CODEXIS INC
Form 10-K
February 10, 2011
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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, 2010

¨ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from _____ to _____.

Commission File No.: 001-34705

Codexis, Inc.

(Exact name of Registrant as specified in its charter)

Delaware	**71-0872999**
(State or other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**

200 Penobscot Drive, Redwood City, California	**94063**
(Address of Principal Executive Offices)	(Zip Code)

Registrant s telephone number, including area code: **(650) 421-8100**

Securities Registered Pursuant to Section 12(b) of the Act:

Title of Each Class:	**Name of Each Exchange on which Registered:**
Common Stock, par value $0.0001 per share	The 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 ¨ 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 ¨

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 (§ 229.405 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 ¨ No ¨

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant s knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form10-K. ¨

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	¨

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 common stock held by non-affiliates of Codexis as of June 30, 2010 was approximately $222.8 million based upon the closing price reported for such date on the NASDAQ Global Select Market. For purposes of this disclosure, shares of common stock held by executive officers and directors of Codexis and by each person who owned 10% or more of the outstanding common stock on June 30, 2010 have been excluded because such persons may be deemed to be affiliates of Codexis. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of February 8, 2011, there were 35,079,147 shares of the registrant s Common Stock, par value $0.0001 per share, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant s Definitive Proxy Statement to be filed with the Commission pursuant to Regulation 14A in connection with the registrant s 2011 Annual Meeting of Stockholders, to be filed subsequent to the date hereof, are incorporated by reference into Part III of this Report. Such Definitive Proxy Statement will be filed with the Securities and Exchange Commission not later than 120 days after the conclusion of the registrant s fiscal year ended December 31, 2010. Except with respect to information specifically incorporated by reference in this Form 10-K, the Proxy Statement is not deemed to be filed as part of this Form 10-K.

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Codexis, Inc.

Annual Report on Form 10-K

For The Year Ended December 31, 2010

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

The following discussion and analysis should be read in conjunction with our audited consolidated financial statements and the related notes that appear elsewhere in this Annual Report on Form 10-K. This Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, particularly in Part I, Item 1: Business, Part I, Item 1A: Risk Factors and Part 2, Item 7: Management s Discussion and Analysis of Financial Condition and Results of Operations. These statements are often identified by the use of words such as may, will, expect, believe, anticipate, intend, could, should, estimate, similar expressions or variations. All statements other than statements of historical fact could be deemed forward-looking, including, but not limited to: any projections of financial information; any statements about historical results that may suggest trends for our business; any statements of the plans, strategies, and objectives of management for future operations; any statements of expectation or belief regarding future events, technology developments, our products, product sales, expenses, liquidity, cash flow, growth rates or enforceability of our intellectual property rights and related litigation expenses; and any statements of assumptions underlying any of the foregoing. Such forward-looking statements are subject to risks, uncertainties and other factors that could cause actual results and the timing of certain events to differ materially from future results expressed or implied by such forward-looking statements. Accordingly, we caution you not to place undue reliance on these statements. For Codexis, particular uncertainties that could affect future results include: our ability to achieve or maintain profitability; our relationships with and dependence on collaborators in our principal markets; our dependence on Shell for the development and commercialization of biofuels; the feasibility of producing and commercializing biofuels derived from cellulose; our dependence on a limited number of customers; our dependence on a limited number of products in our pharmaceutical business; our dependence on a limited number of contract manufacturers of our biocatalysts and suppliers for our pharmaceutical intermediates and APIs; our ability to manage our growth; our pharmaceutical customers abilities to incorporate our biocatalysts into their manufacturing processes; the outcomes of clinical trials conducted by our innovator customers; the variability of our pharmaceutical gross margins; our ability to develop and successfully commercialize new products for the pharmaceuticals market; potential legal claims related to the sale of our pharmaceutical products; the effect of consolidation in the pharmaceutical industry on demand for our products; our ability to commercialize our technology in other bioindustrial markets; our ability to maintain license rights for commercial scale expression systems for cellulases; fluctuations in the price of and demand for petroleum-based fuels; the availability of non-food renewable cellulosic biomass sources; reductions or changes to existing fuel regulations and policies; the existence of government subsidies or regulation with respect to carbon dioxide emissions; our ability to obtain and maintain governmental grants; risks associated with the international aspects of our business; our ability to integrate any businesses we may acquire with our business; potential issues related to our ability to accurately report our financial results in a timely manner; our dependence on, and the need to attract and retain, key management and other personnel; our ability to obtain, protect and enforce our intellectual property rights; our ability to prevent the theft or misappropriation of our biocatalysts, the genes that code for our biocatalysts, know-how or technologies; potential advantages that our competitors and potential competitors may have in securing funding or developing products; our ability to obtain additional capital that may be necessary to expand our business; business interruptions such as earthquakes and other natural disasters; public concerns about the ethical, legal and social ramifications of genetically engineered products and processes; our ability to comply with laws and regulations; our ability to properly handle and dispose of hazardous materials used in our business; potential product liability claims; and our ability to use our net operating loss carryforwards to offset future taxable income. For a discussion of some of the factors that could cause actual results to differ materially from our forward-looking statements, see the discussion on risk factors that appear in Part I, Item 1A: Risk Factors of this Annual Report on Form 10-K and other risks and uncertainties detailed in this and our other reports and filings with the Securities and Exchange Commission, or SEC. The forward-looking statements in this Annual Report on Form 10-K represent our

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views as of the date of this Annual Report on Form 10-K. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except to the extent required by applicable law. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this Annual Report on Form 10-K.

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PART I

ITEM 1. BUSINESS

Company Overview

Our proprietary technology platform enables the creation of optimized biocatalysts that make existing industrial processes faster, cleaner and more efficient than current methods and has the potential to make new industrial processes possible at commercial scale. We have commercialized our biocatalysts in the pharmaceutical industry and are developing biocatalysts for use in producing advanced biofuels under a multi-year research and development collaboration with Shell. We are also using our technology platform to pursue biocatalyst-enabled solutions in other bioindustrial markets, including carbon management, chemicals and water treatment.

Biocatalysts are enzymes or microbes that initiate or accelerate chemical reactions. Manufacturers have historically used naturally occurring biocatalysts to produce many goods used in everyday life. However, inherent limitations in naturally occurring biocatalysts have restricted their commercial use. Our proprietary technology platform is able to overcome many of these limitations, allowing us to evolve and optimize biocatalysts to perform specific and desired chemical reactions at commercial scale.

We have focused our biocatalyst development efforts on large and rapidly growing markets, including pharmaceuticals and advanced biofuels. We have enabled biocatalyst-based drug manufacturing processes at commercial scale and have delivered biocatalysts, intermediates and active pharmaceutical ingredients, or APIs, to some of the world s leading pharmaceutical companies, including Dr. Reddy s Laboratories Ltd., Merck & Co., Inc., Pfizer Inc. and Ranbaxy Laboratories Limited. In our collaboration with Shell, we are developing biocatalysts for use in producing advanced biofuels from renewable sources of non-food plant materials, known as cellulosic biomass.

We were incorporated in Delaware in January 2002 as a wholly-owned subsidiary of Maxygen, Inc. We commenced independent operations in March 2002, after licensing from Maxygen core enabling technology. In October 2010, we acquired the core enabling technology intellectual property portfolio from Maxygen. As of December 31, 2010, Maxygen beneficially owned approximately 1.5% of our common stock. Our other investors include industry leaders such as Shell, Chevron Corporation, Pfizer and The General Electric Company.

Biocatalyst Opportunity

Biocatalyst-enabled manufacturing processes may address a number of the drawbacks of conventional chemistry-based manufacturing. For example, unlike most chemistry-based manufacturing processes, biocatalysts can operate at or near room temperature and pressure, and often use manufacturing equipment that is less complex and expensive to build and operate. Biocatalyst-enabled processes can create products with the same or higher quality as chemistry-based manufacturing processes, while reducing risks associated with extreme manufacturing environments and without generating the high volumes of waste, some of it hazardous to health and the environment, typically associated with conventional chemistry-based manufacturing processes.

In addition, due to concerns about the environment and the scarcity and security of supply of petroleum, there is an increasing interest in using cellulosic biomass as non-petroleum-based feedstocks for a variety of products, including advanced biofuels and other chemicals. To date, conventional chemistry-based manufacturing approaches have not resulted in commercially viable processes for the conversion of cellulosic biomass to biofuels and other products. Biocatalysts have the potential to enable processes for the development of products, such as cellulose-derived biofuels.

Despite their potentially significant advantages, biocatalysts have not achieved their full potential in industrial applications. Naturally occurring biocatalysts are often not stable enough to be used in industrial settings, where conditions may differ significantly from those in the biocatalysts natural environments.

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The activity and productivity of these biocatalysts is often too limited to be cost-effective in commercial scale manufacturing. In addition, the activity of natural biocatalysts is typically inhibited by the end product of the reactions they facilitate. This characteristic of natural biocatalysts, which is referred to as product inhibition, results in limited product yields in industrial settings. Moreover, for certain industrial applications, there are no known naturally occurring biocatalysts that catalyze the desired reaction.

Due to these limitations, other companies and researchers have tried to improve the performance of naturally occurring biocatalysts by directing their evolution through biotechnology techniques such as the random mutation of genes. However, to date, these techniques have had only limited success for a number of reasons. For example, random mutations of genes often result in decreased, not improved, performance and these alternative biotechnology techniques cannot effectively remove accumulated detrimental mutations. The end result is often an evolved biocatalyst with activity that reaches a plateau at a level that is insufficient for a commercial process. We believe there is a significant opportunity for novel technologies that can address the limitations of other biotechnology techniques and can substantially enhance the performance of biocatalysts in industrial settings.

Our Platform Technology

We believe that our proprietary technology platform can transform the industrial application of biocatalysts by improving their commercially relevant characteristics, such as stability, activity, product yield and tolerance to industrial conditions, while reducing product inhibition. In addition, our technology platform allows us to develop and optimize biocatalysts much more rapidly than is currently possible with alternative methods. Perhaps most importantly, we have demonstrated that our technology platform can enable the manufacture of products cost-effectively, at commercial scale and with significantly reduced environmental impact relative to conventional manufacturing processes.

Our proprietary technology platform uses advanced biotechnology methods, bioinformatics and years of accumulated know-how to significantly expedite the process of developing optimized biocatalysts. Key components of our technology platform include gene shuffling, whole genome shuffling, multiplexed gene SOEing, and proprietary bioinformatic software tools that allow us to identify and quantify the potential value of beneficial mutations and avoid detrimental mutations. We use our proprietary technology platform in combination with the tools of synthetic biology and other disciplines, such as genomics, transcritomics, proteomics and metabolomix, to design and construct microbes with new biological components, systems, and functions that do not exist in the natural world.

Application in Pharmaceuticals

In the pharmaceutical market, our technology platform has significantly improved commercial scale drug manufacturing processes. Our customers have benefited from our processes and products through:

- reduced costs, including capital and operating costs;
- simplified production processes;
- decreased environmental impact; and
- increased efficiency and product yield.

For example, we have used our technology platform to develop a biocatalyst capable of manufacturing sitagliptin, the API in Merck s pharmaceutical product, Januvia. Januvia, Merck s first-in-class medication for the treatment of Type II diabetes, is a fast growing drug, with sales of Januvia and Janumet, a related combination product, beginning in 2007 and growing to $3.3 billion in 2010. Merck s current manufacturing process uses high pressure, which requires the use of expensive, specialized equipment. In collaboration with Merck, we developed a new process that runs at atmospheric pressure and provides increased production capacity in current equipment, avoiding the need to invest more in expensive high pressure equipment for capacity expansion. Initially, we did not find any naturally occurring biocatalyst

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that effected the desired reaction. By applying our proprietary technology, we created a biocatalyst with very slight activity for the reaction, and within ten months of the commencement of the program, we had optimized a biocatalyst that achieved all of Merck s initial technical targets, produced substantially higher quality material, eliminated the need for several intermediate reaction and purification steps, and improved product yields. We have supplied Merck with quantities of the biocatalyst suitable to operate the process at commercial scale. Based on these results, we believe that Merck will seek regulatory approval to use our process to manufacture sitagliptin. If Merck obtains regulatory approval to use our process, we anticipate that Merck will use our biocatalyst to manufacture sitagliptin for Januvia and Janumet. Together with Merck, we received a Presidential Green Chemistry Challenge Award in 2010 from the United States Environmental Protection Agency for the development of our biocatalytic manufacturing process for sitagliptin. Our development of the sitagliptin manufacturing process was published in the journal *Science* in June 2010.

Application in Biofuels and Other Bioindustrial Markets

We are also using our technology platform to develop biocatalysts for use in producing advanced biofuels that currently cannot be manufactured cost-effectively at commercial scale. Advanced biofuels are liquid transportation fuels derived from non-food biomass and which meet certain minimum carbon reduction criteria. As part of our research and development collaboration with Shell, we have used our technology platform to:

- improve our cellulase biocatalysts to increase their production of fermentable sugars from cellulosic biomass;
- enable our cellulase biocatalysts to operate in a wider range of operating conditions;
- develop a microbe that converts sugar to diesel fuel, which is secreted out of the cell; and
- develop an ethanol-producing yeast that provides higher output rates and yields of ethanol from fermentable sugars from cellulosic biomass.

We are also using our technology platform to develop biocatalysts to optimize the process for removing carbon dioxide from flue gases in coal-fired energy generation plants, which we refer to as our carbon program. As part of this effort, in December 2009, we entered into an exclusive joint development agreement with CO_2 Solution Inc., or CO_2 Solution, under which we are collaborating to develop proprietary enzymatic methods for the efficient capture of carbon dioxide from coal-fired power plants and other major sources of carbon dioxide emissions. Our biocatalysts improve the effectiveness of a range of solvents, including amine solvents, which are one of the leading potential technologies to remove carbon dioxide from flue gas. In the laboratory, these biocatalysts have exhibited increased tolerance for flue stack-type operating conditions, though not yet at target commercial levels. Our carbon program made several advances in 2010, including receipt of a $4.7 million grant from the U.S. Department of Energy, or DOE, and the beginning of a three-way collaboration with Alstom Power Inc., or Alstom, and CO_2 Solution to develop technology to reduce carbon dioxide pollution from power plants. We also intend to use our technology platform to pursue biocatalyst solutions in other bioindustrial markets, including chemicals and water treatment.

Our Business Model

Our business model allows us to simultaneously pursue multiple commercial opportunities across a number of major markets. Our business model has resulted in a diversified revenue stream that is predictable over the near term and has a significant growth potential, while allowing us to share risk with and leverage the capabilities of our collaborators. Our business model includes the following key elements:

Targeting Multiple Major and Growing Markets. We currently use our technology platform to produce biocatalysts that are used at commercial scale in the pharmaceutical market. Through our collaboration with Shell, we are developing biocatalysts for use in producing commercially viable biofuels

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from cellulosic biomass. We also believe that we can use our technology platform to deliver biocatalyst-enabled solutions to other bioindustrial markets, including carbon management, chemicals and water treatment.

Capital-Efficient Collaborations with Industry Leaders. We have adopted a business model that leverages our collaborators engineering, manufacturing and commercial expertise, their distribution infrastructure and their ability to fund commercial scale production facilities. For instance, in the pharmaceuticals market, our supply relationship with Arch enables us to bring intermediates and/or APIs for branded pharmaceutical products to market with very limited additional capital. In addition, if we are able to develop biocatalysts that enable the commercial production of biofuels derived from cellulosic biomass and Shell decides to commercialize products based on this technology, we would rely on Shell, or other parties selected by Shell, to design and build the commercial scale fuel production facilities and to distribute the final fuel product. Our research collaboration with Alstom in carbon management allows us to benefit from Alstom s research facilities to demonstrate our technology and from Alstom s significant market presence and experience in the power-generation marketplace.

Diversified Revenue Base. We are generating a revenue stream that is diversified across distinct industries, which should mitigate our exposure to cyclical downturns or fluctuations in any one market. In 2010, our revenues were derived primarily from the pharmaceuticals and biofuels markets, and consisted primarily of collaborative research and development revenues and product sales. We are pursuing biocatalyst-enabled solutions in other bioindustrial markets, including carbon management, chemicals and water treatment, that, if successful, will allow us to further diversify our revenues.

Visible and Predictable Revenues. Based on our existing arrangements, we believe that the revenues from both our biofuels and pharmaceutical businesses should be predictable over the near term. We receive bi-monthly payments from Shell that are based on the number of funded FTEs that work on our research collaboration with Shell. The number of funded FTEs that work on the program, and the payments from Shell for these FTEs, are specified in our collaborative research agreement, subject to Shell s ability to increase or reduce the number of FTEs under certain conditions over time. Because we allow our pharmaceutical customers to achieve significant cost savings in their manufacturing processes, historically they have continued using our biocatalysts once they have begun using our biocatalyst-enabled process.

Our Strategy

Our objective is to be the leading provider of optimized biocatalyst-enabled solutions across a wide range of industries. Key elements of our strategy are as follows:

Become a leading biocatalyst supplier to the advanced biofuels market. Our primary development efforts are focused on producing biocatalysts that can enable Shell to become a global leader in the advanced biofuels market. We continue to build upon our milestone-driven, multi-year collaboration with Shell as we advance our efforts to produce biofuels from cellulosic biomass cost-effectively at commercial scale. Because of our success to date, Shell has expanded our research and development collaboration twice, which we believe positions us to be a key contributor to their overall biofuels strategy.

Expand into new bioindustrial markets. We are actively pursuing opportunities in other bioindustrial markets, including carbon management, chemicals and water treatment. For example, in our carbon program in 2010, we received a $4.7 million DOE grant and entered into a three-way collaboration with Alstom and CO_2 Solution. We have the right to use the intellectual property developed in our collaboration with Shell in fields outside of fuels and related products. We intend to leverage this and other intellectual property and our technology platform to develop products in our other target markets.

Continue growing our pharmaceutical business. We intend to pursue new collaborations in the pharmaceutical industry to integrate our products and services more deeply into drug development and manufacturing processes for clinical stage and commercially approved pharmaceutical products. As part of

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that effort, we will continue to aggressively market our Codex® Biocatalyst Panels and our recently launched Codex Biocatalyst Kits to pharmaceutical companies to demonstrate the capabilities of our technology platform.

Establish enzyme production capacity. We intend to pursue the establishment of large-scale enzyme production capacity for our bioindustrial markets. We are evaluating whether to invest in a new facility, to enter into production capacity arrangements or to lease or acquire a pre-existing facility. Such a facility could be used to produce larger quantities of enzymes for our biofuels, carbon capture, chemicals and water treatment markets.

Expand our business and technology platform through the addition of new technologies, products or businesses. In the past, we have expanded our business by acquiring or investing in companies with synergistic business plans and licensing new technology. We will continue to evaluate opportunities to acquire, invest in or license new technologies, products or businesses that complement or expand our capabilities, including in the carbon management, water treatment and chemical markets. In addition, we intend to continue to advance our technology platform by investing in our research and development capabilities to allow us to more rapidly identify and develop products and pursue new market opportunities.

Our Pharmaceutical Business

Our Opportunity in the Pharmaceutical Market

The pharmaceutical industry represents a significant market opportunity for us. Pharmaceutical companies are now under significant competitive pressure both to reduce costs and increase the speed to market for their products. To meet these pressures, they are seeking manufacturing processes for their new products and existing drugs that reduce overall costs, simplify production and increase efficiency and product yield, while not affecting drug safety and efficacy. In addition, for products whose patents have expired, the importance of cost reduction is even higher, as the pharmaceutical manufacturers which had developed those patent-protected drugs, known as innovators, compete with generics manufacturers.

The pharmaceutical product lifecycle begins with the discovery of new chemical entities and continues through preclinical and clinical development, product launch and, ultimately, patent expiration and the transition from branded to generic products. As innovators develop, produce and then market products, manufacturing priorities and processes evolve. Historically, innovators have focused on production cost reduction in the later stages of clinical development but have been reluctant to make process changes after a product has been launched. However, as pressures to reduce costs have increased, innovators have pursued cost reduction measures much earlier in the pharmaceutical product lifecycle and are increasingly looking for opportunities to improve their operating margins, including making manufacturing process changes for marketed products if these changes can result in significant cost reductions. As a result, innovators are investing in new technologies to improve their manufacturing productivity and efficiency or outsourcing the manufacture of their intermediates and APIs.

Our Solution for the Pharmaceutical Market

Our technology platform enables us to deliver solutions to our customers in the pharmaceutical market by developing and delivering optimized biocatalysts that perform chemical transformations at a lower cost, and improve the efficiency and productivity of manufacturing processes. We provide value throughout the pharmaceutical product lifecycle. Our technology platform allows us to provide benefits to our customers in a number of ways, including:

- reducing the use of raw materials and intermediate products;
- improving product yield;

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using water as a primary solvent;

performing reactions at or near room temperature and pressure;

eliminating the need for certain costly manufacturing equipment;

reducing energy requirements;

reducing the need for late-stage purification steps;

eliminating multiple steps in the manufacturing process; and

eliminating hazardous inputs and harmful emission by-products.

Early in the product lifecycle, customers can use our products and services to achieve speed to market and to reduce manufacturing costs. If an innovator incorporates our products or processes into an FDA-approved product, we expect the innovator to continue to use these products or processes for the patent life of the approved drug.

After a product is launched, customers also use our products and services to reduce manufacturing costs. At this stage, changes in the manufacturing process originally approved by the FDA may require additional review. Typically, pharmaceutical companies will only seek FDA approval for a manufacturing change if there are substantial cost savings associated with the change. We believe that the cost savings associated with our products may lead our customers to change their manufacturing processes for approved products and, if necessary, seek FDA approval of the new processes which incorporate our biocatalysts. Moreover, we believe these cost savings are attractive to generics manufacturers, who compete primarily on price.

Products and Services

Codex Biocatalyst Panels and Kits. We sell Codex Biocatalyst Panels and Kits to customers who are engaged in both drug development and the marketing of approved drugs to allow them to screen and identify possible biocatalytic manufacturing processes for their drug candidates and their marketed products. Our Codex Biocatalyst Panels are tools that provide genetically diverse variants of our proprietary biocatalysts, which allow our customers to determine whether a biocatalyst produces a desired activity that is applicable to a particular process. Our Codex Biocatalyst Kits provide subsets of the Panel biocatalysts in individual vials for the same purpose.

