into any Codex Third Party Agreement that adversely affects (i) the rights granted to Pfizer, Pfizer's Affiliates or Sublicensees hereunder or (ii) Codex's ability to fully perform its obligations hereunder; (b) not amend or otherwise modify any Codex Third Party Agreement or consent or waive rights with respect thereto in any manner that (i) adversely affects the rights granted to Pfizer or Pfizer's Affiliates or Sublicensees hereunder or (ii) Codex's ability to fully perform its obligations hereunder; (c) promptly furnish Pfizer with true and complete copies of all Codex Third Party Agreements executed following the Effective Date and amendments thereto, in each case which may be redacted with respect to matters unrelated to the Agreement (including the rights and obligations hereunder); (d) remain, and cause its Affiliates to remain, in compliance in all material respects with all Codex Third Party Agreements; and (e) furnish Pfizer with copies of all notices received by Codex or its Affiliates of any alleged breach or default by Codex or its Affiliates under any Codex Third Party Agreement within five Business Days after receipt thereof;

8.4.4. it will not enter into or otherwise allow itself or its Affiliates to be subject to any agreement or arrangement which limits the ownership or licensed rights of Pfizer or its Affiliates with respect to, or limits the ability of Pfizer or its Affiliates to grant a license, sublicense or access, or provide or provide access or other rights in, to or under, any intellectual property right or material (including any Patent Right, Know-How or other data or information), in each case, that would, but for such agreement or arrangement, be

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included in the rights licensed or assigned to Pfizer or its Affiliates pursuant to this Agreement; and

8.4.5. [***].

8.4.6. [***]

8.5. Pfizer Covenants. In addition to the covenants made by Pfizer elsewhere in this Agreement, Pfizer hereby covenants to Codex that, from the Effective Date until expiration or termination of this Agreement:

8.5.1. [***]; and

8.5.2. [***].

8.6. Representation by Legal Counsel. Each Party hereto represents that it has been represented by legal counsel in connection with this Agreement and acknowledges that it has participated in the drafting hereof. In interpreting and applying the terms and provisions of this Agreement, the Parties agree that no presumption shall exist or be implied against the Party which drafted such terms and provisions.

8.7. Disclaimer. THE FOREGOING REPRESENTATIONS AND WARRANTIES OF EACH PARTY ARE IN LIEU OF ANY OTHER REPRESENTATIONS AND WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR ANY IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY SPECIFICALLY EXCLUDED AND DISCLAIMED.

9. TERM AND TERMINATION

9.1. Term. The term of this Agreement (the "Term") will commence on the Effective Date and expire upon the expiration of the last to expire Royalty Term, unless this Agreement is terminated earlier in accordance with this Section 9 or pursuant to Section 12.2.

9.2. Termination by Codex. Codex may terminate this Agreement for cause, at any time during the Term, by giving written notice to Pfizer in the event that Pfizer commits a material breach of its obligations under this Agreement and such material breach remains uncured for [***] days, measured from the date written notice of such material breach is given to Pfizer; provided, however, that if any breach is not reasonably curable within [***] days and if Pfizer is making a bona fide effort to cure such breach, such termination shall be delayed for a time period to be agreed by both Parties in order to permit Pfizer a reasonable period of time to cure such breach. If the alleged material breach relates to non-payment of any amount due under this Agreement, the cure period shall be tolled pending resolution of any bona fide dispute between the Parties as to whether such payment is due.

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9.3. Termination by Pfizer.

9.3.1. Termination for Convenience. Pfizer may (1) terminate this Agreement in its entirety without cause, for any or no reason, upon at least [***] days prior written notice to Codex or (2) it may terminate its exclusive license under Section 2.4 with respect to either Exclusive Field, without cause, for any or no reason, upon at least [***] days prior written notice to Codex.

9.3.2. Termination for Cause. Pfizer may terminate (1) this Agreement in its entirety for cause at any time during the Term or (2) its exclusive license under Section 2.4 with respect to either Exclusive Field, in each case ((1) and (2)), by giving written notice to Codex, in the event that Codex commits a material breach of its obligations under this Agreement and such material breach remains uncured for [***] days, measured from the date written notice of such material breach is given to Codex; provided, however, that if any breach is not reasonably curable within [***] days and if Codex is making a bona fide effort to cure such breach, such termination shall be delayed for a time period to be agreed by both Parties in order to permit Codex a reasonable period of time to cure such breach.

9.3.3. Termination for Global Trade Control Laws-related Breach. Notwithstanding anything to the contrary in this Agreement, Pfizer may terminate this Agreement in whole or relevant part, immediately and without regard to any cure period, if, in Pfizer's reasonable opinion, a violation of Global Trade Control Laws has occurred. Any such termination will be deemed for cause under Section 9.2 or 9.3.2, under which Pfizer will not be responsible for any related payments due, even if activities have already occurred. Codex will be responsible for reimbursing Pfizer for any payments due to Pfizer under this Agreement that are specifically blocked due to violation of Global Trade Control Laws.

9.3.4. Termination for Compliance with the Law-related Breach. Pfizer may terminate this Agreement pursuant to Section 9.3.2 if (a) Codex breaches any of its representations or warranties set forth in Sections 8.3.7 through 8.3.10, or if Pfizer learns that improper payments are being or have been made to Government Officials by Codex with respect to services performed in connection with this Agreement. Any such termination will be deemed for cause under Section 9.3.2, under which Pfizer will not be responsible for any related payments due, even if activities have already occurred.

9.4. Effects of Termination

9.4.1. Effect of Termination.

(a) Termination for Cause by Codex; Termination for Convenience by Pfizer.