For compounds that are in development, our Codex Biocatalyst Panels and Kits:

allow innovators to rapidly and inexpensively screen and identify possible biocatalytic manufacturing processes for many of their drug candidates in-house, without the risks of disclosing the composition of their proprietary molecules before they have received patent protection; and

generate data that we can use to rapidly optimize biocatalysts for a particular reaction, if necessary, reducing the time required to generate a manufacturing process capable of supporting clinical trials with inexpensively produced, pure drugs.

We believe that our Codex Biocatalyst Panels and Kits have helped us build early and broad awareness of the power and utility of our technology platform, and will increasingly lead to sales of our biocatalyst optimization services and biocatalysts, as well as intermediates and APIs made using our biocatalysts. We currently have customers for our panels and kits, including leading pharmaceutical companies such as F. Hoffman-La Roche Ltd., GlaxoSmithKline plc, Merck, Novartis and Pfizer. If our customers incorporate a biocatalytic manufacturing process early in a product s lifecycle, they can reduce their manufacturing costs throughout that lifecycle, while we, in turn, could realize a long term

revenue stream resulting from the use of our biocatalysts during that time. In addition, our Codex Biocatalyst Panels and Kits are increasingly used by our customers to evaluate the feasibility of changing the manufacturing process for their marketed products to a biocatalyst-enabled process.

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Biocatalyst screening services. If a customer prefers, rather than subscribing to our Codex Biocatalyst Panels or Kits to use for their own screening, they can send us their materials to test against our existing libraries of biocatalysts. If we detect desired activity in a specific biocatalyst, we can supply the customer with this biocatalyst or perform optimization services to improve the performance of the biocatalyst.

Our screening services:

- allow innovators to rapidly and inexpensively screen and identify possible biocatalytic manufacturing processes through access to our extensive biocatalyst libraries; and
- generate data that we can use to rapidly optimize biocatalysts for a particular reaction, if necessary, reducing the time required to generate a manufacturing process capable of supporting the customers particular needs, ranging from small quantities for clinical trials to full commercial production, in all cases providing inexpensively produced, pure drugs.

We have provided screening services to numerous innovator and generic pharmaceutical manufacturers.

Biocatalyst optimization services. We work with our customers throughout the pharmaceutical product lifecycle to customize proprietary biocatalysts, resulting in optimized biocatalysts that have been evolved specifically to perform a desired process according to a highly selective set of specifications.

Our biocatalyst optimization services:

- allow innovators to improve the manufacturing process as their drug candidates progress through preclinical and clinical development, deferring or reducing the need for significant manufacturing investment until the likelihood of commercial success is more certain; and
- enable manufacturing processes that are highly efficient, inexpensive, require relatively little energy, reduce the need for hazardous reagents, and reduce waste. For example, our activities with Pfizer have included developing an optimized biocatalytic manufacturing process for a key intermediate that eliminates three chemical steps.

Biocatalysts. We supply varying quantities of our proprietary biocatalysts to pharmaceutical companies, from small to moderate quantities while they are optimizing their production processes, to larger quantities during later-stage clinical development and commercial scale drug production.

Our biocatalysts:

- enable innovators to manufacture products more efficiently during preclinical and clinical development using optimized biocatalytic processes, with relatively low investment;
- eliminate the need for innovators to invest in the development of complex chemical synthesis routes during the development stage;
- allow innovators to achieve higher product purity during the development stage prior to investing in expensive late-stage clinical trials;
- reduce the risk of adverse effects arising from product impurities;

allow the removal of entire steps from synthetic chemical production routes during commercial scale production, reducing raw material costs, energy requirements and the need for capital expenditures; and

decrease the manufacturing costs for our customers.

For instance, as a part of our ongoing collaboration with Merck, we have developed a biocatalyst for use in a new manufacturing process for sitagliptin, the API in Merck s pharmaceutical product Januvia.

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Januvia is Merck s first-in-class medication for the treatment of Type II diabetes. We expect to enter into a commercial enzyme supply arrangement to outsource the production of the biocatalyst used to manufacture sitagliptin, upon regulatory approval of our biocatalytic process.

We have also entered into agreements with several leading contract manufacturing organizations, including DSM, Dishman Pharmaceuticals and Chemicals, Ltd., and AMPAC, under which these CMOs can use our biocatalysts in their manufacturing processes.

Intermediates and APIs. We can supply our customers with intermediates and APIs made using our biocatalysts throughout the drug lifecycle.

Our supply of intermediates has the following uses and benefits:

- lowers capital investment for innovators through outsourcing of manufacturing; and
- provides a source of less expensive, more pure products to innovator and generics manufacturers.

In the innovator market, we are currently supplying Pfizer with an intermediate in the manufacture of Lipitor, a cholesterol-lowering drug that is the world s best-selling prescription drug. We also supply a key intermediate for boceprevir, which is Merck s promising hepatitis C drug candidate. We have also developed biocatalysts for use in the manufacture of certain generic intermediates and APIs by various companies, including Arch and Teva Pharmaceutical Industries Ltd., or Teva. In addition, we market several intermediates and APIs for the generic equivalents of branded pharmaceutical products for sale in markets where innovators have not sought patent protection for their products and intend to sell these same intermediates and APIs for use in markets where innovators have sought patent protection when the patent protection for each product expires.

Our Biofuels Business

Industry Overview Need to Diversify Liquid Fuel Supply Beyond Petroleum

The world s economy is heavily dependent on petroleum. However, economic, political and environmental concerns surrounding petroleum have increased the desire to find renewable alternatives to this limited commodity.

Increasing demand for petroleum. While the United States, Europe and Japan have historically been the major consumers of petroleum, developing economies such as India and China are experiencing tremendous levels of economic growth. In 2008, China and India alone saw GDP growth rates estimated at 9.0% and 7.4%, respectively. This economic growth has created new sources of demand for petroleum, with China and India s combined share growing from 10% of the world s total energy consumption in 1990 to 19% in 2006 and forecasted to grow to 28% of the world s energy consumption by 2030.

Dependence on imported petroleum. According to the U.S. Energy Information Administration, or EIA, in 2008, the top five net oil exporting countries in the world were Saudi Arabia, Russia, the United Arab Emirates, Iran and Kuwait. The political and economic instability in some of these countries and their surrounding regions adds further uncertainty to the supply of oil. As a result, countries that have been net importers of oil are beginning to pursue approaches that provide for greater independence from these suppliers.

Expense of developing new petroleum reserves. The cost to replace known reserves is increasing significantly. Petroleum companies have developed fields in the deep waters of the Gulf of Mexico and in the tar sands in Canada that previously would have not been economically attractive to exploit.

Rising and volatile petroleum prices. According to the EIA, worldwide petroleum prices in dollars have risen 213% and fluctuated significantly over the last ten years, from $25.01 per barrel

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at the beginning of December 1999, to $78.39 per barrel at the start of December 2009. In addition to rising prices, petroleum pricing has been highly volatile with significant price spikes over time, including prices reaching a record high of $145.31 per barrel in July 2008.

Limited supply of petroleum. Growth in demand for petroleum has outpaced growth in supply. The supply growth has come mostly from non-OPEC producing countries. However, this growth is expected to flatten. While OPEC producing countries may have the reserves, political instability in these regions has hindered their ability to increase production levels.

Environmental concerns and regulatory initiatives. Environmental concerns over the by-products of petroleum consumption, including greenhouse gas emissions, and petroleum production have led to a global search for alternative solutions to the world s growing fuel needs. For example, the oil spill in the Gulf of Mexico in 2010 raised concerns about deep-water exploration for petroleum.

Industry Challenges and Opportunities

According to the EIA, global petroleum demand in 2008 was 86 million barrels per day. Historically, 25% of this demand has been refined into liquid transportation fuels for use in automobiles. There is a significant opportunity to diversify liquid fuel supply beyond petroleum with high-quality, energy-rich fuels produced through biocatalyst-enabled transformation of renewable cellulosic biomass sources.

A portion of the demand for biofuels will be driven by public policy. In 2007, the U.S. Congress passed the Energy Independence and Security Act of 2007, amending the 2005 Renewable Fuels Standard to prioritize development of advanced biofuels and significantly displace U.S. petroleum consumption. The revised mandate, known as RFS2, requires 36 billion gallons of renewable fuel to be introduced into commerce in the U.S. by 2022 and limits corn starch ethanol to just 15 billion gallons. The law introduces a greenhouse gas emissions element, requiring eligible fuels to meet certain reductions in GHGs, compared to the petroleum they displace, to qualify. RFS2 also sets specific mandates for certain types of fuel, requiring 1 billion gallons of biomass-based diesel annually beginning in 2012 and increasing levels of cellulosic biofuels between 2010 and 2022. The cellulosic biofuel standard, which aims to achieve 16 billion gallons by 2022, is subject to administrative reduction in any year in which the U.S. Environmental Protection Agency (EPA) projects that actual production of cellulosic biofuels will fall short of the statutory mandate. For 2011, EPA reduced the cellulosic biofuels requirement from 250 million gallons to 6.6 million gallons. If EPA reduces the cellulosic biofuels requirement, it must make available a waiver credit for gasoline and diesel fuel refiners and importers that are still unable to meet their revised annual compliance obligations. This waiver credit is designed to provide a limited compliance mechanism in the event of actual production shortfalls, while encouraging cellulosic biofuel production. The formula for establishing the waiver credit price is set by law, requiring EPA to offer credits at the higher of 25 cents per gallon or the amount by which $3.00 per gallon exceeds the average wholesale price of a gallon of gasoline in the U.S. For 2011, the cellulosic waiver credit price is set at $1.13 per gallon.

The number of types of biofuels has grown over time. First generation biofuels manufacturers use biocatalysts to produce biofuels from food-based biomass and plant oils, such as ethanol and biodiesel. Many companies are now working to make fuels from cellulosic biomass rather than from food-based biomass. Cellulosic biomass is found in virtually all land plant material, including sustainable non-food crops such as switch grass and wood chips, and agricultural plant wastes such as corn stover and sugar cane bagasse. Cellulosic biomass is comprised of, among other things, cellulose and hemicellulose, which are long chains of six and five carbon sugars, respectively, that are linked together. To access these sugars, biofuels producers typically utilize heat and chemicals to pretreat these cellulosic materials through a variety of processes that expose the hemicellulose and cellulose. Once exposed, these long chains can be broken down into individual sugar units which can be transformed into fuels.

While fuels produced from cellulosic biomass would represent significant advances over first generation biofuels, there have been several challenges in their development. These challenges include

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converting cellulose and hemicellulose into sugar, which is a more complicated process than converting corn starch and sugar cane into sugar. In addition, biomass sources vary greatly by plant species and geographic region. One of the challenges of advanced biofuels is developing a technology that can convert the great variety of biomass sources found throughout the world to fermentable sugars. Moreover, the yeast that are currently used to convert corn starch and sugar cane into ethanol typically are not capable of converting the different types of sugars that are produced from cellulosic biomass into ethanol. Solving these challenges will require cellulosic biofuels manufacturers to develop innovative, robust biocatalysts that will have greater product yield and be more cost-effective, and will react quickly and continually under industrial conditions. To date, no companies have successfully done this economically and at commercial scale.

Our Solutions for the Biofuels Market

We believe that our technology platform will enable the development of biocatalysts that can be used to produce commercially viable, cellulose-derived biofuel alternatives to petroleum-based fuels. Since 2006, we have been engaged with Shell in a research and development collaboration under which we are developing biocatalysts for use in producing advanced biofuels. Our advanced biofuels program focuses on two primary elements: (1) developing biocatalysts to convert cellulosic biomass into sugars; and (2) converting these sugars into two advanced biofuels, cellulosic ethanol and biohydrocarbon diesel. For the first element, we have used our technology platform to improve our cellulase and other biocatalysts. For the second element, we have developed a biocatalyst that converts sugars to diesel fuel, and are working to develop an ethanol-producing yeast that provides higher rates and yields of ethanol from fermentable sugars from cellulosic biomass. We are using our technology platform to develop biocatalysts that we believe will:

increase the rate at which cellulosic biomass is converted into biofuels;

increase the yield of biofuels produced from cellulosic biomass;

substantially reduce the need to use food resources for the production of biofuels;

provide producers with more flexibility in designing processes to convert cellulosic biomass to biofuels, thereby reducing the costs associated with building and operating biofuel production facilities; and

enable the production of new types of cellulosic biofuels that could be alternatives to petroleum-based fuels.

Under our research and development collaboration with Shell, Shell will have the right, but not the obligation, to commercialize any technology that we develop in our biofuels program. If Shell commercializes our biofuels technology, we will collect a royalty for every gallon of fuel that Shell produces using our technology. If Shell chooses to commercialize any biofuels products developed through our collaboration, we believe that the combination of our technology platform with Shell s proven product development capabilities and resources could enable a biofuels solution that extends from the conversion of cellulosic biomass into biofuels to delivery and distribution of refined biofuels to consumers at the pump.

Sugar Platform

As part of our biofuels research and development collaboration with Shell, we are using our technology platform to develop a suite of cellulases and other biocatalysts to convert cellulosic biomass to sugar, which we sometimes refer to as our sugar platform. One of the goals of our sugar platform is to improve the performance and operational range of cellulases and other biocatalysts so that they cost-effectively function in industrial conditions. For example, we have developed several of our cellulase biocatalysts that now function at temperature and acidity levels that we believe are close to commercial production targets. The benefit of increasing the operational range of the cellulases is to provide maximum

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flexibility in the design and function of the facility that is used to produce cellulose-derived sugars, thus decreasing the costs of production and lowering the cost of the end product to make it competitive with petroleum-based fuels.

Another goal of our sugar platform is to increase the rate and extent of conversion of cellulosic biomass to fermentable sugars. The more rapidly and efficiently that biocatalysts convert cellulose and hemicellulose to sugars, the less expensive the biomass conversion process will be to operate. We are developing our biocatalysts to produce more sugar per unit volume. We believe faster sugar production from our biocatalysts will lower capital costs and production costs and result in lower-cost sugar to convert to an end fuel product.

We are developing a library of cellulases that have the potential to convert a wide variety of cellulosic biomass sources into fermentable sugars. The cellulosic biomass that we expect will be used to produce advanced biofuels is highly variable from region to region and can change over time. To optimize the local and seasonal conversion of biomass to fermentable sugars, we expect to use technology similar to our Codex Biocatalyst Panel of cellulases that Shell can use to customize the biocatalysts that they use at each advanced biofuel production facility. This technical innovation may ultimately make our sugar platform feedstock agnostic. For example, based on our lab work, we believe that our cellulases have the potential to convert sugar cane bagasse or wheat straw to fermentable sugars. In addition, we licensed a commercial-scale enzyme production system from Dyadic in 2008 that we expect will enable the cost-effective production of the high-performing biocatalysts that we are developing for Shell. We believe that the combination of our high-performing cellulases and other biocatalysts, the feedstock flexibility that we expect our Codex Biocatalyst Panels will provide, plus the ability to produce these biocatalysts cost-effectively at commercial scale will enable us to develop a scalable, global sugar platform that will provide a competitive advantage in the advanced biofuels market.

Cellulosic Ethanol

The goal of our cellulosic ethanol program is to develop commercial yeast that rapidly produce high levels of ethanol from cellulose-derived sugars. Cellulosic biomass produces a mix of several types of sugars, including glucose, xylose and arabinose. Glucose is the main type of sugar in the mix and it is readily converted to ethanol by fermentation using commercial yeast. Xylose is another significant component of the mix but is not converted to ethanol by the yeast currently used in today s first generation ethanol production. Therefore, it is important to develop yeast that can rapidly convert not only glucose but also xylose and other sugars into ethanol. The yeast that is developed must be sufficiently robust so that it can produce ethanol in the presence of a variety of chemical compounds that have been shown to directly inhibit yeast.

Using a number of our core technologies, including whole genome shuffling and cellular engineering, we are working with a variety of industrial and laboratory yeast strains to develop a yeast strain that rapidly converts more of these sugars to ethanol under a range of industrial conditions, which should result in greater ethanol production and lower capital and ethanol production costs. Based on this lab work, if the market opportunity presents itself, we believe that our technology platform can also be used to transform first generation yeast, which is currently used to convert sugars to ethanol at commercial scale.

Diesel Blend Stock

We have made significant advancements in our biohydrocarbon diesel fuel program, which is focused on converting cellulose-derived sugar into a fungible diesel blending stock. We also believe that diesel fuel will be able to be produced from cane sugar using our biocatalysts. Based on our testing to date, our biocatalysts rapidly produce high quantities of fuel product per unit volume, which has the potential to reduce production costs and increase the efficiency and productivity of the biohydrocarbon manufacturing process. Our biohydrocarbon program has several additional advantages that could lower the production

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costs of diesel fuel. Our diesel-producing microbe secretes the diesel molecule from the cell, which then separates from the media in which the cell lives and grows. As a result, our production system can be run continuously without having to stop fuel production to harvest the fuel and purify the fuel product. We believe that many other comparable diesel-producing systems must isolate the fuel-producing cells, break-open the cells to release the fuel and purify the fuel from the resulting mixture, which significantly increase production costs for the end fuel product.

We expect that the diesel blend stock fuel that we develop will be compatible with the existing transportation infrastructure, including distribution systems. A new fuel that works in existing engines and fuel production and distribution systems will not require additional investment in infrastructure to deploy this new technology. As discussed above, we believe that the diesel blend stock fuel that we develop will be capable of being blended in conventional petrochemical refineries that are widely used across the globe. This production flexibility should reduce structural barriers to adoption of the molecule as a wide-spread petroleum alternative.

Additional Bioindustrial Opportunities

We believe that our technology platform, together with the knowledge and experience gained from our efforts in the pharmaceutical market and in our biofuels development program, will allow us to capitalize on opportunities in other bioindustrial markets, including carbon management, chemicals and water treatment. Depending on the market, we may pursue collaborations with industry leaders to allow us to leverage their competitive strengths and resources in pursuit of these opportunities.

Carbon Management

From 1906 to 2005, global surface temperature increased 0.74 ± 0.18 degrees Celsius. In 2007, the Intergovernmental Panel on Climate Change concluded that most of this temperature increase was due to increasing concentrations of greenhouse gases, including carbon dioxide, which resulted from human activity. The consensus of the world scientific community is that continued climate change during this century will harm the global environment in unpredictable and potentially catastrophic ways. While a number of critics contest these conclusions, the global pressure to reduce carbon dioxide emissions is dramatic and increasing. Emissions continue to rise, even as the global demand for regulation grows. According to the EIA, the global emission level of carbon dioxide is projected to rise from 29 billion metric tons in 2006 to 33 billion metric tons in 2015 and 40 billion metric tons in 2030. Of the approximately seven billion tons of carbon dioxide equivalents emitted by the United States each year, approximately 40% is produced by the electric power industry. Furthermore, the share of global carbon dioxide emissions by the electric power industry could potentially increase in the future as growing demand for power increases alongside a growing population. By 2030, the EIA estimates, China and India will account for 34% of the world s carbon dioxide emissions, driven largely by their use of coal in generating electricity. The need for a viable method to manage these growing carbon dioxide emissions represents a significant opportunity.

In the carbon management market, we are seeking to apply our technology platform to the management of carbon dioxide emissions from stationary point sources such as coal-fired power plants. As part of this effort, in December 2009, we entered into an exclusive joint development agreement with CO_2 Solution under which we will combine our biocatalyst-enabled technology platform with CO_2 Solution s proprietary enzymatic methods for the efficient capture of carbon dioxide from coal-fired power plants and other large sources of carbon dioxide emissions. We believe our biocatalysts have the potential to enhance the effectiveness of CO_2 Solution s carbon capture processes in harsh industrial conditions. We extended our joint development agreement with CO2 Solution in January 2011.

We added two sources of funding for our carbon program in 2010. In June 2010, we received a $4.7 million ARPA-E Recovery Act program grant from the U.S. Department of Energy for development of

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innovative technology to remove carbon dioxide from coal-fired power plant emissions. The grant supports development of biocatalysts for more efficient carbon capture from these plants. In December 2010, we entered into a Collaboration Agreement with CO2 Solution and Alstom to develop technology to reduce carbon dioxide pollution from power plants. Under the Collaboration Agreement, the parties agreed to work exclusively with each other over a period of up to 16 months on a pilot phase program to develop and test customized biocatalysts and related processes using specified solvents for use in power plants to reduce greenhouse gas emissions. Alstom will fund research activities for the program, which may be extended if milestones are met. Alstom can terminate the Collaboration Agreement under certain conditions before the 16-month term expires. If the Collaboration Agreement terminates before the 16-month term expires, the parties may continue to work together on an exclusive basis in the same field using different solvents under the terms of a related Memorandum of Understanding.

To further our efforts in the carbon management market, we have filed provisional patent applications relating to biocatalysts that we believe may optimize the process of removing carbon dioxide from flue gases. These biocatalysts improve the effectiveness of amine and other leading solvents that remove carbon dioxide from flue gas. A major drawback of amine and other leading solvent technologies is the additional parasitic energy required to operate them. Based on initial models, we believe that our biocatalysts may reduce this parasitic energy loss by up to 35%. In the laboratory, these biocatalysts have also exhibited increased tolerance for flue stack-type operating conditions, though not yet at target commercial levels. Although our research is in its early stages, we believe that it may be possible to cost-effectively utilize biocatalyst-enabled solutions to separate carbon dioxide from other exhaust gases and direct them to separate sequestration mechanisms.

Chemicals

There are also significant market opportunities in the chemical industry for companies that can help reduce or eliminate petroleum dependency, as well as costly and wasteful manufacturing processes. For example, according to the EIA, in 2008, approximately 214 million barrels of petroleum were used in petrochemical feedstocks.

We believe that the sugar platform that we are developing in our biofuels collaboration with Shell may enable us to produce fermentable sugars that are derived from cellulosic biomass to serve as an alternate source of carbon for use in the manufacture of many chemicals. This potential market may provide an opportunity to leverage our funded work with Shell into a separate business in the non-fuels chemicals industry. Our license agreement with Shell permits us to use technology developed for Shell outside of the field of fuels and lubricants. To further accelerate our chemicals opportunities, we acquired the core enabling technology intellectual property portfolio from Maxygen in October 2010. This acquisition enables us to pursue application of our directed evolution technology platform in all fields of use, including chemicals, subject to preexisting licenses that Maxygen has previously granted.