(i) Complete Termination. In the event that Codex terminates this Agreement in its entirety for cause pursuant to Section 9.2 or Pfizer

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terminates this Agreement without cause pursuant to Section 9.3.1, except as otherwise expressly provided herein, all rights and obligations of each Party hereunder shall cease (including all rights and licenses and sublicenses granted by either Party to the other Party hereunder).

(ii) Partial Termination. In the event that Pfizer, pursuant to Section 9.3.1(2), terminates its exclusive license under Section 2.4 with respect to an Exclusive Field, the exclusive license with respect to such Exclusive Field will terminate as of the effective date of such termination and, at Pfizer's request, such Exclusive Field will become a Non-Exclusive Field subject to the non-exclusive license in Section 2.2 of this Agreement.

(b) Termination for Cause by Pfizer.

(i) Complete Termination.

(A) In the event that Pfizer terminates this Agreement in its entirety pursuant to Section 9.3.2, except as otherwise expressly provided herein, all other rights and obligations of each Party with respect to all Products throughout the Territory shall cease.

(B) [***].

(ii) Partial Termination.

(A) In the event that Pfizer, pursuant to Section 9.3.2(2), terminates its exclusive license under Section 2.4 with respect to an Exclusive Field, the exclusive license with respect to such Exclusive Field will terminate as of the effective date of such termination and, at Pfizer's request, such Exclusive Field will become a Non-Exclusive Field subject to the non-exclusive license in Section 2.2 of this Agreement.

(B) [***].

9.4.2. Accrued Rights. Expiration or termination of this Agreement for any reason shall be without prejudice to any right which shall have accrued to the benefit of either Party prior to such termination, including damages arising from any breach under this Agreement. Expiration or termination of this Agreement shall not relieve either Party from any obligation which is expressly indicated to survive such expiration or termination.

9.4.3. Survival. The following sections, together with any sections that expressly survive (including any perpetual licenses granted hereunder), shall survive

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expiration or termination of this Agreement for any reason: Sections 1 (Definitions and Interpretation), 2.5 (Unblocking License), 2.9 (No Implied Rights), 2.10 (Retained Rights), 3.9.4 (Record Keeping), 3.9.5 (Audits), 3.9.6 (Underpayments/Overpayments), 4.9.2 (Permitted Use of Pfizer Materials), 4.9.3 (Unauthorized Use of Pfizer Materials), 4.9.4 (Title to Pfizer Materials and Output Materials), 4.9.5 (Return of Pfizer Materials), 4.9.6 (Ownership of Pfizer Material Improvements and Output Materials), 4.9.7 (Activities), 4.9.8 (Confidentiality), 6.1 (Ownership of Intellectual Property), 7 (Confidentiality) (for the period set forth therein), 9.4 (Effects of Termination), 9.5 (Provision for Insolvency), 10.1 (No Consequential Damages), 10.2 (Indemnification by Pfizer), 10.3 (Indemnification by Codex), 10.4 (Procedure), and 12 (Miscellaneous).

9.5. Provision for Insolvency.

9.5.1. Termination Right. Codex shall be deemed a "Debtor" under this Agreement if, at any time during the Term (a) a case is commenced by or against Codex under the Bankruptcy Code, (b) Codex files for or is subject to the institution of bankruptcy, reorganization, liquidation or receivership proceedings (other than a case under the Bankruptcy Code), (c) Codex assigns all or substantially all of its assets for the benefit of creditors, (d) a receiver or custodian is appointed for Codex's business or (e) substantially all of Codex's business is subject to attachment or similar process; provided, however, that in the case of any involuntary case under the Bankruptcy Code, Codex shall not be deemed a Debtor if the case is dismissed within [***] days after the commencement thereof. If Codex is deemed a Debtor, then Pfizer may terminate this Agreement by providing written notice to Codex. If Pfizer terminates this Agreement pursuant to this Section 9.5.1, then (i) all licenses granted to Pfizer under this Agreement shall become irrevocable and perpetual, (ii) Pfizer shall have no further obligations to Codex under this Agreement other than [***].

9.5.2. Rights to Intellectual Property. All rights and licenses now or hereafter granted by Codex to Pfizer under or pursuant to any Section of this Agreement, including Sections 2.1.1, 2.2 and, following the exercise of an Option pursuant to Section 2.4.2, Section 2.4.3 hereof, are rights to "intellectual property" (as defined in the Bankruptcy Code). The Parties hereto acknowledge and agree that the payments provided for under Sections 3.1, 3.2, 3.3 and 3.4 and all other payments by Pfizer to Codex hereunder, other than royalty payments pursuant to Section 3.7, do not constitute royalties within the meaning of Section 365(n) of the Bankruptcy Code or relate to licenses of intellectual property hereunder. If (a) a case under the Bankruptcy Code is commenced by or against Codex, (b) this Agreement is rejected as provided in the Bankruptcy Code and (c) Pfizer elects to retain its rights hereunder as provided in Section 365(n) of the Bankruptcy Code, then Codex (in any capacity, including debtor-in-possession) and its successors and assigns (including any trustee) shall provide to Pfizer all intellectual property licensed hereunder, and agrees to grant and hereby grants to Pfizer and its Affiliates a right to access and to obtain possession of and to benefit from and, in the case of any chemical or biological material or other tangible item of which there is a fixed or limited quantity, to obtain a pro

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rata portion of, each of the following to the extent related to any Output Material or Product and the rights and licenses granted to Pfizer under or pursuant to this Agreement: (i) copies of pre-clinical and clinical research data and results; (ii) all of the following (to the extent that any of the following are so related): cell lines, antibodies, assays, reagents and other biological materials; (iii) Product samples; (iv) Codex Technology, (v) laboratory notes and notebooks; (vi) Product data or filings, and (vii) Rights of Reference in respect of regulatory filings and approvals, all of which constitute "embodiments" of intellectual property pursuant to Section 365(n) of the Bankruptcy Code, and (viii) all other embodiments of such intellectual property, whether any of the foregoing are in Codex's possession or control or in the possession and control of any Third Party but which Codex has the right to access or benefit from and to make available to Pfizer. Codex shall not interfere with the exercise by Pfizer or its Affiliates of rights and licenses to intellectual property licensed hereunder and embodiments thereof in accordance with this Agreement and agrees to use Commercially Reasonable Efforts to assist Pfizer and its Affiliates (at Pfizer's request) to obtain such intellectual property and embodiments thereof in the possession or control of Third Parties as reasonably necessary or desirable for Pfizer or its Affiliates or Sublicensees to exercise such Person's rights and licenses in accordance with this Agreement.