Our technology platform can also be applied to develop biocatalysts for the conversion of renewable feedstocks, rather than petroleum-derived hydrocarbons, into commercially important chemicals. For example, the technology that we are developing with Shell can also be applied to develop renewable detergent alcohols. Detergent alcohols constitute a 2 million metric ton global market of which a large majority is used in consumer products. Over half the global demand for detergent alcohols is in household detergents, including laundry liquids and powders, dish-washing liquids, and hard-surface cleaners. Approximately 20% of the detergent alcohol market is in personal care products comprising shampoos, soap, shower gels and related products, and the remaining 25% of the market consists of industrial and institutional cleaners and other smaller applications.

Consumer products companies that use detergent alcohols are concerned about sustainability and price volatility. Approximately 75% of the global detergent alcohol capacity is derived from the conversion of natural oils and fats, such as palm kernel, palm and coconut oils; the remaining 25% is produced

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synthetically from petroleum. The natural oils and fats route can lead to concerns of deforestation due to the rapid expansion of palm oil plantations to meet growing demand. The synthetic route uses petroleum- based, CO_2-intensive chemical processes. There are sustainability concerns for both current sources of detergent alcohols. In addition, there is a correlation between fluctuating crude oil prices and vegetable oil prices, which results in unpredictable costs and volatile margins for consumer products companies that formulate these alcohols into final products. We believe that our renewable detergent alcohols can address concerns of both sustainability and price volatility.

Water Treatment

Water treatment is another example of a potential major market opportunity for novel biocatalyst-enabled solutions. According to a United Nations study published in March 2007, approximately 80% of all diseases in the developing world are caused by unsafe water and poor sanitation. In addition, industrial manufacturing operations and municipal water usage generate large quantities of waste water, which must be treated in order to avoid contamination of our fresh water resources and our oceans. There are many sources and types of water pollution, and when different types of pollution mix together it presents complex and challenging remediation problems downstream.

The market for biocatalysts in water treatment is in a very early stage of development. However, new interest in biocatalyst-enabled solutions in water treatment has been sparked in part by concerns about possible contamination of drinking water from industrial and other sources. For example, a U.S. government report released in 2006 examined the potential of biocatalysts in the treatment of groundwater and drinking water in both civilian and military applications. The report concluded that biocatalyst- embedded water filters held significant promise for the treatment of agents, pesticides, or other chemical contaminants in drinking water systems, as well as for the decontamination of pipes and other equipment with contaminant residue. We believe that there are also opportunities for biocatalyst-enabled solutions to treat municipal wastewater streams.

Strategic Collaborations

Our strategic collaborations allow us to expand into new markets and to service our existing customers, while operating our business with maximum capital efficiency. By collaborating with companies such as Arch and Shell, we are able to leverage both our technology platform and our collaborators strengths in production and distribution. This allows us to focus our capital on key areas such as research and development.

Arch

We are collaborating with Arch Pharmalabs Limited, or Arch, of Mumbai, India in the manufacture and sale of certain specified APIs, and intermediates used in the manufacture of APIs, such as the API in Lipitor, that are produced using biocatalysts that we supply to Arch. Arch has extensive expertise in chemical process development and scale-up, and is a leading producer of intermediates and generic APIs in India.

We were previously party to agreements with Arch pursuant to which Arch manufactured and supplied ATS-8, which is a key intermediate used in the production of atorvastatin, for us and on our behalf, and under which we paid Arch a percentage of the profits we earned on our sales of ATS-8. In August 2008, with the exception of the Master Services Agreement with Arch entered into as of August 1, 2006, we simultaneously terminated all of our existing agreements with Arch and entered into a series of new agreements with Arch, significantly expanding the relationship between the parties. In February 2010, we consolidated and modified certain of the contractual terms in our agreements with Arch by simultaneously terminating all of our existing agreements with Arch, other than the Master Services Agreement with Arch entered into as of August 1, 2006, and entering into two new agreements with Arch. These new agreements are a product supply agreement and an enzyme and product supply agreement,

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which we refer to as the Arch Agreements. Under the terms of the Arch Agreements, we supply certain biocatalysts to Arch for use in the manufacture of certain APIs, and intermediates used in the manufacture of APIs, all of which we refer to as the Collaboration Products. We granted Arch the exclusive right to use these biocatalysts to manufacture the Collaboration Products with certain specified exceptions. Arch has the exclusive right to manufacture and supply the Collaboration Products for us and on our behalf and we have agreed to purchase such Collaboration Products exclusively from Arch. Upon the occurrence of certain specified events, these exclusive rights may be converted to non-exclusive rights, including on a Collaboration Product-by-Collaboration Product basis, (1) for each Collaboration Product if, after two years, we determine that it is not commercially feasible to continue to supply biocatalysts for manufacture of such Collaboration Product and (2) for certain Collaboration Products if, after 18 months, Arch fails to make specified regulatory filings related to such product. Pursuant to the Arch Agreements, we have the exclusive right to sell the Collaboration Products to innovator pharmaceutical companies worldwide, generic pharmaceutical companies in the United States, Canada, Europe and Israel, and certain pharmaceutical companies in India. Arch has the exclusive right to manufacture, market and sell the Collaboration Products to generic pharmaceutical companies in countries other than the United States, Canada, Europe and Israel, and certain other pharmaceutical companies in India. Upon the occurrence of certain events, including the bankruptcy of our company, our failure to supply biocatalysts for the manufacture of a Collaboration Product or our determination that it is not commercially feasible to continue to supply biocatalysts for the manufacture of a Collaboration Product, Arch has an option to obtain the non-exclusive right, for a fee, under certain of our intellectual property rights to use and manufacture biocatalysts to manufacture and sell Collaboration Products to any third party.

The Arch Agreements will continue until February 2020 unless extended by mutual agreement or earlier terminated in accordance with their terms. Each party also has the right to terminate the Arch Agreements or convert the exclusive rights in the Arch Agreements to non-exclusive rights in their entirety or on a Collaboration Product-by-Collaboration Product basis in the case of certain material breaches by the other party.

We may to enter into additional agreements with Arch to manufacture additional intermediates and APIs, including the manufacture of products for innovator customers.

Shell and Other Biofuels Partners

We collaborate with Equilon Enterprises LLC dba Shell Oil Products US, or Shell, to develop commercially viable fuels from cellulosic biomass. If Shell chooses to commercialize any biofuels products developed through our collaboration, we believe that the combination of our technology platform with Shell s proven project development capabilities and resources could enable a biofuels solution, from converting cellulosic biomass into biofuels that extends to delivering and distributing refined biofuels to consumers at the pump.

In November 2006, we entered into a research agreement with Shell. After exceeding targets related to biocatalyst performance under the research agreement, we entered into a new research and development collaboration under a five year amended and restated collaborative research agreement in November 2007, which was amended further in March 2009 and February 2010. Under the terms of the amended and restated collaborative research agreement, we agreed to use our proprietary technology platform to discover and develop biocatalysts for use in converting cellulosic biomass into biofuels and related products. We received an up-front payment of $20 million in 2007 upon signing the amended and restated collaborative research agreement. We have agreed to work exclusively with Shell until November 2012 to convert cellulosic biomass into fermentable sugars that are used in the production of fuels and related products and to convert these sugars into fuels and related products. However, Shell is not required to work exclusively with us, and could develop or pursue alternative technologies that it decides to use for commercialization purposes instead of any technology developed under our collaborative research agreement with Shell. Even if Shell decides to commercialize products based on our technologies, they have no obligation to purchase

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their biocatalyst supply from us. The up-front fee is refundable under certain conditions, such as a change in control in which we are acquired by a competitor of Shell. This refundability lapses ratably on a straight-line basis over a five-year period which started in November 2007 and which ends in November 2012.

In March 2009, we agreed to devote to the research and development collaboration 128 FTEs, which are required to be funded by Shell at an annual base rate per FTE of $441,000 for FTEs located in the United States, and $350,000 for FTEs located in Hungary. These annual base rates per FTE are subject to annual adjustments based on changes in the consumer price index for the United States and Hungary for each subsequent year of the collaboration. Shell has the right to reduce the number of funded FTEs, with any one reduction not to exceed 98 funded FTEs, following advance written notice. The required notice period ranges from 30 to 270 days. Following any such reduction, Shell is subject to a standstill period of between 90 and 360 days during which period Shell cannot provide notice of any further FTE reductions. The notice and standstill periods are dependent on the number of funded FTEs reduced, with the length of notice and standstill periods increasing commensurate with the number of FTEs reduced. To date, Shell has not reduced the number of funded FTEs. We are also eligible for annual milestone payments of up to an aggregate of $16.5 million over the remaining term of the agreement, contingent upon the achievement of certain technical goals, and a milestone payment of $10.0 million upon achievement of certain commercial goals. Our technical goals have included filing patent applications relating to our development program, and matching predetermined benchmarks for the production of sugars from pre-treated cellulosic biomass using our cellulases and the production of a biohydrocarbon diesel component for sugar derived from cellulosic biomass. We have met or exceeded over ninety-five percent of our milestones to date. We believe that several of our cellulase biocatalysts now function at temperatures and acidity levels that are close to the commercial targets. We also believe that our cellulase biocatalysts produce twice as much sugar from pre-treated cellulosic biomass as leading commercially available products under target industrial conditions.

Shell can terminate the amended and restated collaborative research agreement for any or no reason by providing us with at least nine months notice. We will have the right to terminate the amended and restated collaborative research agreement upon 90 days notice if Shell decides to fund less than a certain number of our FTEs in the performance of activities under the amended and restated collaborative research agreement and provided certain other conditions are met. Each party also has the right to terminate the amended and restated collaborative research agreement in the case of a breach by the other party if such breach is uncured within 60 days. Each party also can terminate the amended and restated collaborative research agreement if such party believes the other party has assigned the amended and restated collaborative research agreement to a direct competitor of such party in the field of converting cellulosic biomass into fermentable sugars that can be converted into fuels and related products.

Under our agreements with Shell, we retain ownership of all intellectual property we develop, other than patent rights related to certain fuel innovations, and Shell will have an exclusive license to such intellectual property we develop. If we acquire or license technology from third parties for the purpose of these research activities, we will own or control such intellectual property while Shell will be granted a license in its field of use for research and commercial use consistent with the licenses granted to Shell, under the license agreements.

In November 2006, we also entered into a license agreement with Shell, which was amended and restated in November 2007, and further amended in March 2009. Under the terms of the amended and restated license agreement, we granted to Shell, a worldwide, exclusive, royalty-bearing license, including the right to grant sublicenses, to manufacture, have manufactured, use, sell, offer for sale and import any product covered by our Shell-program patents or which utilizes our technology for use in the field of converting cellulosic biomass into biofuels and related products. The patents and technology licensed include our then existing patent rights and technology and patent rights and technology developed or acquired during performance of the research agreement, in each case related to converting cellulosic biomass into biofuels and related products. We additionally granted Shell royalty-free licenses which allow

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Shell to manufacture or have manufactured biocatalysts developed under the research agreement solely for the purposes of using such biocatalysts in the manufacture of products for use in the field of converting cellulosic biomass into biofuels and related products, such licenses to be used only in accordance with the royalty-bearing license described above. These royalty-free licenses are (i) an exclusive license under the patents and technology related to converting cellulosic biomass into biofuels and related products and developed or acquired by during performance of the research agreement and (ii) a non-exclusive license to patents and technology controlled by us that are necessary or useful for converting cellulosic biomass into biofuels and related products.

Shell will be required to pay us a royalty per gallon with respect to certain fuel products manufactured using our technology platform, including liquid fuels, fuel additives and lubricants, if Shell or any of its licensees manufactures such products. The applicable fuel products are those products which are covered by patents or utilize technology related to converting cellulosic biomass into biofuels and related products that were either developed or acquired during performance of the research agreement or are controlled by us and necessary or useful for such purpose. With respect to cellulosic biomass converted into sugars, Shell agreed to pay us a royalty per gallon of fuel product made from those sugars. With respect to sugars converted into fuel, Shell agreed to pay us a separate royalty per gallon of fuel product made from those sugars. We may be entitled to receive one or both of these royalties depending on whether Shell uses our technology to commercialize one or both of these steps.

Shell can terminate the amended and restated license agreement for any or no reason by providing us with six months notice. If Shell terminates the license agreement, Shell will no longer have the right to use any of our biofuels technology. Each party also has the right to terminate the amended and restated license agreement in the case of a breach by the other party if such breach is uncured within 60 days. The duration of the license agreement differs for each of the fields of use covered by the license agreement, but for each field of use it continues until the later of (i) 20 years after the first sale of product licensed under the agreement in the field of use or (ii) expiration of the last to expire patents covering products licensed under the agreement in the field of use that were either developed or acquired during performance of the research agreement or are controlled by us and necessary or useful for such purpose.

Shell purchased approximately $3.0 million of our Series D preferred stock in November 2006, approximately $30.5 million of our Series E preferred stock in November 2007 and approximately $30.0 million of our Series F preferred stock in March 2009. In addition, in November 2007, Shell exercised a warrant issued in November 2006 to purchase 285,714 shares of our Series D preferred stock for $3.0 million. As of December 31, 2010, Shell owns 16.0% of our outstanding common stock.

One element of our collaboration with Shell relates to the development of cellulosic ethanol. In connection with our collaboration with Shell, we entered into a collaborative research and license agreement with Iogen Energy Corporation, or Iogen, and Shell in July 2009. Under the collaborative research and license agreement with Iogen and Shell, we agreed to collaborate with Iogen and Shell to develop technology relating to the conversion of cellulosic biomass to ethanol and to implement this technology at commercial scale. We solely own any inventions arising under the research activities pursuant to the collaborative research and license agreement that we invent or that we invent jointly with Shell. We also solely own any inventions that are invented jointly with Iogen, either with or without Shell, in certain defined areas, including certain fermentation and scale up processes for enzyme production, certain genes and related enzymes, certain gene expression systems, methods of developing novel biocatalysts, research tools, and certain technologies related to ethanol fermentations. Similarly, Iogen solely owns any inventions arising under the research activities that are invented by Iogen or by Iogen and Shell jointly. Iogen also solely owns any inventions that are invented jointly with Codexis, either with or without Shell, in certain other defined areas relating to Iogen s core technologies. Ownership of any inventions that are jointly invented by us and Iogen and that fall outside the scope of the defined areas of sole ownership are jointly owned. Inventions that we own under the collaborative research and license agreement are subject to the licenses granted by us to Shell, as well as the payments from Shell to us, under

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our other agreements with Shell. Iogen has agreed to pay us a royalty per gallon with respect to certain fuel products, which include liquid fuels, fuel additives and lubricants, that are covered by inventions jointly made by us and Iogen, but that are solely owned by Iogen. We will be entitled to collect royalties from Shell for any use of our biofuels technology by Shell or Iogen. Shell can choose to commercialize cellulosic ethanol manufactured using our technology independently, or in collaboration with Iogen.

The term of the collaborative research and license agreement with Iogen and Shell shall continue until expiration or termination of our license agreement with Shell or of Iogen s technology license agreement with Shell. Shell can terminate the collaborative research and license agreement for any or no reason by providing us and Iogen with 30 days notice. Each party also has the right to terminate the collaborative research and license agreement in the case of breach by another party if that breach is uncured within 60 days.

We have acquired access to a fungal expression system that is capable of producing biocatalysts at commercial scale through a license agreement with Dyadic International, Inc. and its affiliate, or Dyadic, in November 2008. Under the license agreement with Dyadic, we obtained a non-exclusive license relating to Dyadic s proprietary fungal expression technology for the production of biocatalysts. We can use these biocatalysts to make products in the fields of biofuels, certain pharmaceuticals, chemicals, air treatment, water treatment and the conversion of biomass into fermentable sugars for use in non-fuel products. We also obtained access to specified materials of Dyadic relating to this Dyadic technology. Our license is sublicenseable to Shell in the field of biofuels, and sublicensable to third parties in the non-biofuels fields, of certain pharmaceuticals, chemicals, air treatment, water treatment and the conversion of biomass into fermentable sugars for non-fuel products. Each party agreed that neither it nor its affiliates or sublicensees will assert any claim of infringement of any patent covering improvements to the Dyadic materials that were made by that party or its affiliates or sublicensees against the other party, or its affiliates, sublicensees, successors, distributors, or customers. We agreed to pay Dyadic certain license issuance fees, milestone payments, and fees based on volume of biocatalyst products sold or manufactured using this Dyadic technology. We have the right to terminate the license agreement at will upon notice after payment of the license issuance fees. Either party has the right to terminate the license agreement for a material breach of the other party that is uncured within a period of time after notice. Dyadic has the right to terminate our licenses under the license agreement if we challenge the validity of any of the patents licensed under the license agreement. Our licenses, and access to Dyadic s materials, under the license agreement will terminate as a result of any termination of the license agreement other than due to Dyadic s material breach.

In August 2010, Shell International Petroleum Company Limited, or Shell International, an affiliate of Shell, announced that it had signed a binding agreement with Cosan S.A., or Cosan, to form a joint venture in Brazil for the production of ethanol, sugar and power, and the supply, distribution and retail of transportation fuels. Cosan is one of Brazil s leading producers of sugar and ethanol. According to the announcement, if the joint venture is consummated, Cosan would contribute to the joint venture its 23 sugar cane mills, its ethanol production capacity, up to 12 electricity co-generation plants, approximately 1,730 retail fuel service stations and its supply and distribution and ethanol logistics assets, and net debt of approximately $2.5 billion. In addition, Shell International would contribute to the joint venture approximately 2,740 branded retail sites in Brazil, supply and distribution assets, its aviation fuel business in Brazil, Shell s equity interest in us, and $1.625 billion in cash. If the joint venture is consummated, we do not know whether we will receive any benefits from it or how our collaboration with Shell may be impacted.

Technology

We are innovators in the directed evolution of enzymes and microbes to enable industrial biocatalytic reactions and fermentations via biocatalyst engineering, metabolic pathway engineering and fermentation microbe improvement. Our technology platform has enabled commercially viable products and processes for the manufacture of pharmaceutical intermediates, and we are in the process of applying our technology

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platform in connection with the development of biofuels and biocatalysts that separate carbon dioxide from flue gas streams in energy-generation plants.

Our approach to developing commercially viable biocatalytic processes begins by conceptually designing the most economically practical manufacturing process for a targeted product. We then develop optimized biocatalysts to enable that process design, using our directed evolution technology, including screening and validating biocatalysts under relevant conditions. Typical design criteria include stability in the desired reaction conditions, biocatalyst activity and productivity (yield), ease of product isolation, product purity and cost. Alternative approaches to biocatalytic process development typically involve designing and engineering the biocatalytic processes around shortcomings of available biocatalysts, including, for example, biocatalyst immobilization (for stability and/or reuse), special equipment and costly product isolation and purification methods. We circumvent the need for these types of costly process design features by optimizing the biocatalyst for fitness in the desired process environment. As a result, we enable and develop cost-efficient processes that typically are relatively simple to run in conventional manufacturing equipment. This also allows for the efficient technical transfer of our process to our manufacturing partners.

The successful embodiment of our technology platform in commercial manufacturing processes requires well-integrated expertise in a number of technical disciplines. In addition to those directly involved in practicing our directed evolution technologies, such as molecular biology, enzymology, microbiology, cellular engineering, metabolic engineering, bioinformatics, biochemistry, and high throughput analytical chemistry, our process development projects also involve integrated expertise in organic chemistry, chemical process development, chemical engineering, fermentation process development, and fermentation engineering. Our tightly integrated, multi-disciplinary approach to biocatalyst and process development is a critical success factor for our company.

Enzyme Optimization Overview

The enzyme optimization process starts by identifying genes that code for enzymes known to have the general type of catalytic reactivity for a desired chemical reaction. Typically, we identify gene sequences in published databases and then synthesize candidate genes having those sequences. Using a variety of biotechnology tools, we diversify these genes by introducing mutations, giving rise to changes in the enzymes for which they encode. The methods for diversifying these genes, and types of diversity being tested, often vary over the course of a biocatalyst optimization program. For finding initial diversity, methods typically include random mutagenesis and site-directed (included structure-guided) mutagenesis. We also test mutational variations that distinguish related enzymes among different organisms. Once we have identified potentially beneficial mutations, we test combinations of these mutations in libraries made using our proprietary gene recombination methodologies, gene shuffling and multiplexed gene SOEing.

With our proprietary gene shuffling methodology, we generate libraries of genes that have random combinations of the mutations we are testing. The pool of genes is used to transform host cells, which entails introducing the various genes, one each, into host cells. These cells are then segregated and grown into colonies. Cells from individual colonies are cultured in high throughput to produce the enzyme encoded by the shuffled gene in those cells. The enzymes are then screened in high throughput using test conditions relevant to the desired process. The screening results identify individual shuffled genes that produce improved enzymes having combinations of beneficial mutations and weed out enzymes having detrimental ones. Using different test conditions and/or different analytical methods, we can identify variant enzymes that exhibit various improved performance characteristics, such as stability, activity and selectivity, under conditions relevant to the desired chemical process.

In the next step in our optimization process, we use our proprietary software tool, ProSAR, to analyze protein sequence-activity relationships. ProSAR aids in identifying specific gene and enzyme mutations that are beneficial, neutral or detrimental with respect to the desired performance characteristics. Earlier

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directed evolution methods did not separately evaluate individual mutations in libraries of variants which carry multiple mutations, where beneficial and detrimental performance characteristics may be mixed in an individual gene or enzyme. Capitalizing on the advent of inexpensive gene sequencing, we are able to determine which particular mutations are present in the genes and proteins we have screened. Our ProSAR bioinformatics software relates the screening results to the mutations and ranks the individual mutations with regard to their degree of benefit or detriment, relative to whichever process parameter(s) the screening tested. Using that information, we can bias the pool of mutational diversity in the next iteration to further the accumulation of beneficial diversity and cancel out detrimental diversity in the individual genes in the resulting shuffled library. The ProSAR results also help us develop ideas about new diversity to test. ProSAR, combined with efficient gene synthesis and high quality library generation methods, has led to a significant increase in the efficiency and speed of enzyme improvement and optimization.

In another step of our optimization process, we take the best variants we have identified and prepare enough of each to test in the desired chemical process at laboratory scale, for in-process confirmation. This optimization routine is done iteratively, typically adding new diversity to the pool in each iteration. The gene that codes for the best performing enzyme in one iteration is used as the starting gene for the next iteration of shuffling and screening. As the enzymes improve over these iterations, the screening conditions are made increasingly more stringent. In this way, enzymes are rapidly optimized until all in-process performance requirements have been achieved and the economic objectives for the desired process have been met.

Multiplexed gene SOEing is our new proprietary methodology for rapidly generating gene variants. Using multiplexed gene SOEing, we rapidly generate collections of individual gene variants that have predetermined, as opposed to random, combinations of mutations we are testing. It is based on a biotechnology technique, which we refer to as SOEing, or Splicing by Overlap Extension, generally used to make a hybrid, or spliced, gene from fragments of two genes and/or to introduce a specific mutation into a splice between fragments of one gene. We have automated the process to robotically make, in parallel, one hundred to several hundred variants, each with a predetermined combination of the mutations we are testing. The variants are introduced into host cells, and the encoded enzyme is produced and screened in high throughput, as described above.

Using multiplexed gene SOEing, we can test many mutations and combinations thereof in parallel, and because the mutation incorporation is controlled and predetermined before screening, as opposed to random incorporation and selection after screening, the resulting data set can be more optimal for ProSAR analysis.

We believe using multiplexed gene SOEing to quickly survey many mutations, followed by ProSAR-driven shuffling of beneficial mutations, is a particularly effective approach, providing rapid gains in enzyme performance.

Codex Biocatalyst Panels and Kits

Our Codex Biocatalyst Panels were initially developed to speed our own internal process for identifying enzymes with desired characteristics for further optimization. Each Codex Biocatalyst Panel is comprised of variants of one or more enzymes that catalyze one type of a generally useful chemical reaction. We assemble, on one or more multi-well sample plates, variants of a parent enzyme that we pre-optimize for stability in industrial chemical processes and for ready manufacturability. The variants are diversified to react to a variety of chemical structures that are susceptible to that type of chemical reaction.

Either we or our innovator pharmaceutical customers use the Codex Biocatalyst Panels to screen a new chemical structure against the assembled variants to rapidly identify variants that react with the new chemical structure. For some new structures, a variant on the panel could enable production of the desired product. We can also analyze the data from the panel screen using ProSAR to identify the mutations that are beneficial for the reaction of the new structure and further optimize the enzyme as needed using the enzyme optimization techniques described above. In cases where a customer wishes to screen a proprietary

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new chemical structure itself, we can produce a custom panel of new variants on a sample plate produced by multiplexed gene SOEing.

We may also use our Codex Biocatalyst Panels in our bioindustrial programs. In our biofuels research and development collaboration with Shell, we are developing a library of cellulases that have the potential to convert a wide variety of cellulosic biomass sources into fermentable sugars. The cellulosic biomass that we expect will be used to produce advanced biofuels is highly variable from region to region and can change over time. To optimize the local and seasonal conversion of cellulosic biomass to fermentable sugars, we expect to produce a Codex Biocatalyst Panel of cellulases that we or Shell can use to customize the biocatalysts that Shell uses at each advanced biofuel production facility. This technical innovation may ultimately make our sugar platform feedstock agnostic. Similarly, there is regional variation in coal. We may develop a Codex Biocatalyst Panel that we or our customers can use to tailor our carbon capture biocatalysts to the specific characteristics of the coal used in each energy facility that adopts our carbon capture technology.

In 2010, we launched Codex Screening Kits as an alternative format to provide our Codex biocatalysts to pharmaceutical development laboratories that are not equipped to use multi-well sample plates. The biocatalysts are instead individually provided in vials for the researchers to sample.

Microbe Optimization using Gene Optimization

For fermentation microbes, we enhance metabolic pathways by using gene optimization to improve the production and/or productivity of one or more enzymes in a series of *in vivo* reactions that make a desired product. We optimize the gene/enzyme as described above using either *in vitro* or *in vivo* screening. For fermentation applications, the microbes containing the improved gene(s) are directly evaluated in laboratory scale fermenters.

The metabolic pathway may naturally exist in the microbe, but productivity and/or selectivity improvements are needed to economically produce more of the desired natural product and/or less of an undesired by-product. We can also introduce a new metabolic pathway to produce a desired product using our gene shuffling technology in combination with synthetic biology, a type of metabolic engineering in which new genes are introduced into a microbe.

We are using our gene/enzyme optimization methodologies in our biofuels program to optimize fermentation microbes, including optimization of:

- native and introduced (non-native) cellulase genes for increased productivity in our cellulase production microbes;
- an introduced (non-native) pathway in yeast for the conversion of xylose, a cellulose-derived sugar, to ethanol; and
- an introduced (non-native) pathway in a microbe for the production of our biohydrocarbon fuel molecule.

Microbe Optimization using Whole Genome Shuffling

In addition to our gene optimization technology for enzymes, we have another complimentary technology in our platform for the optimization of fermentation microbes called Whole Genome Shuffling. Whole Genome Shuffling allows us to improve the performance of a fermentation microbe by shuffling unidentified mutations in unidentified genes across the genome. We start with a diversity of mutational variants of a fermentation organism, generated by conventional means such as random mutagenesis. Our Whole Genome Shuffling involves introducing the entire genome of two or more such cells into a single cell, in which the genetic machinery of the combined cell recombines, or shuffles, the genomes. In one method, this is accomplished by protoplast fusion, in which the cell walls are removed to leave the cells contents contained only by their cell membranes. The cell membranes of these protoplasts in the diverse population are

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induced to fuse together into fusants containing the genome of two or more of the parent cells. From these fusants, we regenerate normal cells, each with one copy of a hybridized genome. Microbial colonies are then grown and screened for their performance in the fermentative production of the desired product. This process can be repeated, including with the introduction of new mutations, until the desired performance in the fermentation process is achieved. One of our collaborators is operating a fermentation process for a generic pharmaceutical product using microbes we developed by Whole Genome Shuffling.

We are using our Whole Genome Shuffling technology in our biofuels program to optimize fermentation microbes, including optimization of:

- enzyme production hosts for increased production of cellulase enzymes;
- ethanol-producing yeasts for improved xylose utilization, ethanol productivity, and tolerance to higher ethanol concentrations; and
- our biohydrocarbon producing strain for increased productivity.

Metabolic Engineering and Synthetic Biology

In addition to our proprietary enzyme and microbe optimization technologies, we have built expert capabilities in a suite of new metabolic engineering technologies for the development and optimization of fermentation microbes. These technologies are generally applicable to our pathway and strain engineering programs. Genomics, transcriptomics, proteomics and metabolomics all provide more in-depth analyses of the metabolic functioning of fermentation microbes, and differences between variants, to guide further improvements. In many cases, these analyses help to identify enzymes that need to be modified (removed, increased, stabilized, or otherwise modified) in order to increase the overall productivity and performance of the strain.

Synthetic biology involves the design, synthesis and introduction of new genetic programming to organisms for new biological functions. This field has rapidly developed in recent years as DNA synthesis and sequencing costs have rapidly dropped. Using synthetic biology, we are taking advantage of the exploding publicly available gene and genome sequence information in our gene and metabolic pathway optimization projects. This information is being leveraged by our ProSAR software and multiplexed gene SOEing methodologies. For example, we use synthetic biology in our biofuels program to introduce non-native pathways for xylose utilization and for biohydrocarbon production and to optimize these pathways.

Intellectual Property

Our success depends in large part on our proprietary products and technology under which we seek protection from patent, copyright, trademark and trade secret laws. Such protection is also maintained using confidential disclosure agreements. Protection of our technologies is important for us to offer our customers and partners proprietary services and products unavailable from our competitors, and to exclude our competitors from practicing technology that we have developed or exclusively licensed from other parties. For example, our ability to supply innovator pharmaceutical manufacturers depends on our ability to supply proprietary enzymes or methods for making pharmaceutical intermediates or APIs that are not available from our competitors. Likewise, in the generic pharmaceutical area, proprietary protection, through patent, trade secret or other protection of our biocatalysts and methods of producing a pharmaceutical product is important for us and our customers to maintain a lower cost production advantage over competitors. If competitors in our industry have access to the same technology, our competitive position may be adversely affected. As of December 31, 2010, we owned approximately 255 issued patents and approximately 240 pending patent applications in the United States and in various foreign jurisdictions. These patents and patent applications are directed to our enabling technologies and specific methods and products that support our business in the pharmaceutical and bioindustrial markets. The earliest that any of our intellectual property rights will expire is

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2014. The issued patents covering the fundamental shuffling technologies have terms ending as late as 2019. Our U.S. intellectual property rights directed to our second generation enabling technologies have terms that expire from year 2021 to 2024. We continue to file new patent applications, for which terms generally extend 20 years from the filing date in the United States.

In October 2010, we acquired substantially all of the patents and other intellectual property rights associated with Maxygen s directed evolution technology, known as the MolecularBreeding technology platform, including patents, trademarks, copyrights, software and certain assumed contracts. Prior to this transaction, we and Maxygen were parties to a license agreement pursuant to which Maxygen granted us a worldwide, exclusive license to certain Maxygen intellectual property related to the use of directed evolution technology in a variety of fields of use. Under the terms of the original license, we were obligated to pay Maxygen a significant portion of certain types of consideration that we received in connection with our biofuels research and development, including our collaboration with Shell. For example, we were obligated to pay Maxygen $0.9 million, $5.5 million and $1.2 million for 2008, 2009 and 2010, respectively. Since we now own substantially all of the intellectual property rights subject to the original license, the original license with Maxygen has been terminated, and we are no longer obligated to make payments to Maxygen, including potential royalties, relating to biofuels and other energy products. The intellectual property rights and assets that we acquired from Maxygen will continue to be subject to existing license rights previously granted by Maxygen to third parties, including Maxygen s majority-owned subsidiary, Perseid Therapeutics LLC, or Perseid, and to Novozymes A/S, or Novozymes. Perseid retains exclusive licenses to use the intellectual property for the discovery, research and development of protein pharmaceuticals. We and Novozymes enjoy co-exclusive rights in certain fields, including biofuels. Novozymes did not receive a license to all of the rights we are using in biofuels applications and which we believe are critical to pursuing such applications. Novozymes also has exclusive rights to certain of the intellectual property that we acquired from Maxygen in certain limited fields, including development, production and sales of industrial proteins for use in processes for textile, garment, leather, wood and paper production, certain starch, food and animal feed production, certain personal care products, oil drilling, dyestuffs and dyeing, and electronics industry waste water treatment.

As part of the transaction with Maxygen, we entered into a new license agreement with Maxygen, pursuant to which we granted to Maxygen certain license rights to the intellectual property assets that we acquired to the extent necessary for Maxygen to fulfill its contractual obligations under the license agreements retained by Maxygen. As part of the transaction, Maxygen placed $4 million of the total purchase price in escrow for twelve months, with $2 million of such amount to be held in escrow for a total of twenty-three months, in each case to satisfy any indemnification obligations of Maxygen. Escrow amounts not used to satisfy such obligations or subject to pending claims will be released to Maxygen upon expiration of the applicable escrow term.

We will continue to file and prosecute patent applications and maintain trade secrets as is consistent with our business plan in an ongoing effort to protect our intellectual property. It is possible that our current patents, or patents which we may later acquire, may be successfully challenged or invalidated in whole or in part. It is also possible that we may not obtain issued patents from our pending patent applications or other inventions we seek to protect. We sometimes permit certain intellectual property to lapse or go abandoned under appropriate circumstances. Due to uncertainties inherent in prosecuting patent applications, sometimes patent applications are rejected and we subsequently abandon them. It is also possible that we may develop proprietary products or technologies in the future that are not patentable or that the patents of others will limit or altogether preclude our ability to do business. In addition, any patent issued to us may provide us with little or no competitive advantage, in which case we may abandon such patent or license it to another entity.

Our registered and pending U.S. trademarks include Codexis, Codex and Codex Biocatalyst Panel. The Codexis and Codexis design marks have been registered or are pending in selected foreign countries.

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Our means of protecting our proprietary rights may not be adequate and our competitors may independently develop technology or products that are similar to ours or that compete with ours. Patent, trademark, and trade secret laws afford only limited protection for our technology platform and products. The laws of many countries do not protect our proprietary rights to as great an extent as do the laws of the United States. Despite our efforts to protect our proprietary rights, unauthorized parties have in the past attempted, and may in the future attempt, to operate under aspects of our intellectual property or products or to obtain and use information that we regard as proprietary. Third parties may also design around our proprietary rights, which may render our protected technology and products less valuable, if the design around is favorably received in the marketplace. In addition, if any of our products or technology is covered by third-party patents or other intellectual property rights, we could be subject to various legal actions. We cannot assure you that our technology platform and products do not infringe patents held by others or that they will not in the future.

Litigation may be necessary to enforce our intellectual property rights, to protect our trade secrets, to determine the validity and scope of the proprietary rights of others, or to defend against claims of infringement, invalidity, misappropriation, or other claims. Any such litigation could result in substantial costs and diversion of our resources. Moreover, any settlement of or adverse judgment resulting from such litigation could require us to obtain a license to continue to make, use or sell the products or technology that is the subject of the claim, or otherwise restrict or prohibit our use of the technology.

Competition

Overview

We are a leader in the field of directed molecular evolution of biocatalysts. We are aware that other companies, including Verenium Corporation, Royal DSM N.V., or DSM, Danisco/Genencor, Novozymes, and E.I. DuPont De Nemours and Company, or DuPont, have alternative methods for obtaining and generating genetic diversity or use mutagenesis techniques to produce genetic diversity. Academic institutions such as the California Institute of Technology, the Max Planck Institute and the Center for Fundamental and Applied Molecular Evolution (FAME), a jointly sponsored initiative between Emory University and Georgia Institute of Technology, are also working in this field. This field is highly competitive and companies and academic and research institutions are actively seeking to develop technologies that could be competitive with our technologies.

We are aware that other companies, organizations and persons have described technologies that appear to have some similarities to our patented proprietary technologies. In addition, academic institutions are also working in this field. Technological developments by others may result in our products and technologies, as well as products developed by our customers using our biocatalysts, becoming obsolete. We monitor publications and patents that relate to directed molecular evolution to be aware of developments in the field and evaluate appropriate courses of action in relation to these developments.

Many of our competitors have substantially greater manufacturing, financial, research and development, personnel and marketing resources than we do. In addition, certain of our competitors may also benefit from local government subsidies and other incentives that are not available to us. As a result, our competitors may be able to develop competing and/or superior technologies and processes, and compete more aggressively and sustain that competition over a longer period of time than we could. Our technologies and products may be rendered obsolete or uneconomical by technological advances or entirely different approaches developed by one or more of our competitors. As more companies develop new intellectual property in our markets, the possibility of a competitor acquiring patent or other rights that may limit our products or potential products increases, which could lead to litigation.

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We also face differing forms of competition in our various markets, as set forth below:

Pharmaceuticals

Our primary competitors in the pharmaceutical market are companies using conventional, non-biocatalytic processes to manufacture pharmaceutical intermediates and APIs that compete in the marketplace with our biocatalytically manufactured products. The principal methods of competition and competitive differentiation in this market are product quality and performance, including manufacturing yield and safety and environmental benefits, speed of delivery of product and price. The market for the manufacture and supply of APIs and intermediates is large with many established players. These companies include many of our large innovator and generic pharmaceutical customers, such as Merck, Pfizer, and Teva, who have significant internal research and development efforts directed at developing processes to manufacture APIs and intermediates. The processes used by these companies include classical conventional organic chemistry reactions, chemo catalysis reactions catalyzed by chemical catalysts, or biocatalytic routes using commercially available enzymes, or combinations thereof. Our manufacturing processes must compete with these internally developed routes. Additionally, there are many large well-established fine chemical manufacturing companies that compete to supply pharmaceutical intermediate and APIs to our customers, such as DSM, BASF Corporation and Lonza Group Ltd. Finally, we face increasing competition from generic pharmaceutical manufacturers in low cost centers such as India and China.

In addition to competition from companies manufacturing intermediates and APIs, we face competition from companies that sell biocatalysts for use in the pharmaceutical market. The market for supplying biocatalysts for use in pharmaceutical manufacturing is quite fragmented. There is competition from large industrial enzyme companies, such as Novozymes and Amano Enzyme Inc., whose industrial enzymes (for detergents, for example) are occasionally used in pharmaceutical processes. There is also competition in this area from several small European companies with relatively limited product offerings comprised primarily of naturally occurring biocatalysts. In addition to these biocatalyst supply companies, there is a separate group of small companies, also predominately in Europe, that offers biocatalyst optimization services.

We believe that our principal advantage is our ability to rapidly deliver customized biocatalyst products for existing and new intermediates and APIs in the pharmaceuticals market. This capability has allowed us to create a breadth of product offerings with improved performance characteristics including, for example, activity, stability, and activity on a range of substrates, compared to traditional chemistry-based manufacturing processes and naturally occurring biocatalysts. We believe that our directed evolution technology provides substantially superior results, in shorter time frames, than companies offering competing biocatalyst development services.

Bioindustrials

There is increasing interest and activity in the bioindustrial market directed towards developing alternative manufacturing processes for products that have traditionally been derived from fossil fuel sources, such as transportation fuels and chemicals.

Currently, most biofuels being produced at commercial scale are ethanol derived from sugar and starch food sources, such as sugar cane and corn, and biodiesel produced from vegetable oils, such as soy oil. These markets are well-established with multiple companies, such as The Archer Daniels Midland Company, Cargill and a number of smaller companies producing ethanol in the United States.

Many established and several recently formed companies are developing biofuels technology, including:

Novozymes, which has partnered with a number of companies and organizations on a regional basis to develop or produce biofuels, and opened a biofuel demonstration plant with Inbicon A/S of Denmark;

Danisco/Genencor, which has formed a joint venture with DuPont, called DuPont Danisco Cellulosic Ethanol, or DDCE, is marketing a line of cellulases to convert biomass into sugar; Dupont announced in January 2011 that it had entered into a binding agreement to acquire Danisco/Genencor;

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DSM, which received a grant from the U.S. Department of Energy to be the lead partner in a technical consortium including Abengoa Bioenergy New Technologies, is developing cost-effective enzyme technologies;

Mascoma Corporation and Valero Energy Corporation announced their intention in January 2011 to build a commercial-scale cellulosic ethanol biorefinery; and

Vercipia Biofuels, which is controlled by BP, p.l.c, is developing a commercial scale cellulosic ethanol facility.

Although no company is currently converting cellulosic biomass into fermentable sugars at commercial scale, many of our competitors have been active in this area for many years, have invested significant resources in this effort, and have extensive patent portfolios regarding the relevant biocatalysts and related processes. In addition, several companies are focused on developing non-biocatalytic, thermochemical processes to convert cellulosic biomass into fermentable sugars. Our routes from cellulosic biomass to fermentable sugars will need to be cost-competitive with all of these alternative sources and routes. There are also many companies active in the area of producing non-ethanol biofuels from fermentable sugars. For example, DuPont has announced plans to develop and market biobutanol through Butamax, a joint venture with BP, while other companies such as Amyris, Inc., or Amyris, Gevo Inc. and LS9, Inc. are working on biocatalytic routes to non-ethanol biofuel alternatives to petroleum-based fuels. Virent Energy Systems and Shell also have a joint collaboration to develop thermochemical catalytic routes to biogasoline and diesel fuel directly from sugars. Coskata, Inc. is developing a hybrid thermochemical-biocatalytic process to produce ethanol from a variety of feedstocks. New companies are being founded in this area at an increasing rate. Many of these companies are actively developing and applying for intellectual property rights, including patent rights, in this space.

Our ability to remain competitive in this area will depend on our ongoing technical success in identifying and developing novel biocatalytic routes to fuel products that are cost-competitive not only with other biofuels but with petroleum-based fuels. Several of our competitors, including Amyris, utilize synthetic biology techniques to develop their products. Because these techniques have been in the public domain for many years, we are able to use these techniques together with our gene and genome directed evolution technologies. We believe that one of our principal advantages, particularly in the bioindustrial space, is that our directed evolution technology may enable us to develop new, more efficient, and therefore more cost-effective, biocatalysts and processes in less time than our competitors.

As we pursue opportunities in other bioindustrial markets, we expect to face competition from numerous companies focusing on developing biocatalytic and other solutions for these markets, including a number of the companies described above.

Operations

We conduct substantial operations outside of the United States. Please see Note 16 of our consolidated financial statements appearing at Item 8 of this Annual Report on Form 10-K for a description of our revenues and long-lived assets outside the United States. We have facilities located throughout the world, including in Redwood City, California, Singapore, and Budapest, Hungary. As of December 31, 2010, we employed 290 people worldwide, with 203 of our employees located in Redwood City.

Our corporate headquarters is located in Redwood City and provides general administrative support to our business and is the center of our manufacturing and research and development operations. In 2007, we established a research and development facility in Singapore to reduce our pharmaceutical research and development costs and to take advantage of the highly educated and skilled labor force in Singapore. In 2008, we established our facilities in Budapest, Hungary to create a research and development center for microbial biocatalyst improvement and fermentation development and to reduce our research and development costs. Hungary also has a highly educated and skilled work force that leverages the long

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history of fermentation development in Eastern Europe. Our facilities in Hungary are currently used primarily for biofuels research and development.

Our research and development operations include efforts directed towards biocatalyst evolution, bioprocess development, cellular engineering, biocatalyst screening, metabolites, strain improvement, fermentation development and process engineering. We conduct enzyme evolution, enzyme production development, microbial bioprocess development, cellular engineering, microbial evolution and process engineering evaluations and design primarily at our headquarters in Redwood City. We also conduct biocatalyst evolution, biocatalyst screening and bioprocess development in Singapore. Our facility in Hungary collaborates with our headquarters in Redwood City in research and development activities relating to microbe improvement and is our center of excellence for strain and fermentation development.

We have limited internal manufacturing capacity at our headquarters in Redwood City. We expect to rely on third-party manufacturers for commercial production of our biocatalysts for the foreseeable future. Our in-house manufacturing is dedicated to producing both our Codex Biocatalyst Panels and Kits and biocatalysts for use by our customers in pilot scale production. We also supply initial commercial quantities of biocatalysts for use by our collaborators to produce pharmaceutical intermediates and manufacture biocatalysts that we sell.