9.5.3. No Limitation of Rights. All rights, powers and remedies of Pfizer provided in this Section 9.5 are in addition to and not in substitution for any and all other rights, powers and remedies now or hereafter existing at Law or in equity (including the Bankruptcy Code) in the event of the commencement of a case under the Bankruptcy Code involving Codex.

10. LIMITATION ON LIABILITY, INDEMNIFICATION AND INSURANCE.

10.1. No Consequential Damages. Except with respect to liability arising from a breach of Section 6 or 7, a breach by Codex of Section Error! Reference source not found., from any willful misconduct or intentionally wrongful act, or to the extent such Party may be required to indemnify the other Party under this Section 10, in no event will either Party or its Representatives be liable under this Agreement for any special (only as related to indirect, incidental or consequential damages), indirect, incidental, consequential or punitive damages, whether in contract, warranty, tort, negligence, strict liability or otherwise, including loss of profits or revenue suffered by the other Party or any of its Representatives. Without limiting the generality of the foregoing, "consequential damages" will be deemed to include, and neither Party will be liable to the other Party or any of such other Party's Representatives or stockholders for any damages based on or measured by loss of projected or speculative future sales of the Products, any Milestone Payments due upon any unachieved Development Milestone under Section 3.3, any Sales Milestone Payment due upon any unachieved Sales Milestones under Section 3.4, any unearned royalties under Section 3.7 or any other unearned, speculative or otherwise contingent payments provided for in this Agreement. EXCEPT WITH RESPECT TO LIABILITY ARISING FROM A BREACH OF SECTION 6 OR 7, A BREACH BY CODEX OF SECTION Error! Reference source not found., FROM ANY WILLFUL MISCONDUCT OR INTENTIONALLY

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WRONGFUL ACT OR OMISSION, OR TO THE EXTENT SUCH PARTY MAY BE REQUIRED TO INDEMNIFY THE OTHER PARTY UNDER THIS SECTION 10, A PARTY'S AGGREGATE LIABILITY UNDER OR IN CONNECTION WITH THIS AGREEMENT FOR ANY CLAIM (INCLUDING RELATED LOSSES, COSTS OR DAMAGES OF ANY NATURE) IN A GIVEN CALENDAR YEAR SHALL NOT EXCEED [***].

10.2. Indemnification by Pfizer. Pfizer will indemnify, defend and hold harmless Codex, each of its Affiliates, and each of its and its Affiliates' employees, officers, directors and agents (each, a "Codex Indemnified Party") from and against any and all claims, causes, or allegations (whether threatened or pending), judgments, expenses, damages, liabilities, obligations, fees (including the reasonable fees of attorneys and other consulting or testifying professionals), costs and losses (collectively, "Liabilities") that the Codex Indemnified Party is required to pay to one or more Third Parties resulting from or arising out of:

10.2.1. the Development, Manufacture, Commercialization or use of any Product by, on behalf of, or under the authority of Pfizer, its Affiliates or Sublicensees (other than by any Codex Indemnified Party) except to the extent that such Liabilities arise from a claim that the practice of the Codex Technology infringes or misappropriates any issued patent or other proprietary right owned or possessed by any Third Party or any breach by Codex of any representations, warranties or covenants pursuant to this Agreement;

10.2.2. the material breach by Pfizer of any of its representations, warranties or covenants set forth in Section 8.1 or 8.2; or

10.2.3. the gross negligence, recklessness or intentional acts of Pfizer or any Pfizer Indemnified Party;

except, in each case, to the extent caused by the gross negligence, recklessness or intentionally wrongful acts of Codex or any Codex Indemnified Party.

10.3. Indemnification by Codex. Codex will indemnify, defend and hold harmless Pfizer, and each of its Affiliates, Sublicensees, permitted contractors, and distributors, and each of Pfizer's and their respective employees, officers, directors and agents (each, a "Pfizer Indemnified Party") from and against any and all Liabilities that the Pfizer Indemnified Party is required to pay to one or more Third Parties resulting from or arising out of:

10.3.1. the material breach by Codex of any of its representations, warranties or covenants set forth in Section 8.1, Section 8.2, Section 8.3 (except with respect to Section 8.3.18) or Section 8.4;

10.3.2. the breach by Codex of Section 8.3.18; or

10.3.3. the gross negligence, recklessness or intentional acts of Codex or any Codex Indemnified Party;

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except, in each case, to the extent caused by the gross negligence, recklessness or intentionally wrongful acts of Pfizer or any Pfizer Indemnified Party.

10.4. Procedure.

10.4.1. Notice. Each Party will notify the other Party in writing in the event it becomes aware of a claim for which indemnification may be sought hereunder. In the event that any Third Party asserts a claim or other proceeding (including any governmental investigation) with respect to any matter for which a Party (the "Indemnified Party") is entitled to indemnification hereunder (a "Third Party Claim"), then the Indemnified Party shall promptly notify the Party obligated to indemnify the Indemnified Party (the "Indemnifying Party") thereof; provided, however, that no delay on the part of the Indemnified Party in notifying the Indemnifying Party shall relieve the Indemnifying Party from any obligation hereunder unless (and then only to the extent that) the Indemnifying Party is prejudiced thereby.