We rely on two primary contract manufacturers, CPC Biotech srl, or CPC, and Lactosan GmbH & Co. KG, or Lactosan, to manufacture all of the commercial enzymes used in our pharmaceutical business. We have qualified other contract manufacturers to manufacture biocatalysts for our pharmaceutical business, but we do not currently rely on them for any of our supply requirements. We also rely on Arch, headquartered in Mumbai, India, to manufacture certain of our pharmaceutical intermediates and APIs as well as to provide sales and marketing support for these products in Asia, Latin America and the Middle East, and marketing support for these products in India, the United States, Canada, Europe and Israel. In addition, we contract with other suppliers in Austria, Germany, Italy and India.

We intend to pursue the establishment of large-scale enzyme production capacity for our bioindustrial markets. We are evaluating whether to invest in a new facility, to enter into production capacity arrangements or to lease or acquire a pre-existing facility. Such a facility could be used to produce larger quantities of enzymes for our biofuels, carbon capture, chemicals and water treatment markets.

Employees

As of December 31, 2010, we had 291 employees. Of these employees, 197 were engaged in research and development, 31 were engaged in manufacturing and operations, and 63 were engaged in general and administrative activities, respectively. We plan to continue to expand our research and development activities. To support this growth, we will need to expand managerial, research and development, operations, finance and other functions. None of our employees are represented by a labor union, and we consider our employee relations to be good.

Corporate and Available Information

Our principal corporate offices are located at 200 Redwood City, California 94063 and our telephone number is (650) 421-8100. We were incorporated in Delaware in January 2002 as a wholly owned subsidiary of Maxygen, Inc.

Our internet address is www.codexis.com. We make available on our website, free of charge, our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and any amendments to those reports, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities Exchange Commission, or the SEC. Our SEC reports can be accessed through the Investor Relations section of our internet website. The information found on our internet website is not part of this or any other report we file with or furnish to the SEC.

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ITEM 1A. RISK FACTORS

You should carefully consider the risks described below together with the other information set forth in this Annual Report on Form 10-K, which could materially affect our business, financial condition or future results. The risks described below are not the only risks facing our company. Risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially adversely affect our business, financial condition and/or operating results.

Risks Relating to Our Business and Strategy

We have a limited operating history, which may make it difficult to evaluate our current business and predict our future performance.

Our company has been in existence since early 2002. From 2002 until 2005, our operations focused on organizing and staffing our company and developing our technology platform. In 2005, we recognized our first revenues from product sales. Since 2005, we have continued to generate revenues, but because our revenue growth has occurred in recent periods, our limited operating history may make it difficult to evaluate our current business and predict our future performance. Any assessments of our current business and predictions you make about our future success or viability may not be as accurate as they could be if we had a longer operating history. We have encountered and will continue to encounter risks and difficulties frequently experienced by growing companies in rapidly changing industries. If we do not address these risks successfully, our business will be harmed.

Our quarterly operating results may fluctuate in the future. As a result, we may fail to meet or exceed the expectations of research analysts or investors, which could cause our stock price to decline.

Our financial condition and operating results have varied significantly in the past and may continue to fluctuate from quarter to quarter and year to year in the future due to a variety of factors, many of which are beyond our control. Factors relating to our business that may contribute to these fluctuations include the following factors, as well as other factors described elsewhere in this report:

- our ability to achieve or maintain profitability;
- our relationships with and dependence on collaborators in our principal markets;
- our dependence on Shell for the development and commercialization of biofuels;
- the feasibility of producing and commercializing biofuels derived from cellulose;
- our dependence on a limited number of customers;
- our dependence on a limited number of contract manufacturers of our biocatalysts and suppliers for our pharmaceutical intermediates and APIs;
- our dependence on a limited number of products in our pharmaceutical business;
- our ability to manage our growth;

our pharmaceutical customers abilities to incorporate our biocatalysts into their manufacturing processes;

potential legal claims related to the sale of our pharmaceutical products;

the outcomes of clinical trials conducted by our innovator customers;

our ability to develop and successfully commercialize new products for the pharmaceuticals market;

the effect of consolidation in the pharmaceutical industry on demand for our products;

our ability to commercialize our technology in other bioindustrial markets;

our ability to maintain license rights for commercial scale expression systems for cellulases;

fluctuations in the price of and demand for petroleum-based fuels;

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- the availability of non-food renewable cellulosic biomass sources;
- reductions or changes to existing fuel regulations and policies;
- the existence of government subsidies or regulation with respect to carbon dioxide emissions;
- our ability to obtain and maintain governmental grants;
- risks associated with the international aspects of our business;
- our ability to integrate any businesses we may acquire with our business;
- potential issues related to our ability to accurately report our financial results in a timely manner;
- our dependence on, and the need to attract and retain, key management and other personnel;
- our ability to obtain, protect and enforce our intellectual property rights;
- our ability to prevent the theft or misappropriation of our biocatalysts, the genes that code for our biocatalysts, know-how or technologies;
- potential advantages that our competitors and potential competitors may have in securing funding or developing products;
- our ability to obtain additional capital that may be necessary to expand our business;
- business interruptions such as earthquakes and other natural disasters;
- public concerns about the ethical, legal and social ramifications of genetically engineered products and processes;
- our ability to comply with laws and regulations;
- our ability to properly handle and dispose of hazardous materials used in our business;
- potential product liability claims; and

our ability to use our net operating loss carryforwards to offset future taxable income.

Due to the various factors mentioned above, and others, the results of any prior quarterly or annual periods should not be relied upon as indications of our future operating performance.

We have a history of net losses, and we may not achieve or maintain profitability.

We have incurred net losses since our inception, including losses of $45.1 million, $20.3 million and $8.5 million in 2008, 2009 and 2010, respectively. As of December 31, 2010, we had an accumulated deficit of $168.1 million. We expect to incur losses and negative cash flow from operating activities for the foreseeable future. To date, we have derived a substantial portion of our revenues from research and development agreements with our collaborators and expect to derive a substantial portion of our revenues from these sources for the foreseeable future. If we are unable to extend our existing agreements or enter into new agreements upon the expiration or termination of our existing agreements, our revenues could be adversely affected. In addition, some of our collaboration agreements provide for milestone payments and future royalty payments, the payment of which are uncertain as they are dependent on our and our collaborators abilities and willingness to successfully develop and commercialize products. We expect to spend significant amounts to fund the development of additional pharmaceutical and potential bioindustrial products, including biofuels. As a result, we expect that our expenses will exceed revenues for the foreseeable future and we do not expect to achieve profitability prior to at least 2012, if ever. If we fail to achieve profitability, or if the time required to achieve profitability is longer than we anticipate, we may not be able to continue our business. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis.

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We are dependent on our collaborators, and our failure to successfully manage these relationships could prevent us from developing and commercializing many of our products and achieving or sustaining profitability.

Our ability to maintain and manage collaborations in our markets is fundamental to the success of our business. We currently have license agreements, research and development agreements, supply agreements and/or distribution agreements with various collaborators. We may have limited or no control over the amount or timing of resources that any collaborator is able or willing to devote to our partnered products or collaborative efforts. Any of our collaborators may fail to perform their obligations as expected. These collaborators may breach or terminate their agreements with us or otherwise fail to conduct their collaborative activities successfully and in a timely manner. Further, our collaborators may not develop products arising out of our collaborative arrangements or devote sufficient resources to the development, manufacture, marketing, or sale of these products. Moreover, disagreements with a collaborator could develop and any conflict with a collaborator could reduce our ability to enter into future collaboration agreements and negatively impact our relationships with one or more existing collaborators. If any of these events occur, or if we fail to maintain our agreements with our collaborators, we may not be able to commercialize our existing and potential products, grow our business, or generate sufficient revenues to support our operations. Our collaboration opportunities could be harmed if:

- we do not achieve our research and development objectives under our collaboration agreements in a timely manner or at all;
- we develop products and processes or enter into additional collaborations that conflict with the business objectives of our other collaborators;
- we disagree with our collaborators as to rights to intellectual property that are developed during the collaboration, or their research programs or commercialization activities;
- we are unable to manage multiple simultaneous collaborations;
- our collaborators become competitors of ours or enter into agreements with our competitors;
- our collaborators become unable or less willing to expend their resources on research and development or commercialization efforts due to general market conditions, their financial condition or other circumstances beyond our control; or
- consolidation in our target markets limits the number of potential collaborators.

Additionally, our business could be negatively impacted if any of our collaborators or suppliers undergoes a change of control or were to otherwise assign the rights or obligations under any of our agreements. For example, under our license agreement with Shell, Shell may assign the agreement without our consent to controlled affiliates or in connection with a change of control. If Shell or any of our other collaborators were to assign these agreements to a competitor of ours or to a third party who is not willing to work with us on the same terms or commit the same resources as the current collaborator, our business and prospects could be harmed.

Our future success is heavily dependent on our collaborative research agreement with Shell.

Our current business plan for biofuels is heavily dependent on our collaborative research agreement with Shell, which will continue to be critical to researching and developing successful biocatalysts for producing biofuel products. Shell s efforts in commercializing those products profitably will be critical to the success of our business plan for biofuels. If we are unable to successfully execute on the development of products for Shell, our ability to expand into other bioindustrial areas may be significantly impaired, which will materially and adversely affect our ability to grow our business.

We cannot control the financial resources Shell devotes to our programs under the collaborative research agreement. Currently, we receive bi-monthly payments from Shell that are based on the number of

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full-time employee equivalents, or FTEs, that work on our research collaboration with Shell. The number of FTEs that work on the program, and the payments from Shell for these FTEs, are specified in our collaborative research agreement. Shell has the right to reduce the number of funded FTEs, with any one reduction not to exceed 98 funded FTEs, following advance written notice. The required notice period ranges from 30 to 270 days. Following any such reduction, Shell is subject to a standstill period of between 90 and 360 days during which period Shell cannot provide notice of any further FTE reductions. The notice and standstill periods are dependent on the number of funded FTEs reduced, with the length of notice and standstill periods increasing commensurate with the number of FTEs reduced. Any such reduction would have a material adverse impact on our revenues and business plan for biofuels. Moreover, disputes may arise between us and Shell, which could delay the programs on which we are working or could prevent the commercialization of products developed under our research and development collaboration. If that were to occur, we may have to use funds, personnel, equipment, facilities and other resources that we have not budgeted to undertake certain activities on our own. Disagreements with Shell could also result in expensive arbitration or litigation, which may not be resolved in our favor. Performance issues, program delay or termination or unbudgeted use of our resources may have a material adverse effect on our business and financial condition. Even if we successfully develop commercially viable technologies, our ability to derive revenues from those technologies will be dependent upon Shell s willingness and ability to commercialize them. Shell has the right, but not the obligation, to commercialize these technologies. If Shell decides to commercialize our technology, we would need to rely on Shell, or other parties selected by Shell, to design, finance and construct commercial scale biofuel facilities, and operate commercial scale facilities at costs that are competitive with traditional petroleum-based fuels and other alternative fuel technologies that may be developed. Shell could merge with or be acquired by another company or experience financial or other setbacks unrelated to our research collaboration agreement that could adversely affect us.

We have agreed to work exclusively with Shell until November 2012 in the field of converting cellulosic biomass into fermentable sugars that are used in the production of fuels and related products as well as the conversion of these sugars into fuels and related products. However, Shell is not required to work exclusively with us, and could develop or pursue alternative technologies that it decides to use for commercialization purposes instead of the technology developed under our collaborative research agreement with Shell. For example, Shell is currently working with Virent Energy Systems to develop a thermo-chemical approach to developing biogasoline and biodiesel. Even if Shell decides to commercialize products based on our technologies, they have no obligation to purchase their biocatalyst supply from us. If Shell does not pursue the commercialization of any cellulosic sugars, biofuels or related products that may be developed under our collaborative research agreement, our exclusive arrangement would prevent us from licensing any technology developed under the collaboration for the patent life of such technology, which could place us at a significant competitive disadvantage in the biofuels market.

We cannot guarantee that our relationship with Shell will continue. Shell can terminate its collaborative research agreement with us for any or no reason by providing us with nine months notice. Each party also has the right to terminate the license agreement and the collaborative research agreement in the case of an uncured breach by the other party, and to terminate the collaborative research agreement if that party believes the other party has assigned the collaborative research agreement to a direct competitor of the terminating party. If our collaboration with Shell were to fail, we would likely need to find another collaborator to provide the financial assistance and infrastructure necessary for us to develop and commercialize our products and execute our strategy with respect to biofuels. Failure to maintain this relationship would have a material adverse effect on our business, financial condition and prospects.

The success of our cellulosic ethanol program may be dependent on the performance of other parties.

In connection with our research and development collaboration with Shell, we entered into a multiparty collaborative research and license agreement with Iogen and Shell in July 2009, which is

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focused on developing technology to convert cellulosic biomass to ethanol for commercial scale production. Either Shell or Iogen may fail to perform their obligations under this collaboration, may breach or terminate the collaboration agreement or otherwise fail to conduct their collaborative activities successfully and in a timely manner. Further, they may not devote sufficient resources to the development of technology to convert cellulosic biomass to ethanol or may fail to develop the technology altogether. Moreover, disagreements or conflicts amongst the parties could develop and could negatively impact our development efforts or our relationships with Shell and Iogen. Disagreements with Iogen or Shell could also result in expensive arbitration or litigation, which may not be resolved in our favor. If any of these events occur, or if we fail to maintain this collaboration with Shell and Iogen, we may be unable to develop technology for use in the production of cellulosic ethanol at commercial scale, which would have an adverse impact on our ability to grow our business. In addition, the collaborative research and license agreement with Iogen and Shell terminates in the event (i) our separate license agreements with Shell terminate or (ii) Iogen s separate technology license agreement with Shell terminates. In addition, Shell can terminate the collaborative research and license agreement for any or no reason by providing us and Iogen with 30 days notice. Any unilateral action by Shell to terminate either its separate license agreements with us or Iogen will prevent any further research and development activities under the multi-party collaboration. As a result, our ability to pursue research and development activities relating to the conversion of cellulosic biomass and our biofuels programs may be adversely impacted.

We do not yet know what impact, if any, the Shell and Cosan joint venture in Brazil will have on our business.

In August 2010, Shell International Petroleum Company Limited, or Shell International, an affiliate of Shell, announced that it had signed a binding agreement with Cosan S.A. to form a joint venture in Brazil for the production of ethanol, sugar and power, and the supply, distribution and retail of transportation fuels. According to the announcement, Shell International would contribute to the joint venture, among other assets, Shell s equity interest in us. If the joint venture is consummated, we do not know whether we will receive any benefits from it.

Production and commercialization of biofuels derived from cellulose may not be feasible.

We are developing biocatalysts for use in producing two advanced biofuels, cellulosic ethanol and biohydrocarbon diesel, as part of our research and development collaboration with Shell. However, production and commercialization of cellulosic biofuels may not be feasible for a variety of reasons. For example, the development of technology for converting sugar derived from non-food renewable biomass sources into a commercially viable biofuel is still unproven, and we do not know whether this can be done commercially or at all. To date, there has been limited private and government funding for research and development in advanced biofuels relative to the scope of the challenges presented by this development effort. Furthermore, there have been only a few well-directed public policies emphasizing investment in the research and development of, and providing incentives for the commercialization of and transition to, biofuels.

As of the date of this report, we believe that there are no commercial scale cellulosic biofuel production plants in operation. There can be no assurance that anyone will be able or willing to develop and operate biofuel production plants at commercial scale or that any biofuel facilities can be profitable. Additionally, different biocatalysts may need to be developed for use in different geographic locations to convert the cellulosic biomass available in each locale into sugars that can be used in the production of these biofuels. This will make the development of biofuels derived from cellulose more challenging and expensive. Moreover, substantial development of infrastructure will be required for the ethanol market to grow. Areas requiring expansion include, but are not limited to, additional rail capacity, additional storage facilities for ethanol, increases in truck fleets capable of transporting ethanol within localized markets, expansion of refining and blending facilities to handle ethanol, and growth in the fleet of end user vehicles

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capable of using ethanol blends. Substantial investments required for infrastructure changes and expansions may not be made on a timely basis or at all. Any delay or failure in making the changes to or expansion of infrastructure could harm demand or prices for ethanol and impose additional costs that would hinder its commercialization. Finally, if existing tax credits, subsidies and other incentives in the United States and foreign markets are phased out or reduced, the overall cost of commercialization of cellulosic biofuels will increase.

We are dependent on a limited number of customers.

Our current revenues are derived from a limited number of key customers. For the year ended December 31, 2009, our top five customers accounted for 90% of our total revenues, with Shell accounting for 76% of our total revenues. For the year ended December 31, 2010, our top five customers accounted for 85% of our total revenues, with Shell accounting for 62% of our total revenues. We expect a limited number of customers to continue to account for a significant portion of our revenues for the foreseeable future. This customer concentration increases the risk of quarterly fluctuations in our revenues and operating results. The loss or reduction of business from one or a combination of our significant customers could materially adversely affect our revenues, financial condition and results of operations.

We are dependent on a limited number of products in our pharmaceutical business.

Our current product revenues are derived from a limited number of pharmaceutical products. For the year ended December 31, 2010, we derived 87% of our product revenue from 3 pharmaceutical product families: atorvastatin, boceprevir and sitagliptin. We expect a limited number of pharmaceutical products to continue to account for a significant portion of our pharmaceutical product revenues for the foreseeable future. This product concentration increases the risk of quarterly fluctuations in our revenues and operating results. The loss or reduction of business of one or a combination of our significant pharmaceutical products could materially adversely affect our revenues, financial condition and results of operations.

Our dependence on contract manufacturers for biocatalyst production exposes our business to risks.

We have limited internal capacity to manufacture biocatalysts and are unable to do so for commercial scale production. As a result, we are dependent upon the performance and capacity of third party manufacturers for the commercial scale manufacturing of our biocatalysts.

We rely on two primary contract manufacturers, CPC Biotech srl, or CPC, and Lactosan GmbH & Co. KG, or Lactosan, to manufacture substantially all of the biocatalysts used in our pharmaceutical business. Our pharmaceutical business, therefore, faces risks of difficulties with, and interruptions in, performance by these contract manufacturers, the occurrence of which could adversely impact the availability, launch and/or sales of our enzymes in the future. We have identified other contract manufacturers to manufacture biocatalysts for our pharmaceutical business, but we do not have ongoing projects with any such contract manufacturers at this time. The failure of any manufacturers that we may use to supply manufactured product on a timely basis or at all, or to manufacture our biocatalysts in compliance with our specifications or applicable quality requirements or in volumes sufficient to meet demand would adversely affect our ability to sell pharmaceutical products, could harm our relationships with our collaborators or customers and could negatively affect our revenues and operating results. For example, in 2008, we were required to secure an alternative source of certain biocatalysts when viruses infected one of our contract manufacturer s facilities. If this or any similar event disrupts the operations of any of our suppliers in the future, we may be forced to secure alternative sources of supply, which may be unavailable on commercially acceptable terms, cause delays in our ability to deliver products to our customers, increase our costs and decrease our profit margins.

We do not currently have a long-term supply contract with CPC, Lactosan or any other contract manufacturers, which are under no obligation to manufacture our biocatalysts and could elect to

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discontinue their manufacture at any time. If we require additional manufacturing capacity and are unable to obtain it in sufficient quantity, we may not be able to increase our pharmaceutical sales, or we may be required to make substantial capital investments to build that capacity or to contract with other manufacturers on terms that may be less favorable than the terms we currently have with CPC or Lactosan. If we choose to build our own additional manufacturing capacity, it could take a year or longer before our facility is able to produce commercial volumes of our biocatalysts. In addition, if we contract with other manufacturers, we may experience delays of several months in qualifying them, which could harm our relationships with our collaborators or customers and could negatively affect our revenues or operating results.

We are working to establish long-term supply contracts with contract manufacturers and are evaluating whether to invest in our own manufacturing capabilities. However, we cannot guarantee that we will be able to enter into long-term supply contracts on commercially reasonable terms, or at all, or to acquire, develop or contract for internal manufacturing capabilities. Any resources we expend on acquiring or building internal manufacturing capabilities could be at the expense of other potentially more profitable opportunities.

We rely on Arch to market our products in certain regions, and Arch may not be able to effectively market our products.

Using our biocatalysts, Arch manufactures certain specified APIs, and intermediates used in the manufacture of APIs, that we then purchase and have the right to sell to innovator pharmaceutical companies worldwide, generic pharmaceutical companies in the United States, Canada, Europe and Israel, and certain pharmaceutical companies in India. Arch has the exclusive right to manufacture market and sell such APIs and intermediaries to generic pharmaceutical companies in countries other than the United States, Canada, Europe and Israel, and certain other pharmaceutical companies in India. We must therefore rely on Arch for their financial resources and their marketing expertise for the commercialization of such APIs and intermediates in these regions. We cannot control Arch s level of activity or expenditure relating to the marketing of such products relative to the rest of their products or marketing efforts. Arch may fail to effectively market our products in these regions. Conflicting priorities, competing demands or other factors that we cannot control, and of which we may not be aware, may cause Arch to deemphasize such products. If we are unable to effectively leverage Arch s marketing capabilities or Arch does not successfully promote such products in the designated territories as our sole marketing partner, this could harm our business, our revenues and operating results, and our ability to bring such products to the marketplace.

If we are unable to implement and maintain effective internal control over financial reporting in the future, the accuracy and timeliness of our financial reporting may be adversely affected.

In connection with the audit of our 2009 consolidated financial statements, we and our independent registered public accounting firm determined that a previously identified significant deficiency which related to an ineffective contract compliance process continued to exist as of December 31, 2009. We implemented policies and procedures to address this deficiency, but these controls have not been tested. While we have not completed our assessment of internal controls, based on the procedures performed as of December 31, 2010, we noted no control deficiencies that would arise to a material weakness in our internal control over financial reporting. We have not performed an evaluation of our internal control over financial reporting, such as required by Section 404 of the Sarbanes-Oxley Act, nor have we engaged our independent registered public accounting firm to perform an audit of our internal control over financial reporting as of any balance sheet date or for any period reported in our financial statements. Had we performed such an evaluation or had our independent registered public accounting firm performed an audit of our internal control over financial reporting, control deficiencies, including material weaknesses and significant deficiencies, in addition to those discussed above, may have been identified.

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We have taken numerous steps to enhance our internal control over financial reporting, including the development and implementation of policies, improved processes and documented procedures, the retention of third-party experts and contractors, and the hiring of additional accounting and finance personnel with technical accounting, inventory accounting and financial reporting experience. We cannot assure you that in the future material weaknesses or significant deficiencies will not exist or otherwise be discovered, a risk that is significantly increased in light of the complexity of our business and multinational operations. If other deficiencies are discovered in the future, our ability to accurately and timely report our financial position, results of operations or cash flows could be impaired, which could result in late filings of our annual and quarterly reports under the Securities Exchange Act of 1934, as amended, restatements of our consolidated financial statements, a decline in our stock price, suspension or delisting of our common stock by The NASDAQ Global Market, or other material adverse effects on our business, reputation, results of operations, financial condition or liquidity.

We may continue to encounter difficulties managing our growth, which could adversely affect our business.

Our business has grown rapidly and we expect this growth to continue. Overall, we have grown from approximately 40 employees at the end of 2002 to approximately 291 employees as of December 31, 2010. Currently, we are working simultaneously on multiple projects targeting several markets. Furthermore, we are conducting our business across several countries, including activities in the United States, India, Japan, Singapore, Austria, France, Germany, Hungary, Italy and the Netherlands. We expect to establish business activities in Brazil in the near future. These diversified, global operations place increased demands on our limited resources and require us to substantially expand the capabilities of our administrative and operational resources and to attract, train, manage and retain qualified management, technicians, scientists and other personnel. As our operations expand domestically and internationally, we will need to continue to manage multiple locations and additional relationships with various customers, collaborators, suppliers and other third parties. Our ability to manage our operations, growth, and various projects effectively will require us to make additional investments in our infrastructure to continue to improve our operational, financial and management controls and our reporting systems and procedures and to attract and retain sufficient numbers of talented employees, which we may be unable to do effectively. As a result, we may be unable to manage our expenses in the future, which may negatively impact our gross margins or operating margins in any particular quarter. In addition, we may not be able to successfully improve our management information and control systems, including our internal control over financial reporting, to a level necessary to manage our growth and we may discover deficiencies in existing systems and controls that we may not be able to remediate in an efficient or timely manner.

Our business could be adversely affected if pharmaceutical customers do not incorporate our biocatalysts into their manufacturing processes.

Historically, pharmaceutical companies have been reluctant to use biocatalysts in the manufacture of their intermediates or APIs because naturally occurring biocatalysts were not economically viable for production at commercial scale. For example, naturally occurring biocatalysts are often not stable enough to be used in industrial settings. Additionally, the activity and productivity of these biocatalysts are often too limited to be effective in commercial scale manufacturing and often result in incomplete reactions and insufficient product yields. Although our biocatalysts have been developed to address shortcomings of naturally occurring biocatalysts, we may still encounter reluctance by pharmaceutical companies to adopt processes that use our biocatalysts. If customers decide not to adopt processes using our biocatalysts over other methods of producing the intermediates or APIs for their drugs, our revenues and prospects will be negatively impacted.

Moreover, we believe that the lower manufacturing costs enabled by our technology platform is one of the principal reasons pharmaceutical companies have purchased and will continue to purchase our

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biocatalysts and optimization services. If we are unable to maintain the cost advantages provided by our technology platform, customers may be less willing to purchase our products and services, which would also negatively impact our revenues. In addition, we may be unable to reach agreement on pricing or other terms with potential customers, which may adversely impact our ability to grow our business.

Our business could be adversely affected if the clinical trials being conducted by our innovator customers fail or if the processes used by those customers to manufacture their final pharmaceutical products fail to be approved.

Our biocatalysts are used in the manufacture of intermediates and APIs which are then used in the manufacture of final pharmaceutical products by our existing and potential customers, who sell branded drugs, which we refer to as innovators. These pharmaceutical products must be approved by the FDA in the United States and similar regulatory bodies in other markets prior to commercialization. If these customers experience adverse events or a lack of efficacy in their clinical trials, fail to receive regulatory approval for the drugs, fail to receive regulatory approval for new manufacturing processes for previously approved drugs, or decide for business or other reasons to discontinue their clinical trials or drug development activities, our revenues and prospects will be negatively impacted. For example, one of our customers that incorporated our biocatalysts in the manufacturing process for a drug candidate suspended its development efforts during clinical trials. As a result, we were unable to realize a potential long-term revenue stream that would otherwise be associated with a commercialized product. The process of producing these drugs, and their generic equivalents, is also subject to regulation by the FDA in the United States and equivalent regulatory bodies in other markets. If any pharmaceutical process that uses our biocatalysts does not receive approval by the appropriate regulatory body or if customers decide not to pursue approval, our business could be adversely affected.

Our pharmaceutical product gross margins are variable and may decline from quarter to quarter, which could cause our stock price to decline.

Our pharmaceutical product gross margins have varied significantly in the past and may continue to fluctuate from quarter to quarter and year to year in the future due to a variety of factors, including product mix, pricing pressure from our pharmaceutical customers and competition from other products or technologies. We do not expect product gross margins for our current generic products to improve in the near or long term, which may have a material adverse impact on our operating results and financial condition and cause our stock price to decline.

If we are unable to develop and commercialize new products for the pharmaceutical market, our business and prospects will be harmed.

We plan to launch new pharmaceutical products. These efforts are subject to numerous risks, including the following:

- we may be unable to successfully develop the biocatalysts or manufacturing processes for our products in a timely and cost-effective manner, if at all;
- we may face difficulties in transferring the developed technologies to the contract manufacturers that we may use for commercial scale production;
- the contract manufacturers that we may use may be unable to scale their manufacturing operations to meet the demand for these products and we may be unable to secure additional manufacturing capacity;
- customers may not be willing to purchase these products from us on favorable terms, if at all;

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- we may face product liability litigation, unexpected safety or efficacy concerns and product recalls or withdrawals;

- changes in laws or regulations relating to the pharmaceutical industry could cause us to incur increased costs of compliance or otherwise harm our business;

- negative publicity may affect doctor or patient confidence in the products;

- we may face pressure from existing or new competitive products; and

- we may face pricing pressures from existing or new competitors, some of which may benefit from government subsidies or other incentives.

The sale of our pharmaceutical products could expose us to legal claims from other companies.

We may be subject to claims alleging that our pharmaceutical products violate the patent or other intellectual property rights of third parties, particularly in connection with any generic products on which the patent covering the branded drug is expiring. These claims could give rise to litigation, which may be costly and time-consuming and could divert management s attention. If we are unsuccessful in our defense of any such claims, we may lose our right to develop or manufacture the products, be required to pay monetary damages, or be required to enter into license agreements and pay substantial royalties. If one or more of these risks were to materialize, our future business, results of operations and financial condition could be materially adversely affected, and we may be unable to grow our business.

Consolidation in the pharmaceutical industry could adversely impact our business.

There has been significant consolidation in the pharmaceutical industry, including the mergers of Pfizer Inc. and Wyeth, Merck and Schering-Plough Corporation, and F. Hoffman-La Roche Ltd. and Genentech Inc., and the acquisition of several generics businesses by Novartis AG, and this consolidation may continue in the future. When pharmaceutical companies merge, they often rationalize their product portfolios by eliminating competing product programs, resulting in fewer drug programs for certain target indications. As a result of this consolidation, there are fewer potential pharmaceutical customers and fewer drug development programs that could utilize our products and services to enhance drug manufacturing processes. For example, the consolidation of two pharmaceutical companies may lead the acquiring company to suspend or terminate development programs for certain product candidates for which we may have been providing or had the opportunity to provide biocatalysts, intermediates or APIs. Merged pharmaceutical companies will also often rationalize their list of suppliers, which could cause us to lose some or all of our business with the newly merged pharmaceutical businesses. Either a reduction in the number of drug development programs or a reduction of previously approved suppliers by newly merged pharmaceutical companies could lead to diminished demand for our products and services, which could adversely impact our business. In addition, newly merged pharmaceutical companies may use their larger market share to put price pressure on their existing suppliers. Any resulting reduction in our prices would have an adverse effect on our pharmaceutical revenues and margins and negatively affect our ability to grow our business.

If we are unable to successfully commercialize our technology in other bioindustrial markets, we may be unable to grow our business.

In addition to biofuels, we expect to invest a significant amount of our future research and development efforts in other bioindustrial markets, including carbon management, chemicals and water treatment. Because we do not currently and may never possess the resources necessary to independently develop and commercialize all of the potential products that may result from our technologies, our ability to succeed in these target markets will likely depend on our ability to enter into collaboration agreements to develop and commercialize potential products. We intend to pursue such additional collaborations, but may be unable to do so on terms satisfactory to us, or at all. Even if we are able to enter into collaborations in

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one or more of these areas, the collaborations may be unsuccessful. Moreover, because we have limited financial and managerial resources, we will be required to prioritize our application of resources to particular development and commercialization efforts. Any resources we expend on one or more of these efforts could be at the expense of other potentially profitable opportunities. If we focus our efforts and resources on one or more of these areas and they do not lead to commercially viable products, our revenues, financial condition and results of operations could be adversely affected.

In October 2010, we purchased the directed evolution intellectual property assets from Maxygen, which eliminated certain constraints on our ability to enter the bio-based chemicals market. This sector will be a new market for us, and there are a number of competitors who have been active in this marketplace for several years. Our ability to compete in this market may be limited by our relatively late start.

If we are unable to maintain license rights to a commercial scale expression system for enzymes that convert cellulosic biomass to sugars, our business may be materially adversely affected.

We entered into a license agreement with Dyadic International, Inc. and its affiliate, or Dyadic, in November 2008 to obtain access to an expression system that is capable of producing the necessary biocatalysts for the commercialization of cellulosic biofuels. Under the license agreement with Dyadic, we obtained a non-exclusive license under intellectual property rights of Dyadic relating to Dyadic s proprietary fungal expression technology for the production of enzymes. We also obtained access to specified materials of Dyadic relating to such Dyadic technology. Our license is sublicenseable to Shell in the field of biofuels. Dyadic has the right to terminate our licenses under the license agreement if we challenge the validity of any of the patents licensed under the license agreement and for various other reasons. Our licenses and access to such materials of Dyadic, under the license agreement will terminate as a result of any termination of the license agreement other than due to Dyadic s material breach. If we are unable to maintain these rights on commercially reasonable terms or if the license agreement is terminated for any reason, we will need to buy or license this type of expression system from another party or develop this type of expression system ourselves, which may be difficult, costly and time consuming, in part because of the broad, existing intellectual property rights owned by Danisco A/S, Novozymes and others. If any of these events occur, our business may be materially adversely affected.

Fluctuations in the price of and demand for petroleum-based fuels may reduce demand for biofuels and bio-based chemicals.

Biofuels and some bio-based chemicals are anticipated to be marketed as an alternative to petroleum-based fuels. Therefore, if the price of oil falls, any revenues that we generate from biofuel or bio-based chemical products could decline, and we may be unable to produce products that are a commercially viable alternative to petroleum-based fuels. Additionally, demand for liquid transportation fuels, including biofuels, may decrease due to economic conditions or otherwise. Demand for renewable chemicals may also fluctuate if the price of oil is variable.

The royalties that we may earn under our agreements with Shell are indexed to the price of oil and generally increase as the price of oil increases. However, the index is set based on average prices between November 2007 and the date of first commercial sale. Therefore, if prices fall, our revenues would be negatively impacted.

Our approach to the advanced biofuels markets may be limited by the availability or cost of non-food renewable cellulosic biomass sources.

Our approach to the advanced biofuels markets may be dependent on the availability and price of the cellulosic biomass that will be used to produce biofuels derived from cellulose. If the availability of cellulosic biomass decreases or its price increases, this may reduce the royalties that we collect from Shell and have a material adverse effect on our financial condition and operating results. At certain levels, prices may make these products uneconomical to use and produce.

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The price and availability of cellulosic biomass may be influenced by general economic, market and regulatory factors. These factors include the availability of arable land to supply feedstock, weather conditions, farming decisions, government policies and subsidies with respect to agriculture and international trade, and global demand and supply. The significance and relative impact of these factors on the price of cellulosic biomass is difficult to predict, especially without knowing what types of cellulosic biomass materials we may need to use.

Reductions or changes to existing fuel regulations and policies may present technical, regulatory and economic barriers, all of which may significantly reduce demand for biofuels.

The market for biofuels is heavily influenced by foreign, federal, state and local government regulations and policies concerning the petroleum industry. For example, in 2007, the U.S. Congress passed an alternative fuels mandate that currently calls for approximately 36 billion gallons of liquid transportation fuels sold in 2022 to come from alternative sources, including biofuels. Of this amount, a minimum of 21 billion gallons must be advanced biofuels. In the United States and in a number of other countries, these regulations and policies have been modified in the past and may be modified again in the future. Any reduction in mandated requirements for fuel alternatives and additives to gasoline may cause demand for biofuels to decline and deter investment in the research and development of biofuels. Market uncertainty regarding future policies may also affect our ability to develop new biofuels products or to license our technologies to third parties. Any inability to address these requirements and any regulatory or policy changes could have a material adverse effect on our biofuels business, financial condition and operating results. Our other potential bioindustrial products may be subject to additional regulations.

If governmental incentives or other actions targeted at limiting carbon emissions are not adopted, a broad market for carbon management solutions may not develop.

Our strategy with respect to carbon management, although still in the research phase, would likely require an expansion of the market for the management of carbon dioxide emissions prior to us being able to recognize significant revenues from our research and continuing expenditures of resources. The development of a significant market will likely depend on the adoption of government subsidies or other government regulation requiring companies to limit their carbon emissions. In the United States, for example, there is no current market for carbon. The establishment of a carbon market in the United States could take years to develop, if ever. The United States Senate, for example, failed to pass carbon regulating legislation in 2010. In the absence of such additional government subsidies or regulation in major markets, this carbon management market may not develop and we would not be able to generate significant revenues from our carbon management operations. Even if a carbon market is established, we will not be able to commercialize our potential carbon solutions if the price of carbon is below the cost to deploy our solutions.

Our government grants are subject to uncertainty, which could harm our business and results of operations.

We have received various government grants to complement and enhance our own resources. We may seek to obtain government grants and subsidies in the future to offset all or a portion of the costs of building additional manufacturing facilities and research and development activities. We cannot be certain that we will be able to secure any such government grants or subsidies. Any of our existing grants or new grants that we may obtain may be terminated, modified or recovered by the granting governmental body under certain conditions.

We may also be subject to routine audits by government agencies as part of our government grants contracts. As part of an audit, these agencies may review our performance, cost structures and compliance

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with applicable laws, regulations and standards. Funds available under grants must be applied by us toward the research and development programs specified by the granting agencies, rather than for all of our programs generally. If any of our costs are found to be allocated improperly, the costs may not be reimbursed and any costs already reimbursed may have to be refunded. Accordingly, an audit could result in an adjustment to our revenues and results of operations.

We face risks associated with our international business.

Significant portions of our operations are conducted outside of the United States and we expect to continue to have significant foreign operations in the foreseeable future. International business operations are subject to a variety of risks, including:

- changes in or interpretations of foreign regulations that may adversely affect our ability to sell our products, repatriate profits to the United States or operate our foreign-located facilities;
- the imposition of tariffs;
- the imposition of limitations on, or increase of, withholding and other taxes on remittances and other payments by foreign subsidiaries or joint ventures;
- the imposition of limitations on genetically-engineered products or processes and the production or sale of those products or processes in foreign countries;
- currency exchange rate fluctuations;
- uncertainties relating to foreign laws and legal proceedings including tax and exchange control laws;
- the availability of government subsidies or other incentives that benefit competitors in their local markets that are not available to us;
- economic or political instability in foreign countries;
- difficulties in staffing and managing foreign operations; and
- the need to comply with a variety of U.S. laws applicable to the conduct of overseas operations, including export control laws and the Foreign Corrupt Practices Act.

We manufacture many of our pharmaceutical intermediates in India, which has stringent local regulations that make it difficult for money earned in India to be taken out of the country without being subject to Indian taxes. While our Indian subsidiary can make use of some of the funds we earn in India, these regulations may limit the amount of profits we can repatriate from operations in India.

If we engage in any acquisitions, we will incur a variety of costs and may potentially face numerous risks that could adversely affect our business and operations.

We have made acquisitions in the past, and if appropriate opportunities become available, we expect to acquire additional businesses, assets, technologies, or products to enhance our business in the future. For example, in October 2010, we acquired substantially all of the patents and

other intellectual property rights associated with Maxygen s directed evolution technology. In connection with any future acquisitions, we could:

issue additional equity securities which would dilute our current stockholders;

incur substantial debt to fund the acquisitions;

use our cash to fund the acquisitions; or

assume significant liabilities including litigation risk.

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Acquisitions involve numerous risks, including problems integrating the purchased operations, technologies or products, unanticipated costs and other liabilities, diversion of management s attention from our core businesses, adverse effects on existing business relationships with current and/or prospective collaborators, customers and/or suppliers, risks associated with entering markets in which we have no or limited prior experience and potential loss of key employees. We do not have extensive experience in managing the integration process and we may not be able to successfully integrate any businesses, assets, products, technologies, or personnel that we might acquire in the future without a significant expenditure of operating, financial and management resources, if at all. The integration process could divert management time from focusing on operating our business, result in a decline in employee morale and cause retention issues to arise from changes in compensation, reporting relationships, future prospects or the direction of the business. Acquisitions may also require us to record goodwill and non-amortizable intangible assets that will be subject to impairment testing on a regular basis and potential periodic impairment charges, incur amortization expenses related to certain intangible assets, and incur large and immediate write offs and restructuring and other related expenses, all of which could harm our operating results and financial condition. In addition, we may acquire companies that have insufficient internal financial controls, which could impair our ability to integrate the acquired company and adversely impact our financial reporting. If we fail in our integration efforts with respect to any of our acquisitions and are unable to efficiently operate as a combined organization, our business and financial condition may be adversely affected.

We must rely on our suppliers, contract manufacturers and customers to deliver timely and accurate information in order to accurately report our financial results in the time frame and manner required by law.

We need to receive timely, accurate and complete information from a number of third parties in order to accurately report our financial results on a timely basis. We rely on third parties that sell our pharmaceutical products that are manufactured using our biocatalysts to provide us with complete and accurate information regarding revenues, costs of revenues and payments owed to us on a timely basis. In addition, we rely on suppliers and certain contract manufacturers, including Arch, to provide us with timely and accurate information regarding our inventories and manufacturing cost information, and we rely on current and former collaborators to provide us with product sales and cost saving information in connection with royalties owed to us. Any failure to receive timely information from one or more of these third parties could require that we estimate a greater portion of our revenues and other operating performance metrics for the period, which could cause our reported financial results to be incorrect. Moreover, if the information that we receive is not accurate, our financial statements may be materially incorrect and may require restatement, and we may not receive the full amount of revenues that we are entitled to under these arrangements. Although we typically have audit rights with these parties, performing such an audit could be harmful to our collaborative relationships, expensive and time consuming and may not be sufficient to reveal any discrepancies in a timeframe consistent with our reporting requirements.

If we lose key personnel, including key management personnel, or are unable to attract and retain additional personnel, it could delay our product development programs, harm our research and development efforts, and we may be unable to pursue collaborations or develop our own products.

Our business involves complex, global operations across a variety of markets and requires a management team and employee workforce that is knowledgeable in the many areas in which we operate. The loss of any key members of our management, including our Chief Executive Officer, Alan Shaw, or the failure to attract or retain other key employees who possess the requisite expertise for the conduct of our business, could prevent us from developing and commercializing our products for our target markets and entering into collaborations or licensing arrangements to execute on our business strategy. In addition, the loss of any key scientific staff, or the failure to attract or retain other key scientific employees, could prevent us from developing and commercializing our products for our target markets and entering into collaborations or licensing arrangements to execute on our business strategy. We may not be able to attract

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or retain qualified employees in the future due to the intense competition for qualified personnel among biotechnology and other technology-based businesses, particularly in the biofuels area, or due to the availability of personnel with the qualifications or experience necessary for our biofuels business. If we are not able to attract and retain the necessary personnel to accomplish our business objectives, we may experience staffing constraints that will adversely affect our ability to meet the demands of our collaborators and customers in a timely fashion or to support our internal research and development programs. In particular, our product and process development programs are dependent on our ability to attract and retain highly skilled scientists. Competition for experienced scientists and other technical personnel from numerous companies and academic and other research institutions may limit our ability to do so on acceptable terms. All of our employees are at-will employees, which means that either the employee or we may terminate their employment at any time.

Our planned activities will require additional expertise in specific industries and areas applicable to the products and processes developed through our technology platform or acquired through strategic or other transactions, especially in the end markets that we seek to penetrate. These activities will require the addition of new personnel, and the development of additional expertise by existing personnel. The inability to attract personnel with appropriate skills or to develop the necessary expertise could impair our ability to grow our business. Additionally, we would be in breach of certain agreements, including our collaborative research agreement with Shell, if we fail to maintain a specified number of personnel.

Our ability to compete may decline if we do not adequately protect our proprietary technologies or if we lose some of our intellectual property rights through costly litigation or administrative proceedings.

Our success depends in part on our ability to obtain patents and maintain adequate protection of our intellectual property for our technologies and products and potential products in the United States and other countries. We have adopted a strategy of seeking patent protection in the United States and in foreign countries with respect to certain of the technologies used in or relating to our products and processes. As such, as of December 31, 2010, we owned approximately 255 issued patents and approximately 240 pending patent applications in the United States and in various foreign jurisdictions. Some of our gene shuffling patents will expire as early as 2014. We also have license rights to a number of issued patents and pending patent applications in the United States and in various foreign jurisdictions. Our owned and licensed patents and patent applications are directed to our enabling technologies and to our methods and products which support our business in the pharmaceuticals and bioindustrials markets. We intend to continue to apply for patents relating to our technologies, methods and products as we deem appropriate.

Numerous patents in our portfolio involve complex legal and factual questions and, therefore, enforceability cannot be predicted with any certainty. Issued patents and patents issuing from pending applications may be challenged, invalidated, or circumvented. Moreover, third parties could practice our inventions in territories where we do not have patent protection. Such third parties may then try to import products made using our inventions into the United States or other territories. Additional uncertainty may result from potential passage of patent reform legislation by the United States Congress, legal precedent as handed down by the United States Federal Circuit and Supreme Court as they determine legal issues concerning the scope and construction of patent claims and inconsistent interpretation of patent laws by the lower courts. Accordingly, we cannot ensure that any of our pending patent applications will result in issued patents, or even if issued, predict the breadth of the claims upheld in our and other companies patents. Given that the degree of future protection for our proprietary rights is uncertain, we cannot ensure that: (i) we were the first to make the inventions covered by each of our pending applications, (ii) we were the first to file patent applications for these inventions, or (iii) the proprietary technologies we develop will be patentable.