10.4.2. Control. Subject to Pfizer's right to control any actions described in Section 6.3.3 (even where Codex is the Indemnifying Party), the Indemnifying Party shall have the right, exercisable by notice to the Indemnified Party within [***] after receipt of notice from the Indemnified Party of the commencement of or assertion of any Third Party Claim, to assume direction and control of the defense, litigation, settlement, appeal or other disposition of the Third Party Claim (including the right to settle the claim solely for monetary consideration) with counsel selected by the Indemnifying Party and reasonably acceptable to the Indemnified Party; provided that (a) the Indemnifying Party has sufficient financial resources, in the reasonable judgment of the Indemnified Party, to satisfy the amount of any adverse monetary judgment that is sought, (b) the Third Party Claim seeks solely monetary damages and (c) the Indemnifying Party expressly agrees in writing that as between the Indemnifying Party and the Indemnified Party, the Indemnifying Party shall be solely obligated to satisfy and discharge the Third Party Claim in full (the conditions set forth in clauses (a), (b) and (c) above are collectively referred to as the "Litigation Conditions"). Within [***] after the Indemnifying Party has given notice to the Indemnified Party of its exercise of its right to defend a Third Party Claim, the Indemnified Party shall give notice to the Indemnifying Party of any objection thereto based upon the Litigation Conditions. If the Indemnified Party reasonably so objects, the Indemnified Party shall continue to defend the Third Party Claim, at the expense of the Indemnifying Party, until such time as such objection is withdrawn. If no such notice is given, or if any such objection is withdrawn, the Indemnifying Party shall be entitled, at its sole cost and expense, to assume direction and control of such defense, with counsel selected by the Indemnifying Party and reasonably acceptable to the Indemnified Party. During such time as the Indemnifying Party is controlling the defense of such Third Party Claim, the Indemnified Party shall cooperate, and shall cause its Affiliates and agents to cooperate upon request of the Indemnifying Party, in the defense or prosecution of the Third Party Claim, including by furnishing such records, information and testimony and attending such conferences, discovery proceedings, hearings, trials or appeals as may reasonably be

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requested by the Indemnifying Party. In the event that the Indemnifying Party does not satisfy the Litigation Conditions or does not notify the Indemnified Party of the Indemnifying Party's intent to defend any Third Party Claim within ten Business Days after notice thereof, the Indemnified Party may (without further notice to the Indemnifying Party) undertake the defense thereof with counsel of its choice and at the Indemnifying Party's expense (including reasonable, out-of-pocket attorneys' fees and costs and expenses of enforcement or defense). The Indemnifying Party or the Indemnified Party, as the case may be, shall have the right to join in (including the right to conduct discovery, interview and examine witnesses and participate in all settlement conferences), but not control, at its own expense, the defense of any Third Party Claim that the other Party is defending as provided in this Agreement.

10.4.3. Settlement. The Indemnifying Party shall not, without the prior written consent of the Indemnified Party, enter into any compromise or settlement that commits the Indemnified Party to take, or to forbear to take, any action. The Indemnified Party shall have the sole and exclusive right to settle any Third Party Claim, on such terms and conditions as it deems reasonably appropriate, to the extent such Third Party Claim involves equitable or other non-monetary relief to be provided solely by the Indemnified Party, but shall not have the right to settle such Third Party Claim to the extent such Third Party Claim involves monetary damages without the prior written consent of the Indemnifying Party. Each of the Indemnifying Party and the Indemnified Party shall not make any admission of liability in respect of any Third Party Claim without the prior written consent of the other Party, and the Indemnified Party shall use reasonable efforts to mitigate Liabilities arising from such Third Party Claim.

10.5. Insurance. Each Party further agrees to obtain and maintain, during the Term, commercial general liability insurance, including products liability insurance, with reputable and financially secure insurance carriers to cover its indemnification obligations under Section 10.2 or Section 10.3, as applicable, in each case with limits of not less than [***] per occurrence and in the aggregate. Insurance shall be procured with carriers having an A.M. Best Rating of A-VII or better. Notwithstanding any provision of this Section 10.5 to the contrary, either Party may meet its obligations under this Section 10.5 through self-insurance at such described limits above. Neither Party's insurance will be construed to create a limit of liability with respect to its indemnification obligations under this Section 10.

11. ANTI-BRIBERY/ANTI-CORRUPTION.

11.1. Foreign Corrupt Practices Act. Codex will comply with the U.S. Foreign Corrupt Practices Act of 1977 (as may be amended or revised from time-to-time) and the principles relating thereto, as stated in Exhibit C to this Agreement, which is attached hereto and incorporated by reference herein.

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11.2. Representations and Warranties. Codex hereby represents and warrants that:

11.2.1. It is licensed, registered, or qualified under local law, regulations, policies, and administrative requirements to do business and, to the extent required by applicable Law, has obtained licenses or completed such registrations as may be necessary or required by Law to provide the goods or services encompassed within this Agreement (including, without limitation, Exhibit C);

11.2.2. It has not and will not directly or indirectly offer or pay, or authorize such offer or payment, of any money or anything of value to improperly or corruptly seek to influence any Government Official (as such term is defined under Exhibit C), and, if Codex is itself a Government Official, has not accepted, and will not accept in the future, such a payment; and

11.2.3. All information provided by Codex during Pfizer's pre-contractual due diligence, including all information provided in the "Third Party Entity Due Diligence Questionnaire," is complete, truthful and accurate.

11.2.4. It undertakes to update these representations or warranties if (during the Term) Codex becomes aware, or should have become aware, that Codex, or any of the employees or individuals who will be primarily responsible for performing under this Agreement, or a relative of such an employee or individual, becomes a Government Official or if a Governmental Authority or Government Official becomes an owner of Codex.

11.3. Audit by Pfizer. Codex shall permit, during the Term and for three years after final payment has been made under this Agreement, Pfizer's internal and external auditors' access to any relevant books, documents, papers, and records of Codex involving transactions or activities related to this Agreement.

12. MISCELLANEOUS.

12.1. Assignment. Neither this Agreement nor any interest hereunder shall be assignable by a Party without the prior written consent of the other Party, except as follows: (a) subject to the provisions of Section 12.2, as applicable, a Party may assign its rights and obligations under this Agreement by way of sale of itself or the sale of the portion of its business to which this Agreement relates, through merger, sale of assets and/or sale of stock or ownership interest, provided that the assignee shall expressly agree to be bound by such Party's obligations under this Agreement and that such sale is not primarily for the benefit of its creditors and (b) such Party may assign its rights and obligations under this Agreement to any of its Affiliates, provided that the assignee shall expressly agree to be bound by such Party's obligations under this Agreement and that such Party shall remain liable for all of its rights and obligations under this Agreement. In addition, Pfizer may assign its rights and obligations under this Agreement to a Third Party where Pfizer or its Affiliate is required, or makes a good faith determination based on advice of counsel, to divest a Product in order to comply with Law or the order of any Governmental Authority as a result of a Certain identified information marked with [***] has been excluded from this exhibit because it is not material and is of the type that the registrant treats as private and confidential.

merger or acquisition, provided that the assignee shall expressly agree to be bound by Pfizer's obligations under this Agreement. Each Party shall promptly notify the other Party of any assignment or transfer under the provisions of this Section 12.1. This Agreement shall be binding upon the successors and permitted assigns of the Parties and the name of a Party appearing herein shall be deemed to include the names of such Party's successors and permitted assigns to the extent necessary to carry out the intent of this Agreement. Any assignment not in accordance with this Section 12.1 shall be void.

12.2. Change of Control of Codex. Codex shall notify Pfizer in writing promptly (and in any event within [***]) following the entering into of a definitive agreement with respect to a Change of Control of Codex.

12.3. Further Actions. Each Party agrees to execute, acknowledge and deliver such further instruments, and to do all such other acts, as may be necessary or appropriate in order to carry out the express purposes and intent of this Agreement.

12.4. Force Majeure. Each Party shall be excused from the performance of its obligations under this Agreement to the extent that such performance is prevented by force majeure (defined below) and the nonperforming Party promptly provides notice of the prevention to the other Party. Such excuse shall be continued so long as the condition constituting force majeure continues and the nonperforming Party takes Commercially Reasonable Efforts to remove the condition. For purposes of this Agreement, "force majeure" shall include conditions beyond the control of the Parties, including an act of God, voluntary or involuntary compliance with any regulation, Law or order of any government, war, act of terror, civil commotion, labor strike or lock-out, epidemic, failure or default of public utilities or common carriers, destruction of production facilities or materials by fire, earthquake, storm or like catastrophe.

12.5. Notices. Any notice or notification required or permitted to be provided pursuant to the terms and conditions of this Agreement (including any notice of force majeure, breach, termination, change of address, etc.) shall be in writing and shall be deemed given upon receipt if delivered personally or by facsimile transmission (receipt verified), five days after deposited in the mail if mailed by registered or certified mail (return receipt requested) postage prepaid, or on the next Business Day if sent by overnight delivery using a nationally recognized express courier service and specifying next Business Day delivery (receipt verified), to the Parties at the following addresses or facsimile numbers (or at such other address or facsimile number for a Party as shall be specified by like notice, provided, however, that notices of a change of address shall be effective only upon receipt thereof):

All correspondence to Pfizer shall be addressed as follows:

Pfizer Inc.
Notices: R&D Business Development
235 East 42nd Street

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New York, NY 10017
Attn.: R&D BD Contract Notice

with a copy to:

Pfizer Inc.
Notices: Pfizer Legal Division
235 East 42nd Street
New York, NY 10017
Attn.: Chief Counsel, R&D
Fax: [***]

and electronic copies to:

[***]

All correspondence to Codex shall be addressed as follows:

CODEX DNA, Inc.
9535 Waples St, Suite 10
San Diego, CA 92121
Attention: Legal Department

12.6. Amendment. No amendment, modification or supplement of any provision of this Agreement shall be valid or effective unless made in writing and signed by a duly authorized officer of each Party.

12.7. Waiver. No provision of this Agreement shall be waived by any act, omission or knowledge of a Party or its agents or employees except by an instrument in writing expressly waiving such provision and signed by a duly authorized officer of the waiving Party. The waiver by either of the Parties of any breach of any provision hereof by the other Party shall not be construed to be a waiver of any succeeding breach of such provision or a waiver of the provision itself.

12.8. Severability. If any clause or portion thereof in this Agreement is for any reason held to be invalid, illegal or unenforceable, the same shall not affect any other portion of this Agreement, as it is the intent of the Parties that this Agreement shall be construed in such fashion as to maintain its existence, validity and enforceability to the greatest extent possible. In any such event, this Agreement shall be construed as if such clause of portion thereof had never been contained in this Agreement, and there shall be deemed substituted therefor such mutually agreed provision as will most nearly carry out the intent of the Parties as expressed in this Agreement to the fullest extent permitted by applicable Law.

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12.9. Descriptive Headings. The descriptive headings of this Agreement are for convenience only and shall be of no force or effect in construing or interpreting any of the provisions of this Agreement.