In addition, unauthorized parties may attempt to copy or otherwise obtain and use our products or technology. Monitoring unauthorized use of our intellectual property is difficult, and we cannot be certain

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that the steps we have taken will prevent unauthorized use of our technology, particularly in certain foreign countries where the local laws may not protect our proprietary rights as fully as in the United States. If competitors are able to use our technology, our ability to compete effectively could be harmed. Moreover, others may independently develop and obtain patents for technologies that are similar to or superior to our technologies. If that happens, we may need to license these technologies, and we may not be able to obtain licenses on reasonable terms, if at all, which could cause harm to our business.

Our commercial success also depends in part on not infringing patents and proprietary rights of third parties, and not breaching any licenses or other agreements that we have entered into with regard to our technologies, products and business. We cannot ensure that patents have not been issued to third parties that could block our ability to obtain patents or to operate as we would like. There may be patents in some countries that, if valid, may block our ability to make, use or sell our products in those countries, or import our products into those countries, if we are unsuccessful in circumventing or acquiring the rights to these patents. There also may be claims in patent applications filed in some countries that, if granted and valid, may also block our ability to commercialize products or processes in these countries if we are unable to circumvent or license them.

The biotechnology industry is characterized by frequent and extensive litigation regarding patents and other intellectual property rights, and we believe that the various bioindustrial markets will also be characterized by this type of litigation. Many biotechnology companies have employed intellectual property litigation as a way to gain a competitive advantage. Our involvement in litigation, interferences, opposition proceedings or other intellectual property proceedings inside and outside of the United States, to defend our intellectual property rights or as a result of alleged infringement of the rights of others, may divert management time from focusing on business operations and could cause us to spend significant amounts of money. Any potential intellectual property litigation also could force us to do one or more of the following:

- stop selling, incorporating or using our products that use the subject intellectual property;
- obtain from the third party asserting its intellectual property rights a license to sell or use the relevant technology, which license may not be available on reasonable terms, or at all; or
- redesign those products or processes that use any allegedly infringing technology, or relocate the operations relating to the allegedly infringing technology to another jurisdiction, which may result in significant cost or delay to us, could be technically infeasible or could prevent us from selling some of our products in the United States or other jurisdictions.

We are aware of a significant number of patents and patent applications relating to aspects of our technologies filed by, and issued to, third parties. We cannot assure you that if this third party intellectual property is asserted against us that we would ultimately prevail.

If any of our competitors have filed patent applications or obtained patents that claim inventions also claimed by us, we may have to participate in interference proceedings declared by the relevant patent regulatory agency to determine priority of invention and, thus, the right to the patents for these inventions in the United States. These proceedings could result in substantial cost to us even if the outcome is favorable. Even if successful, any interference may result in loss of certain claims. Any litigation or proceedings could divert our management s time and efforts. Even unsuccessful claims could result in significant legal fees and other expenses, diversion of management time, and disruption in our business. Uncertainties resulting from initiation and continuation of any patent or related litigation could harm our ability to compete.

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

The laws of some foreign countries, including India, where we manufacture pharmaceutical intermediates and APIs through contract manufacturers, do not protect intellectual property rights to the

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same extent as the laws of the United States. Many companies have encountered significant problems in protecting and defending intellectual property rights in certain foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents and other intellectual property protection, particularly those relating to biotechnology and/or bioindustrials technologies. Accordingly, our efforts to protect our intellectual property rights in such countries may be inadequate. This could make it difficult for us to stop the infringement of our patents or misappropriation of our other intellectual property rights. Additionally, proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business.

If our biocatalysts, or the genes that code for our biocatalysts, are stolen, misappropriated or reverse engineered, others could use these biocatalysts or genes to produce competing products.

Third parties, including our contract manufacturers, customers and those involved in shipping our biocatalysts often have custody or control of our biocatalysts. If our biocatalysts, or the genes that code for our biocatalysts, were stolen, misappropriated or reverse engineered, they could be used by other parties who may be able to reproduce these biocatalysts for their own commercial gain. If this were to occur, it would be difficult for us to challenge this type of use, especially in countries with limited intellectual property protection or in countries in which we do not have patents covering the misappropriated biocatalysts.

Confidentiality agreements with employees and others may not adequately prevent disclosures of trade secrets and other proprietary information.

We rely in part on trade secret protection to protect our confidential and proprietary information and processes. However, trade secrets are difficult to protect. We have taken measures to protect our trade secrets and proprietary information, but these measures may not be effective. We require employees and consultants to execute confidentiality agreements upon the commencement of an employment or consulting arrangement with us. These agreements generally require that all confidential information developed by the individual or made known to the individual by us during the course of the individual s relationship with us be kept confidential and not disclosed to third parties. These agreements also generally provide that inventions conceived by the individual in the course of rendering services to us shall be our exclusive property. Nevertheless, our proprietary information may be disclosed, third parties could reverse engineer our biocatalysts and others may independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and failure to obtain or maintain trade secret protection could adversely affect our competitive business position.

Competitors and potential competitors who have greater resources and experience than we do may develop products and technologies that make ours obsolete or may use their greater resources to gain market share at our expense.

The biocatalysis industry and each of our target markets are characterized by rapid technological change. Our future success will depend on our ability to maintain a competitive position with respect to technological advances. We are aware that other companies, including Verenium Corporation, Royal DSM N.V., or DSM, Danisco/ Genencor, Novozymes and E.I. Du Pont De Nemours and Company, or DuPont, have alternative methods for obtaining and generating genetic diversity or use mutagenesis techniques to produce genetic diversity. Academic institutions such as the California Institute of Technology, the Max Planck Institute and the Center for Fundamental and Applied Molecular Evolution (FAME), a jointly sponsored initiative between Emory University and Georgia Institute of Technology, are also working in this field. Technological development by others may result in our products and technologies, as well as products developed by our customers using our biocatalysts, becoming obsolete.

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We face intense competition in the pharmaceuticals market. There are a number of companies who compete with us throughout the various stages of a pharmaceutical product s lifecycle. Many large pharmaceutical companies have internal capabilities to develop and manufacture intermediates and APIs. These companies include many of our large innovator and generic pharmaceutical customers, such as Merck, Pfizer and Teva Pharmaceutical Industries Ltd. There are also many large, well-established fine chemical manufacturing companies, such as DSM, BASF Corporation and Lonza Group Ltd, that compete to supply pharmaceutical intermediates and APIs to our customers. We also face increasing competition from generic pharmaceutical manufacturers in low cost centers such as India and China.

In addition to competition from companies manufacturing APIs and intermediates, we face competition from companies that sell biocatalysts for use in the pharmaceutical market. There is competition from large industrial enzyme companies, such as Novozymes and Amano Enzyme Inc., whose industrial enzymes (for detergents, for example) are occasionally used in pharmaceutical processes. There is also competition in this area from several small companies with product offerings comprised primarily of naturally occurring biocatalysts or that offer biocatalyst optimization services.

We expect the biofuels industry to be extremely competitive, with competition coming from ethanol producers as well as other providers of alternative and renewable fuels. Significant competitors include companies such as: Novozymes, which has partnered with a number of companies and organizations on a regional basis to develop or produce biofuels, and recently opened a biofuel demonstration plant with Inbicon A/S of Denmark; Danisco/Genencor, which has entered into a definitive agreement to be acquired by Dupont, has formed a joint venture with DuPont, called DuPont Danisco Cellulosic Ethanol, or DDCE, and is marketing a line of cellulases to convert biomass into sugar; DSM, which received a grant from the U.S. Department of Energy to be the lead partner in a technical consortium including Abengoa Bioenergy New Technologies, and is developing cost-effective enzyme technologies; Mascoma Corporation, which has entered into a letter of intent with Valero Energy Corporation in January 2011 to build a commercial-scale cellulosic ethanol biorefinery; and BP, which is developing a commercial scale cellulosic ethanol facility through its affiliate Vercipia Biofuels. In addition, other companies are attempting to develop non-ethanol biofuels. DuPont has announced plans to develop and market biobutanol through Butamax Advanced Biofuels LLC, a joint venture with BP, and Virent Energy Systems Inc. is collaborating with Shell to develop thermochemical catalytic routes to produce biogasoline and biodiesel directly from sugars. Coskata, Inc. is developing a hybrid thermochemical-biocatalytic process to produce ethanol from a variety of feed stocks. Some or all of these competitors or other competitors, as well as academic, research and government institutions, are developing or may develop technologies for, and are competing or may compete with us in, the production of alternative fuels or biofuels.

As we pursue opportunities in other bioindustrial markets, we expect to face competition from numerous companies focusing on developing biocatalytic and other solutions for these markets, including a number of the companies described above.

Our ability to compete successfully will depend on our ability to develop proprietary products that reach the market in a timely manner and are technologically superior to and/or are less expensive than other products on the market. Many of our competitors have substantially greater production, financial, research and development, personnel and marketing resources than we do. In addition, certain of our competitors may also benefit from local government subsidies and other incentives that are not available to us. As a result, our competitors may be able to develop competing and/or superior technologies and processes, and compete more aggressively and sustain that competition over a longer period of time than we could. Our technologies and products may be rendered obsolete or uneconomical by technological advances or entirely different approaches developed by one or more of our competitors. As more companies develop new intellectual property in our markets, the possibility of a competitor acquiring patent or other rights that may limit our products or potential products increases, which could lead to litigation.

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In addition, various governments have recently announced a number of spending programs focused on the development of clean technology, including alternatives to petroleum-based fuels and the reduction of carbon emissions, two of our target markets. Such spending programs could lead to increased funding for our competitors or the rapid increase in the number of competitors within those markets.

Our limited resources relative to many of our competitors may cause us to fail to anticipate or respond adequately to new developments and other competitive pressures. This failure could reduce our competitiveness and market share, adversely affect our results of operations and financial position, and prevent us from obtaining or maintaining profitability.

We may need substantial additional capital in the future in order to expand our business.

Our future capital requirements may be substantial, particularly as we continue to develop our business and expand our biocatalyst discovery and development process. Although we believe that, based on our current level of operations and anticipated growth, our existing cash, cash equivalents and marketable securities will provide adequate funds for ongoing operations, planned capital expenditures and working capital requirements for at least the next 12 months, we may need additional capital if our current plans and assumptions change. Our need for additional capital will depend on many factors, including the financial success of our pharmaceutical business, whether we are successful in obtaining payments from customers, whether we can enter into additional collaborations, the progress and scope of our collaborative and independent research and development projects performed by us and our collaborators, the effect of any acquisitions of other businesses or technologies that we may make in the future, whether we decide to develop an internal manufacturing capability, and the filing, prosecution and enforcement of patent claims.

If our capital resources are insufficient to meet our capital requirements, and we are unable to enter into or maintain collaborations with partners that are able or willing to fund our development efforts or commercialize any products that we develop or enable, we will have to raise additional funds to continue the development of our technology and products and complete the commercialization of products, if any, resulting from our technologies. If future financings involve the issuance of equity securities, our existing stockholders would suffer dilution. If we were permitted to raise debt financing, we may be subject to restrictive covenants that limit our ability to conduct our business. We may not be able to raise sufficient additional funds on terms that are favorable to us, if at all. If we fail to raise sufficient funds and continue to incur losses, our ability to fund our operations, take advantage of strategic opportunities, develop products or technologies, or otherwise respond to competitive pressures could be significantly limited. If this happens, we may be forced to delay or terminate research or development programs or the commercialization of products resulting from our technologies, curtail or cease operations or obtain funds through collaborative and licensing arrangements that may require us to relinquish commercial rights, or grant licenses on terms that are not favorable to us. If adequate funds are not available, we will not be able to successfully execute our business plan or continue our business.

Business interruptions could delay us in the process of developing our products and could disrupt our sales.

Our headquarters is located in the San Francisco Bay Area near known earthquake fault zones and is vulnerable to significant damage from earthquakes. We are also vulnerable to other types of natural disasters and other events that could disrupt our operations, such as riot, civil disturbances, war, terrorist acts, flood, infections in our laboratory or production facilities or those of our contract manufacturers and other events beyond our control. We do not have a detailed disaster recovery plan. In addition, we do not carry insurance for earthquakes and we may not carry sufficient business interruption insurance to compensate us for losses that may occur. Any losses or damages we incur could have a material adverse effect on our cash flows and success as an overall business. Furthermore, Shell may terminate our collaborative research agreement if a force majeure event interrupts our collaboration activities for more than ninety days.

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Ethical, legal and social concerns about genetically engineered products and processes could limit or prevent the use of our products, processes, and technologies and limit our revenues.

Some of our products and processes are genetically engineered or involve the use of genetically engineered products or genetic engineering technologies. If we and/or our collaborators are not able to overcome the ethical, legal, and social concerns relating to genetic engineering, our products and processes may not be accepted. Any of the risks discussed below could result in increased expenses, delays, or other impediments to our programs or the public acceptance and commercialization of products and processes dependent on our technologies or inventions. Our ability to develop and commercialize one or more of our technologies, products, or processes could be limited by the following factors:

- public attitudes about the safety and environmental hazards of, and ethical concerns over, genetic research and genetically engineered products and processes, which could influence public acceptance of our technologies, products and processes;

- public attitudes regarding, and potential changes to laws governing ownership of genetic material, which could harm our intellectual property rights with respect to our genetic material and discourage collaborators from supporting, developing, or commercializing our products, processes and technologies; and

- governmental reaction to negative publicity concerning genetically modified organisms, which could result in greater government regulation of genetic research and derivative products. The subject of genetically modified organisms has received negative publicity, which has aroused public debate. This adverse publicity could lead to greater regulation and trade restrictions on imports of genetically altered products.

The biocatalysts that we develop have significantly enhanced characteristics compared to those found in naturally occurring enzymes or microbes. While we produce our biocatalysts only for use in a controlled industrial environment, the release of such biocatalysts into uncontrolled environments could have unintended consequences. Any adverse effect resulting from such a release could have a material adverse effect on our business and financial condition, and we may have exposure to liability for any resulting harm.

Compliance with stringent laws and regulations may be time consuming and costly, which could adversely affect the commercialization of our bioindustrial products.

Our bioindustrial products, including biofuels and chemicals, will need to meet a significant number of regulations and standards, including regulations imposed by the U.S. Department of Transportation, the U.S. Environmental Protection Agency, various state agencies and others. In addition, our bioindustrial products will be subject to foreign regulations if we attempt to produce or sell our products outside the United States. Any failure to comply, or delays in compliance, with the various existing and evolving industry regulations and standards could prevent or delay the commercialization of any bioindustrial products developed using our technologies and subject us to fines and other penalties.

We use hazardous materials in our business and we must comply with environmental laws and regulations. Any claims relating to improper handling, storage or disposal of these materials or noncompliance of applicable laws and regulations could be time consuming and costly and could adversely affect our business and results of operations.

Our research and development processes involve the use of hazardous materials, including chemical, radioactive, and biological materials. Our operations also produce hazardous waste. We cannot eliminate entirely the risk of accidental contamination or discharge and any resultant injury from these materials. Federal, state, and local laws and regulations govern the use, manufacture, storage, handling and disposal of, and human exposure to, these materials. We may be sued for any injury or contamination that results from our use or the use by third parties of these materials, and our liability may exceed our total assets.

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Although we believe that our activities conform in all material respects with environmental laws, there can be no assurance that violations of environmental, health and safety laws will not occur in the future as a result of human error, accident, equipment failure or other causes. Compliance with applicable environmental laws and regulations may be expensive, and the failure to comply with past, present, or future laws could result in the imposition of fines, third party property damage, product liability and personal injury claims, investigation and remediation costs, the suspension of production, or a cessation of operations, and our liability may exceed our total assets. Liability under environmental laws can be joint and several and without regard to comparative fault. Environmental laws could become more stringent over time imposing greater compliance costs and increasing risks and penalties associated with violations, which could impair our research, development or production efforts and harm our business.

We may be sued for product liability.

The design, development, manufacture and sale of our products involve an inherent risk of product liability claims and the associated adverse publicity. We may be named directly in product liability suits relating to drugs that are produced using our biocatalysts or that incorporate our intermediates and APIs. The intermediates and APIs that we produce or are produced for us by our manufacturing partners could be subject to quality control or contamination issues of which we are not aware. Claims could be brought by various parties, including customers who are purchasing products directly from us, other companies who purchase products from our customers or by the end users of the drugs. We could also be named as co-parties in product liability suits that are brought against our contract manufacturers who manufacture our pharmaceutical intermediates and APIs, such as Arch. Insurance coverage is expensive and may be difficult to obtain, and may not be available in the future on acceptable terms, or at all. We cannot assure you that our contract manufacturers will have adequate insurance coverage to cover against potential claims. In addition, although we currently maintain product liability insurance for our products in amounts we believe to be commercially reasonable, if the coverage limits of these insurance policies are not adequate, a claim brought against us, whether covered by insurance or not, could have a material adverse effect on our business, results of operations, financial condition and cash flows. This insurance may not provide adequate coverage against potential losses, and if claims or losses exceed our liability insurance coverage, we may go out of business. Moreover, we have agreed to indemnify some of our customers for certain claims that may arise out of the use of our products, which could expose us to significant liabilities.

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

In general, under Section 382 of the Internal Revenue Code, a corporation that undergoes an ownership change is subject to limitations on its ability to utilize its pre-change net operating loss carryforwards, or NOLs, to offset future taxable income. If the Internal Revenue Service challenges our analysis that our existing NOLs are not subject to limitations arising from previous ownership changes, our ability to utilize NOLs could be limited by Section 382 of the Internal Revenue Code. Future changes in our stock ownership, some of which are outside of our control, could result in an ownership change under Section 382 of the Internal Revenue Code. Furthermore, our ability to utilize NOLs of companies that we may acquire in the future may be subject to limitations. For these reasons, we may not be able to utilize a material portion of the NOLs reflected on our balance sheet, even if we attain profitability.

Risks Related to Owning our Common Stock

We are subject to anti-takeover provisions in our certificate of incorporation and bylaws and under Delaware law that could delay or prevent an acquisition of our company, even if the acquisition would be beneficial to our stockholders.

Provisions in our amended and restated certificate of incorporation and our bylaws may delay or prevent an acquisition of us. Among other things, our amended and restated certificate of incorporation and

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bylaws provide for a board of directors which is divided into three classes, with staggered three-year terms and provide that all stockholder action must be effected at a duly called meeting of the stockholders and not by a consent in writing, and further provide that only our board of directors, the chairman of the board of directors, our chief executive officers or president may call a special meeting of the stockholders. These provisions may also frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, who are responsible for appointing the members of our management team. Furthermore, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which prohibits, with some exceptions, stockholders owning in excess of 15% of our outstanding voting stock from merging or combining with us. Finally, our charter documents establish advanced notice requirements for nominations for election to our board of directors and for proposing matters that can be acted upon at stockholder meetings. Although we believe these provisions together provide for an opportunity to receive higher bids by requiring potential acquirers to negotiate with our board of directors, they would apply even if an offer to acquire our company may be considered beneficial by some stockholders.

Concentration of ownership among our existing officers, directors and principal stockholders may prevent other stockholders from influencing significant corporate decisions and depress our stock price.

Based on the number of shares outstanding as of December 31, 2010, our officers, directors and existing stockholders who hold at least 5% of our stock together beneficially own approximately 55.8% of our outstanding common stock. As of December 31, 2010, Shell and Biomedical Sciences Investment Fund Pte Ltd beneficially owned approximately 16.0% and 9.6% of our common stock, respectively. If these officers, directors, and principal stockholders or a group of our principal stockholders act together, they will be able to exert a significant degree of influence over our management and affairs and control matters requiring stockholder approval, including the election of directors and approval of mergers or other business combination transactions. The interests of this concentration of ownership may not always coincide with our interests or the interests of other stockholders. For instance, officers, directors, and principal stockholders, acting together, could cause us to enter into transactions or agreements that we would not otherwise consider. Similarly, this concentration of ownership may have the effect of delaying or preventing a change in control of our company otherwise favored by our other stockholders. This concentration of ownership could depress our stock price.

Our share price may be volatile which may cause the value of our common stock to decline and subject us to securities class action litigation.

The market price of shares of our common stock could be subject to wide fluctuations in response to many risk factors listed in this section, and others beyond our control, including:

- actual or anticipated fluctuations in our financial condition and operating results;
- the position of our cash, cash equivalents and marketable securities;
- actual or anticipated changes in our growth rate relative to our competitors;
- actual or anticipated fluctuations in our competitors operating results or changes in their growth rate;
- announcements of technological innovations by us, our collaborators or our competitors;
- announcements by us, our collaborators or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital commitments;
- any changes in Shell s biofuels strategy or timelines, or in our relationship with Shell, including any decision by Shell to terminate our collaboration or reduce the number of FTEs funded by Shell under our collaborative research agreement;

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any announcements or developments with respect to the Shell-Cosan joint venture;

additions or losses of one or more significant pharmaceutical products;

announcements or developments regarding pharmaceutical products manufactured using our biocatalysts, intermediates and APIs;

the entry into, modification or termination of collaborative arrangements;

additions or losses of customers;

additions or departures of key management or scientific personnel;

competition from existing products or new products that may emerge;

issuance of new or updated research reports by securities or industry analysts;

fluctuations in the valuation of companies perceived by investors to be comparable to us;

disputes or other developments related to proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our technologies;

changes in existing laws, regulations and policies applicable to our business and products, including the National Renewable Fuel Standard program, and the adoption or failure to adopt carbon emissions regulation;

announcement or expectation of additional financing efforts;

sales of our common stock by us, our insiders or our other stockholders;

share price and volume fluctuations attributable to inconsistent trading volume levels of our shares;

general market conditions in our industry; and

general economic and market conditions, including the recent financial crisis.

Furthermore, the stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. These broad market and industry fluctuations, as well as general economic, political and market conditions such as recessions, interest rate changes or international currency fluctuations, may negatively impact the market price of shares of our common stock. 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.

If securities or industry analysts do not publish research or reports about our business, or publish negative reports about our business, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that securities or industry analysts publish about us or our business. We do not have any control over these analysts. If one or more of the analysts who cover us downgrade our stock or change their opinion of our stock in a negative manner, our stock price would likely decline. If one or more of these analysts cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our stock price or trading volume to decline.