12.10. Global Trade Control Laws. The Parties acknowledge that certain activities covered by or performed under this Agreement may be subject to laws, regulations or orders regarding economic sanctions, import controls or export controls ("Global Trade Control Laws"). Each of the Parties will perform all activities under this Agreement in compliance with all applicable Global Trade Control Laws. Furthermore, with respect to the activities performed under this Agreement, each of the Parties represents, warrants and covenants that:

12.10.1. Each Party will not, for activities under this Agreement, (i) engage in any such activities in a Restricted Market; (ii) involve individuals ordinarily resident in a Restricted Market; or (iii) include companies, organizations, Governmental Authorities or Government Officials from or located in a Restricted Market. "Restricted Market" for purposes of this Agreement means the Crimean Peninsula, Cuba, the Donbass Region, Iran, North Korea, Sudan, and Syria, or any other country or region sanctioned by the United States or European Union.

12.10.2. Each Party represents and warrants that it is not a Restricted Party and is not owned or controlled by a Restricted Party. With respect to activities performed under this Agreement, neither Party will engage or delegate to any Restricted Parties for any activities under this Agreement. Each Party will screen all relevant Third Parties involved by such Party in the activities under this Agreement under the relevant Restricted Party Lists. "Restricted Parties" for purposes of this Agreement means any individual or entity on any of the following "Restricted Party Lists": the list of sanctioned entities maintained by the United Nations; the Specially Designated Nationals List and the Sectoral Sanctions Identifications List of the U.S. Treasury Department's Office of Foreign Assets Control; the U.S. Denied Persons List, the U.S. Entity List, and the U.S. Unverified List of the U.S. Department of Commerce; entities subject to restrictive measures and the Consolidated List of Persons, Groups and Entities Subject to E.U. Financial Sanctions, as implemented by the E.U. Common Foreign & Security Policy; the List of Excluded Individuals / Entities published by the U.S. Health and Human Services' Office of Inspector General; any lists of prohibited or debarred parties established under the U.S. Federal Food Drug and Cosmetic Act; the list of parties suspended or debarred from contracting with the U.S. government; and similar lists of restricted parties maintained by the Governmental Authorities of the countries that have jurisdiction over the activities conducted under this Agreement.

12.10.3. Neither Party will knowingly transfer to the other Party any goods, software, technology or services that are (i) controlled under the U.S. International Traffic in Arms Regulations or at a level other than EAR99 under the U.S. Export Administration Regulations; or (ii) specifically identified as an E.U. Dual Use Item or on an applicable export control list of another country.

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12.11. Export Control. This Agreement is made subject to any restrictions concerning the export of products or technical information from the United States of America or other countries which may be imposed upon or related to Codex or Pfizer from time to time. Each Party agrees that it will not export, directly or indirectly, any technical information acquired from the other Party under this Agreement or any products using such technical information to a location or in a manner that at the time of export requires an export license or other governmental approval, without first obtaining the written consent to do so from the appropriate agency or other governmental entity.

12.12. Dispute Resolution. If any dispute or disagreement arises between Pfizer and Codex in respect of this Agreement that is not within the scope of the JRC's decision-making authority as provided in Section 4.4 (all such disputes that are not within the scope of the JRC's decision-making authority would include disputes arising with respect to the interpretation, enforcement, termination or invalidity of this Agreement), they shall follow the following procedures in an attempt to resolve the dispute or disagreement:

12.12.1. The Party claiming that such a dispute exists shall give notice in writing ("Notice of Dispute") to the other Party of the nature of the dispute.

12.12.2. Within [***] of receipt of a Notice of Dispute, the Pfizer Program Director and the Codex Program Director shall meet in person or by teleconference and exchange written summaries reflecting, in reasonable detail, the nature and extent of the dispute, and at this meeting they shall use their reasonable endeavors to resolve the dispute.

12.12.3. If the Program Directors are unable to resolve the dispute during the meeting described in Section 12.12.2 or if for any reason such meeting does not take place within the period specified in Section 12.12.2, then the Chief Scientific Officer of Viral Vaccines Research of Pfizer and the Chief Executive Officer of Codex shall meet at a mutually agreed-upon time and location for the purpose of resolving such dispute.

12.12.4. If, within a further period of [***], or if in any event within [***] of initial receipt of the Notice of Dispute, the dispute has not been resolved, or if, for any reason, the meeting described in Section 12.12.3 has not been held within [***] of initial receipt of the Notice of Dispute, then the Parties agree that either Party may initiate litigation to resolve the dispute.

Notwithstanding any provision of this Agreement to the contrary, either Party may immediately initiate litigation in any court of competent jurisdiction seeking any remedy at law or in equity, including the issuance of a preliminary, temporary or permanent injunction, to preserve or enforce its rights under this Agreement. The provisions of this Section 12.12 will survive the termination or expiration of this Agreement.

12.13. Governing Law. This Agreement, and all claims arising under or in connection therewith, shall be governed by and interpreted in accordance with the substantive laws of the State of New York, without regard to conflict of law principles thereof.

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12.14. Consent to Jurisdiction. Each Party to this Agreement hereby (a) irrevocably submits to the exclusive jurisdiction of the state courts of the State of New York or the United States District Court for the Southern District of New York for the purpose of any and all actions, suits or proceedings arising in whole or in part out of, related to, based upon or in connection with this Agreement or the subject matter hereof, (b) waives to the extent not prohibited by applicable Law, and agrees not to assert, by way of motion, as a defense or otherwise, in any such action, any claim that it is not subject personally to the jurisdiction of the above-named courts, that its property is exempt or immune from attachment or execution, that any such action brought in one of the above-named courts should be dismissed on grounds of forum non conveniens, should be transferred to any court other than one of the above-named courts, or should be stayed by reason of the pendency of some other proceeding in any other court other than one of the above-named courts, or that this Agreement or the subject matter hereof may not be enforced in or by such court, and (c) agrees not to commence any such action other than before one of the above-named courts nor to make any motion or take any other action seeking or intending to cause the transfer or removal of any such action to any court other than one of the above-named courts whether on the grounds of inconvenient forum or otherwise.

12.15. Entire Agreement. This Agreement constitutes and contains the complete, final and exclusive understanding and agreement of the Parties and cancels and supersedes any and all prior negotiations, correspondence, understandings and agreements, whether oral or written, between the Parties respecting the subject matter hereof and thereof, including that certain Non-Disclosure Agreement between the Parties [***], which is hereby terminated effective as of the Effective Date, provided that all confidential or proprietary information exchanged between the Parties under such Non-Disclosure Agreement will be deemed to have been disclosed under this Agreement and shall be subject to the terms and conditions of this Agreement.

12.16. Independent Contractors. Both Parties are independent contractors under this Agreement. Nothing herein contained shall be deemed to create an employment, agency, joint venture or partnership relationship between the Parties hereto or any of their agents or employees, or any other legal arrangement that would impose liability upon one Party for the act or failure to act of the other Party. Neither Party shall have any express or implied power to enter into any contracts or commitments or to incur any liabilities in the name of, or on behalf of, the other Party, or to bind the other Party in any respect whatsoever.

12.17. Counterparts. This Agreement may be executed in two counterparts, each of which shall be an original and both of which shall constitute together the same document. Counterparts may be signed and delivered by facsimile or digital (e.g., PDF) file, each of which shall be binding when received by the applicable Party.

12.18. No Third Party Rights or Obligations. No provision of this Agreement shall be deemed or construed in any way to result in the creation of any rights or obligation in any Person not a Party to this Agreement. However, Pfizer may decide, in its sole discretion, to use one or more of its Affiliates to perform its obligations and duties hereunder, provided that Pfizer shall remain liable hereunder for the performance by any such Affiliates of any such obligations.

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(Signature page follows.)

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IN WITNESS WHEREOF, an authorized representative of each Party duly executed this Agreement as of the Effective Date to be effective as of the Effective Date.

PFIZER INC.	CODEX DNA, Inc.
By___[***]_____	By_[***]____
Name: Title:	Name: Title:

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Exhibit A
Codex Patent Rights Existing as of the Effective Date

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Exhibit 10.21

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Exhibit B

Research Plan

- [***].

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Exhibit C

Pfizer Anti-Bribery and Anti-Corruption Principles

Pfizer has a longstanding corporate policy that prohibits colleagues or anyone acting on our behalf from providing any payment or benefit to any person or entity in order to improperly influence a government official or to gain an unfair business advantage. Pfizer is committed to performing with integrity, and acting ethically and legally in accordance with all applicable laws and regulations, including, but not limited to, anti-bribery and anti-corruption laws. We expect the same commitment from the consultants, agents, representatives or other companies and individuals acting on our behalf ("Business Associates"), as well as those acting on behalf of Business Associates, in connection with work for Pfizer.

Bribery of Government Officials

Most countries have laws that forbid making, offering or promising any payment or anything of value (directly or indirectly) to a government official when the payment is intended to influence an official act or decision to award or retain business. Under Pfizer's policies,

"government official" is broadly interpreted and includes:(i) any elected or appointed government official (e.g., a member of a ministry of health); (ii) any employee or person acting for or on behalf of a government official, agency, or enterprise performing a governmental function; (iii) any political party, candidate for public office, officer, employee, or person acting for or on behalf of a political party or candidate for public office; or (iv) an employee or person acting for or on behalf of a public international organization (e.g., the United Nations). "Government" is meant to include all levels and subdivisions of governments (i.e., local, regional, or national and administrative, legislative, or executive). Because this definition of "government official" is so broad, it is likely that Business Associates will interact with a government official in the ordinary course of their business on behalf of Pfizer. For example, doctors employed by government-owned hospitals would be considered "government officials" under Pfizer's policies.

The U.S. Foreign Corrupt Practices Act of 1977 (the "FCPA") prohibits making, promising, or authorizing the making of a payment or providing anything of value to a non-U.S. government official to improperly or corruptly induce that official to make any governmental act or decision to assist a company in obtaining or retaining business, or to otherwise obtain an improper advantage. The FCPA also prohibits a company or person from using another company or individual to engage in any of the foregoing activities. As a U.S. company, Pfizer must comply with the FCPA and could be held liable as a result of acts committed anywhere in the world by a Business Associate.

Anti-Bribery and Anti-Corruption Principles Governing Interactions with Governments and Government Officials

Business Associates must communicate and abide by the following principles with regard to their interactions with governments and government officials:

- Business Associates, and those acting on their behalf in connection with work for Pfizer, may not directly or indirectly make, promise, or authorize the making of a corrupt payment or provide anything of value to any government official to induce that government official to make any governmental act or decision to help Pfizer obtain or retain business. Business Associates, and those acting on their behalf in connection with work for Pfizer, may never make a payment to or offer a government official any item or benefit, regardless of value, as an improper inducement for such government official to approve, reimburse, prescribe, or purchase a Pfizer product, to influence the outcome of a clinical trial, or otherwise improperly to benefit Pfizer's business activities.

- Business Associates, and those acting on their behalf in connection with work for Pfizer, need to understand whether local laws, regulations, or operating procedures (including requirements imposed by government entities such as government-owned hospitals or research institutions) impose any limits, restrictions, or disclosure requirements on compensation, financial support, donations, or gifts that may be provided to government officials. Business Associates, and those acting on their behalf in connection with work for Pfizer, must take into account and comply with any applicable restrictions in conducting their Pfizer-related activities. If a Business Associate is uncertain as to the meaning or applicability of any identified

limits, restrictions, or disclosure requirements with respect to interactions with government officials, that Business Associate should consult with his or her primary Pfizer contact before undertaking their activities.

- Business Associates, and those acting on their behalf in connection with work for Pfizer, are not permitted to offer facilitation payments. A "facilitation payment" is a nominal, unofficial payment to a government official for the purpose of securing or expediting the performance of a routine, non-discretionary governmental action. Examples of facilitation payments include payments to expedite the processing of licenses, permits or visas for which all paperwork is in order. In the event that a Business Associate, or someone acting on their behalf in connection with work for Pfizer, receives or becomes aware of a request or demand for facilitation payment or bribe in connection with work for Pfizer, the Business Associate shall report such request or demand promptly to his or her primary Pfizer contact before taking any further action.

Commercial Bribery

Bribery and corruption can also occur in non-government, business to business relationships. Most countries have laws which prohibit offering, promising, giving, requesting, receiving, accepting, or agreeing to accept money or anything of value in exchange for an improper business advantage. Examples of prohibited conduct could include, but are not limited to, the provision of inappropriate gifts or hospitality, kickbacks, or investment opportunities offered to improperly induce the purchase of goods or services. Pfizer colleagues are not permitted to offer, give, solicit or accept bribes, and we expect our Business Associates, and those acting on their behalf in connection with work for Pfizer, to abide by the same principles.

Anti-Bribery and Anti-Corruption Principles Governing Interactions with Private Parties and Pfizer Colleagues

Business Associates, and those acting on their behalf in connection with work for Pfizer, may not directly or indirectly make, promise, or authorize the making of a corrupt payment or provide anything of value to any person to induce that person to provide an unlawful business advantage for Pfizer.

- Business Associates, and those acting on their behalf in connection with work for Pfizer, may not directly or indirectly make, promise, or authorize the making of a corrupt payment or provide anything of value to any person to induce that person to provide an unlawful business advantage for Pfizer.

- Business Associates, and those acting on their behalf in connection with work for Pfizer, may not directly or indirectly, solicit, agree to accept or receive a payment or anything of value as an improper inducement in connection with their business activities performed for Pfizer.

Pfizer colleagues are not permitted to receive gifts, services, perks, entertainment, or other items of more than token or nominal monetary value from Business Associates, and those acting

on their behalf in connection with work for Pfizer. Moreover, gifts of nominal value are only permitted if they are received on an infrequent basis and only at appropriate occasions.

Reporting Suspected or Actual Violations

Business Associates, and those acting on their behalf in connection with work for Pfizer, are expected to raise concerns related to potential violations of these International Anti-Bribery and Anti-Corruption Principles or the law. Such reports can be made to a Business Associate's primary point of contact at Pfizer, or if a Business Associate prefers, to Pfizer's Compliance Group by e-mail at corporate.compliance@pfizer.com or by phone at 1-212-733-3026.

Certain identified information marked with [***] has been excluded from this exhibit because it is not material and is of the type that the registrant treats as private and confidential.

Exhibit 10.21

Schedule 3.7

Sample Royalty Calculation

[***]

Certain identified information marked with [***] has been excluded from this exhibit because it is not material and is of the type that the registrant treats as private and confidential.

Exhibit 10.21

Schedule 7.5.1

Press Release

[***]

Certain identified information marked with [***] has been excluded from this exhibit because it is not material and is of the type that the registrant treats as private and confidential.

Exhibit 10.21

Schedule 8.3

[***] [***]

Certain identified information marked with [***] has been excluded from this exhibit because it is not material and is of the type that the registrant treats as private and confidential.

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statement on Form S-8 (No. 333-257191) of Codex DNA, Inc. of our report dated March 23, 2022, relating to the consolidated financial statements, which appears in this Annual Report on Form 10-K.

/s/ WithumSmith+Brown, PC

San Francisco, California
March 23, 2022

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statement on Form S8 (File No. 333-257191) of our report dated March 16, 2021 (June 14, 2021, as to the effects of the reverse stock split discussed in Note 18) relating to the consolidated financial statements of Codex DNA, Inc. for the year ended December 31, 2020, which appears in this Annual Report on Form 10-K.

/s/ OUM & CO. LLP

San Francisco, California
March 23, 2022

Exhibit 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
Pursuant to
Securities Exchange Act Rules 13a-14(a) and 15d-14(a),
As Adopted Pursuant to
Section 302 of the Sarbanes-Oxley Act of 2002

I, Todd Nelson, certify that:

1. I have reviewed this Annual Report on Form 10-K of Codex DNA, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a–15(f) and 15d–15(f)) for the registrant and have:

a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Todd Nelson

Todd Nelson
President, Chief Executive Officer and Director
(Principal Executive Officer)

Date: March 23, 2022

Exhibit 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
Pursuant to
Securities Exchange Act Rules 13a-14(a) and 15d-14(a),
As Adopted Pursuant to
Section 302 of the Sarbanes-Oxley Act of 2002

I, Jennifer McNealey, certify that:

1. I have reviewed this Annual Report on Form 10-K of Codex DNA, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a–15(f) and 15d–15(f)) for the registrant and have:

a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Jennifer McNealey

Jennifer McNealey
Chief Financial Officer
(Principal Financial Officer)

Date: March 23, 2022

Exhibit 32.1

CERTIFICATIONS OF CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL OFFICER
PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Codex DNA, Inc. (the "Company") on Form 10-K for the year ended December 31, 2021, as filed with the Securities and Exchange Commission (the "Report"), Todd Nelson, as Chief Executive Officer of the Company, and Jennifer McNealey, as Chief Financial Officer of the Company, each hereby certifies, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. Section 1350), to his or her knowledge:

1.The Report, fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act of 1934, as amended; and

2.The information contained in the Periodic Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Todd Nelson

Todd Nelson
President, Chief Executive Officer and Director
(Principal Executive Officer)

Date: March 23, 2022

/s/ Jennifer McNealey

Jennifer McNealey
Chief Financial Officer
(Principal Financial Officer)

Date: March 23, 2022

This certification accompanies the Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of Codex DNA, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-K), irrespective of any general incorporation language contained in such filing.