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

As a public company, we incur significant legal, accounting and other expenses that we did not incur as a private company. In addition, the Sarbanes-Oxley Act, as well as related rules implemented by the

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Securities and Exchange Commission and The NASDAQ Stock Market, impose various requirements on public companies. Our management and other personnel will need to devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations will increase our legal and financial compliance costs and will make some activities more time-consuming and costly. For example, we expect these rules and regulations to make it more expensive for us to maintain director and officer liability insurance.

In addition, the Sarbanes-Oxley Act requires, among other things, that we maintain effective internal control over financial reporting and disclosure controls and procedures. In particular, commencing in 2011, we must perform system and process evaluation and testing of our internal control over financial reporting to allow management and our independent registered public accounting firm to report on the effectiveness of our internal control over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act. Our compliance with Section 404 will require that we incur substantial accounting expense and expend significant management time on compliance-related issues. Moreover, if we are not able to comply with the requirements of Section 404 in a timely manner, our stock price could decline, and we could face sanctions, delisting or investigations by The NASDAQ Global Market, or other material adverse effects on our business, reputation, results of operations, financial condition or liquidity.

ITEM 1B. UNRESOLVED STAFF COMMENTS

Not applicable.

ITEM 2. PROPERTIES

Facilities

Our headquarters is located in Redwood City, where we occupy approximately 87,000 square feet of office and laboratory space. We are in the process of amending the leases for our Redwood City facilities. The lease for one of our buildings in Redwood City expired on February 1, 2011. We continue to occupy this building while the lease amendment is being negotiated. The current leases for our other buildings in Redwood City expire in April 2012, February 2013 and May 2013. Under the current leases for three of our facilities, we have an option to extend the lease for an additional term of five years for each part, provided that we provide notice to the landlord at least nine months prior to the expiration of the initial term of the lease for each part. We also have an option to extend the lease for a fourth building for an additional term of two years. We believe that the facilities that we currently lease are adequate for our needs for the immediate future and that, should it be needed, additional space can be leased to accommodate any future growth.

In Singapore, we occupy approximately 1,900 square meters of office and laboratory space within Singapore Science Park II. The term of the lease expires in July 2013. We believe that the facilities that we currently lease in Singapore are adequate for our needs for the immediate future and that, should it be needed, additional space can be leased to accommodate any future growth.

In Hungary, we occupy approximately 1,200 square meters of office and laboratory space. The term of the lease expires in July 2013. We have an option to extend the lease for an additional term of five years. We believe that the facilities that we currently lease are adequate for our needs for the immediate future and that, should it be needed, additional space can be leased to accommodate any future growth.

ITEM 3. LEGAL PROCEEDINGS

We are not currently a party to any material litigation or other material legal proceedings.

ITEM 4. REMOVED AND RESERVED

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PART II

ITEM 5. MARKET FOR REGISTRANT S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information

Our common stock is quoted on The NASDAQ Global Select Market, or NASDAQ, under the symbol CDXS. The following table sets forth the high and low sales prices per share of the common stock as reported on NASDAQ. Such quotations represent inter dealer prices without retail markup, markdown or commission and may not necessarily represent actual transactions.

Fiscal 2010	High	Low
First Quarter	$ n/a	$ n/a
Second Quarter(1)	14.98	8.65
Third Quarter	10.22	6.88
Fourth Quarter	12.00	8.79

(1) Our common stock commenced trading on NASDAQ on April, 22 2010. Prior to that date, there was no established public trading market for our common stock.

As of December 31, 2010, there were 423 shareholders of record. A substantially greater number of stockholders may be street name or beneficial holders, whose shares are held of record by banks, brokers and other financial institutions.

Dividend Policy

We have never declared or paid cash dividends on our common stock, and currently do not plan to declare dividends on shares of our common stock in the foreseeable future. We expect to retain our future earnings, if any, for use in the operation and expansion of our business. The payment of cash dividends in the future, if any, will be at the discretion of our board of directors and will depend upon such factors as earnings levels, capital requirements, our overall financial condition and any other factors deemed relevant by our board of directors.

Use of Proceeds from Public Offering of Common Stock

On April 27, 2010, we closed our IPO, in which we sold 6,000,000 shares of common stock at a price to the public of $13.00 per share. The aggregate offering price for shares sold in the offering was $78.0 million. The offer and sale of all of the shares in the IPO were registered under the Securities Act pursuant to a registration statement on Form S-1 (File No. 333-164044), which was declared effective by the SEC on April 21, 2010. The offering commenced as of April 21, 2010 and did not terminate before all of the securities registered in the registration statement were sold. Credit Suisse Securities (USA) LLC, Piper Jaffray, RBC Capital Markets Corporation and Pacific Crest Securities LLC, acted as the underwriters. We raised approximately $67.7 million in net proceeds after deducting underwriting discounts and commissions of $5.5 million and other offering expenses of $4.8 million. No payments were made by us to directors, officers or persons owning ten percent or more of our common stock or to their associates, or to our affiliates, other than payments in the ordinary course of business to officers for salaries and to non-employee directors as compensation for board or board committee service.

There has been no material change in the planned use of proceeds from our IPO as described in our final prospectus filed with the SEC on April 22, 2010 pursuant to Rule 424(b). We invested the funds received in registered money market funds and other marketable securities.

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Stock Price Performance Graph

The following graph compares our total common stock return with the total return for (i) the NASDAQ Composite Index and (ii) the NASDAQ Biotechnology Index for the period from April 22, 2010 (the date our common stock commenced trading on the NASDAQ) through December 31, 2010. The figures represented below assume an investment of $100 in our common stock at the closing price of $13.26 on April 22, 2010 and in the NASDAQ Composite Index and the NASDAQ Biotechnology Index on April 22, 2010 and the reinvestment of dividends into shares of common stock. The comparisons in the table are required by the SEC and are not intended to forecast or be indicative of possible future performance of our common stock. This graph shall not be deemed soliciting material or to be filed for purposes of Section 18 of the Exchange Act or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any of our filings under the Securities Act or the Exchange Act.

$100 investment in stock or index	Ticker	Apr-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10
Codexis	CDXS	100.00	102.71	77.98	66.06	67.50	61.16	72.40	77.22	71.04	79.94
Nasdaq Composite Index	IXIC	100.00	97.70	89.60	83.73	89.51	83.92	94.03	99.54	99.17	105.31
Nasdaq Biotechnology Index	NBI	100.00	101.30	90.19	86.13	90.01	87.44	96.40	99.88	97.72	104.46

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ITEM 6. SELECTED FINANCIAL DATA

The following selected consolidated financial data should be read together with our consolidated financial statements and accompanying notes and Management s Discussion and Analysis of Financial Condition and Results of Operations appearing elsewhere in this Form 10-K. The selected consolidated financial data in this section is not intended to replace our consolidated financial statements and the accompanying notes. Our historical results are not necessarily indicative of our future results.

We derived the consolidated statements of operations data for 2010, 2009 and 2008 and the consolidated balance sheets data as of December 31, 2010 and 2009 from our audited consolidated financial statements appearing elsewhere in this filing. The consolidated statements of operations data for 2007 and 2006 and the consolidated balance sheets data as of December 31, 2008, 2007 and 2006 have been derived from our audited consolidated financial statements not included in this filing. The data should be read in conjunction with the consolidated financial statements, related notes, and other financial information included herein.

	Years Ended December 31,				
	2010	2009	2008	2007	2006
	(In Thousands, Except Per Share Amounts)				
Consolidated Statements of Operations Data:					
Revenues:					
Product	$ 32,835	$ 18,554	$ 16,860	$ 11,418	$ 2,544
Related party collaborative research and development	66,148	62,656	30,239	8,481	863
Collaborative research and development	4,048	1,652	3,062	4,733	8,403
Government grants	4,073	46	317	701	317
Total revenues	107,104	82,908	50,478	25,333	12,127
Costs and operating expenses:					
Cost of product revenues	27,982	16,678	13,188	8,319	1,806
Research and development	52,405	54,725	45,554	35,644	17,257
Selling, general and administrative	33,841	29,871	35,709	19,713	11,880
Total costs and operating expenses	114,228	101,274	94,451	63,676	30,943
Loss from operations	(7,124)	(18,366)	(43,973)	(38,343)	(18,816)
Interest income	166	180	1,538	1,491	742
Interest expense and other, net	(1,199)	(2,037)	(2,365)	(2,533)	(724)
Loss before provision (benefit) for income taxes	(8,157)	(20,223)	(44,800)	(39,385)	(18,798)
Provision (benefit) for income taxes	384	66	327	(408)	(127)
Net loss	$ (8,541)	$ (20,289)	$ (45,127)	$ (38,977)	$ (18,671)
Net loss attributable to common stockholders per share of common stock, basic and diluted	$ (0.35)	$ (7.74)	$ (18.96)	$ (23.41)	$ (16.48)
Weighted average common shares used in computing net loss per share of common stock, basic and diluted	24,594	2,622	2,380	1,665	1,133

	December 31,				
	2010	2009	2008	2007	2006
	(In Thousands)				
Consolidated Balance Sheets Data:					
Cash, cash equivalents and marketable securities	$ 72,396	$ 55,563	$ 37,130	$ 84,070	$ 32,246
Working Capital	64,708	16,397	5,933	60,732	22,972

Total assets	141,300	99,036	70,882	113,541	46,659
Current and long-term financing obligations		7,942	13,681	17,477	4,073
Redeemable convertible preferred stock		179,672	132,746	132,746	77,513
Total stockholders equity (deficit)	107,361	(144,845)	(129,124)	(87,468)	(52,766)

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ITEM 7. MANAGEMENT S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis should be read in conjunction with our audited consolidated financial statements and the related notes that appear elsewhere in this Annual Report on Form 10-K. This Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. These statements are often identified by the use of words such as may, will, expect, believe, anticipate, intend, could, should, estimate, or continue, and similar expressions or variations. Such forward-looking statements are subject to risks, uncertainties and other factors that could cause actual results and the timing of certain events to differ materially from future results expressed or implied by such forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in the section titled Risk Factors, set forth in Part I, Item 1A of this Annual Report on Form 10-K and elsewhere in this report. The forward-looking statements in this Annual Report on Form 10-K represent our views as of the date of this Annual Report on Form 10-K. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except to the extent required by applicable law. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this Annual Report on Form 10-K.

Our proprietary technology platform enables the creation of optimized biocatalysts that make existing industrial processes faster, cleaner and more efficient than current methods and has the potential to make new industrial processes possible on a commercial scale. We have focused our biocatalyst development efforts on large and rapidly growing markets, including pharmaceuticals and advanced biofuels. We have commercialized our biocatalysts in the pharmaceutical industry and are developing biocatalysts for use in producing advanced biofuels under a multi-year research and development collaboration with Shell. We have enabled biocatalyst-based drug manufacturing processes at commercial scale and have delivered biocatalysts and drug products to some of the world s leading pharmaceutical companies. In our research and development collaboration with Shell, we are developing biocatalysts for use in producing advanced biofuels from renewable sources of non-food plant materials, known as cellulosic biomass. We are also using our technology platform to pursue biocatalyst-enabled solutions in other bioindustrial markets, including carbon management, chemicals and water treatment.

Biocatalysts are enzymes or microbes that initiate or accelerate chemical reactions. Manufacturers have historically used naturally occurring biocatalysts to produce many goods used in everyday life. However, inherent limitations in naturally occurring biocatalysts have restricted their commercial use. Our proprietary technology platform is able to overcome many of these limitations, allowing us to evolve and optimize biocatalysts to perform specific and desired chemical reactions at commercial scale.

To date, we have generated revenues primarily from collaborative research and development funding, pharmaceutical product sales and government grants. Our revenues have increased in each of the last three fiscal years, growing from $50.5 million in 2008, to $82.9 million in 2009 to $107.1 million in 2010.

Most of our revenues since inception have been derived from collaborative research and development arrangements, which accounted for 66%, 78% and 66% of our revenues in 2008, 2009 and 2010, respectively. Related party collaborative research and development received from Shell accounted for 60%, 76% and 62% of our revenues in 2008, 2009 and 2010, respectively. Our product sales have increased in each of the last three fiscal years, from $16.9 million in 2008, to $18.6 million in 2009 and to $32.8 million in 2010.

Notwithstanding our revenue growth, we have continued to experience significant losses as we have invested heavily in research and development and administrative infrastructure in connection with the growth in our business. In light of the growth in market acceptance of our products and services to date, we currently intend to increase our investment in research and development, such that we do not expect to

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achieve profitability on an annual basis prior to at least 2012. As of December 31, 2010, we had an accumulated deficit of $168.1 million. We incurred net losses of $45.1 million, $20.3 million and $8.5 million in the years ended December 31, 2008, 2009 and 2010, respectively.

We targeted the pharmaceutical industry as the first market for our products and services. In this market, we have historically entered into collaborations, which have involved complex service and intellectual property agreements under which we research and develop optimized biocatalysts for innovator pharmaceutical companies in connection with their drug development efforts. In these collaborations, we typically receive revenues in the form of one or more of the following: up-front payments, milestone payments, payments based upon the number of full-time employee equivalents, or FTEs, engaged in related research and development activities and licensing fees and royalties.

Our pharmaceutical product offerings include biocatalysts, pharmaceutical intermediates, active pharmaceutical ingredients, or APIs, and Codex Biocatalyst Panels and Kits. Our pharmaceutical customers incorporate our biocatalysts into the manufacturing processes used to produce their drugs. Our intermediates are complex chemical substances that have been manufactured by, or on behalf of, us using our biocatalysts. Drug manufacturers use intermediates to produce the APIs used in their drugs. We believe that major pharmaceutical manufacturers are increasingly willing to outsource portions of their own internal manufacturing and to purchase intermediates that are difficult or expensive to manufacture. Our Codex Biocatalyst Panels are tools that provide genetically diverse variants of our proprietary biocatalysts, which allow our customers to screen our biocatalysts for desired activity that is applicable to a particular pharmaceutical manufacturing process. We view our Codex Biocatalyst Panels, which we began selling in 2007, as a way to build early and broad awareness of the power and utility of our technology platform. We introduced our Codex Biocatalyst Kits in 2010, which provide subsets of the Panel biocatalysts in individual vials for the same purpose. We plan to increase our efforts to expand use of our Codex Biocatalyst Panels and Kits among our current and potential customers.

Our pharmaceutical service offerings include screening and optimization services. We use our screening services to test our customers pharmaceutical materials against our existing libraries of biocatalysts to determine whether our existing biocatalysts produce any desired activities. We then use our optimization services to improve the performance of these biocatalysts to meet customer requirements. We also use our optimization services to improve biocatalysts identified by our customers through their use of our Codex Biocatalyst Panels and Kits. The use of our panels, as well as these services, has led to sales of biocatalysts to our pharmaceutical customers.

We provide our biocatalysts, Codex Biocatalyst Panels and Kits, screening and optimization services and intermediates to our innovator customers and provide intermediates to our generics customers. We have also launched several new intermediates and APIs for the generic equivalents of branded pharmaceutical products, including Singulair and Cymbalta, in markets where these products are not subject to patent protection, and intend to sell these same intermediates and APIs for use in other markets when the patent protection for each product expires. We sell our products primarily to pharmaceutical manufacturers through our small direct sales and business development force in the United States and Europe.

In the biofuels market, we entered into a research agreement with Shell in 2006. The goal of this collaboration was to develop biocatalysts to break down renewable sources of non-food plant materials, known as cellulosic biomass, and convert them to fuels. In connection with this collaboration, we received up-front payments, research and development service payments and milestone payments.

Based on the success of this initial collaboration, in 2007, we entered into a new, expanded multi-year research and development collaboration with Shell to develop biocatalysts to convert cellulosic biomass into fermentable sugars that are used in the production of fuels and related products and to convert these sugars into fuels and related products. We received an up-front fee and are currently receiving FTE payments under this collaboration. This up-front fee is refundable under certain conditions, such as a

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change in control in which we are acquired by a competitor of Shell. This refundability lapses ratably over a five-year period beginning on November 1, 2007, on a straight-line basis. In March 2009, we agreed to devote to the research collaboration 128 FTEs, which are required to be funded by Shell at an annual base rate per FTE of $441,000 for FTEs located in the United States, and $350,000 for FTEs located in Hungary. These annual base rates per FTE are subject to annual adjustments based on changes in the Consumer Price Index, or CPI, for the United States and Hungary for each subsequent year of the collaboration

Shell has the right to terminate the collaborative research agreement upon nine months notice. Shell also has the right to reduce the number of funded FTEs, with any one reduction not to exceed 98 funded FTEs, following advance written notice. The required notice period ranges from 30 to 270 days. Following any such reduction, Shell is subject to a standstill period of between 90 and 360 days during which period Shell cannot provide notice of any further FTE reductions. The notice and standstill periods are dependent on the number of funded FTEs reduced, with the length of notice and standstill periods increasing commensurate with the number of FTEs reduced. We have not received any notice of FTE reduction as of the date of this Annual Report on Form 10-K.

The term of the agreement extends through November 2012. During the term of the agreement, we are required to act exclusively with Shell as it relates to the rights and research described in the arrangement and may not conduct research or contract to conduct research, for another party in the field of use. Under this agreement, we also have a right of first negotiation but not an obligation to manufacture any biocatalysts developed under the collaborative research agreement if Shell decides to out-source the manufacture of such biocatalysts.

We are also eligible for annual milestone payments of up to an aggregate of $30.0 million over the term of the agreement, contingent upon the achievement of certain technical goals beginning in 2009, and a milestone payment of $10.0 million upon achievement of certain commercial goals. In 2009, we met or exceeded each of our technical goals under the collaborative research agreement by the applicable deadlines and earned milestone payments of $4.6 million. In 2010, we met or exceeded seven out of the eight technical goals under the collaborative research agreement by the applicable deadlines and earned milestone payments of $7.4 million. As of December 31, 2010, we remain eligible for $16.5 in milestone payments related to the technical goals and $10.0 million in milestone payments for the commercial goals. Shell will also be required to pay us a royalty per gallon with respect to certain products manufactured using our technology platform, including liquid fuels, fuel additives and lubricants, if Shell or any of its licensees manufactures such products. With respect to cellulosic biomass converted into sugars, Shell agreed to pay us a royalty per gallon of fuel product made from those sugars. With respect to sugars converted into fuel, Shell agreed to pay us a separate royalty per gallon of fuel product. We may be entitled to receive one or both of these royalties depending on whether Shell uses our technology to commercialize one or both of these steps.

Under our research and development collaboration with Shell, we retain ownership of all intellectual property we develop, other than patent rights related to certain fuel innovations, and Shell will have an exclusive license to such intellectual property we develop. We have agreed to work exclusively with Shell until November 2012 to convert cellulosic biomass into fermentable sugars that are used in the production of fuels and related products and to convert these sugars into fuels and related products. However, Shell is not required to work exclusively with us, and could develop or pursue alternative technologies that it decides to use for commercialization purposes instead of any technology developed under our collaborative research agreement. Even if Shell decides to commercialize products based on our technologies, they have no obligation to purchase their biocatalyst supply from us. If Shell chooses to commercialize any biofuels products developed through our collaboration, we believe that the combination of our technology platform with Shell s proven project development capabilities and resources could enable a biofuels solution that extends from the conversion of cellulosic biomass into biofuels to delivery and distribution of refined biofuels to consumers at the pump.

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One element of our collaboration with Shell relates to the development of cellulosic ethanol. In connection with our collaboration with Shell, we entered into a multi-party collaborative research and license agreement with Iogen Energy Corporation, or Iogen, and Shell in July 2009, which is focused on the conversion of cellulosic biomass to ethanol for commercial scale production. Iogen has agreed to pay us a royalty per gallon with respect to certain fuel products, which include liquid fuels, fuel additives and lubricants, that are covered by inventions jointly made by us and Iogen, but that are solely owned by Iogen. We will be entitled to collect royalties from Shell or Iogen for any use of our biofuels technology by Shell or Iogen. Shell can choose to commercialize cellulosic ethanol manufactured using our technology independently, or in collaboration with Iogen.

In October of 2010, we acquired Maxygen Inc s directed evolution technology patent portfolio for net consideration of $20.2 million including $20.0 million paid to Maxygen, related transaction costs of $0.7 million and a royalty payable extinguishment of $0.5 million. In conjunction with this transaction, we terminated our existing license agreement with Maxygen including terminating our obligation to pay biofuels royalties to Maxygen.

Under the terms of our previous license agreement with Maxygen, we were obligated to pay Maxygen a significant portion of certain types of consideration received in connection with our biofuels research and development, including our collaboration with Shell. Specifically, fees in connection with consideration received in the form of (1) up-front option and/or license fees, (2) FTE funding for biofuels research, (3) milestone payments, (4) payments from the sale of our equity securities and (5) payments in connection with the commercialization of energy products made with a biocatalyst developed using the licensed technology. The actual fees paid to Maxygen were depended on the amount, timing and type of consideration received, including payments from the sale of our equity securities to Shell and payments in connection with the sale of fuel products made with a biocatalyst developed using the licensed technology and/or research and development activities.

In the case of consideration received from the sale of our equity securities to Shell, we were obligated to pay Maxygen 20% of any excess paid above $5.96 per share, the price per share of our Series D preferred stock. With regard to FTE funding, we were obligated to pay Maxygen 20% of the portion of any consideration received in excess of a specified amount, which was initially $350,000 per year starting in September 2006, but was adjusted annually based on the published CPI for the United States. We were also obligated to reimburse up to 20% of the costs incurred by Maxygen related to the prosecution and maintenance of the patents licensed from Maxygen relating to our core technology.

Prior to our acquisition of the Maxygen IP and in connection with all consideration received from Shell relating to our biofuels research and development collaboration, we incurred fees owed to Maxygen of $0.9 million, $5.5 million and $1.2 million for 2008, 2009 and 2010, respectively, of which $0.9, $1.4 million and $1.2 million, respectively, were payments owed to Maxygen in connection with Shell s FTE funding. Our royalty payments to Maxygen relating to FTE funding were less than 5% of the total FTE payments we received from Shell in those periods.

Our strategy for collaborative arrangements is to retain substantial participation in the future economic value of our technology while receiving current cash payments to offset research and development costs and working capital needs. These agreements are complex and have multiple elements that cover a variety of present and future activities. In addition, certain elements of these agreements are intrinsically difficult to separate and treat as separate units for accounting purposes, especially exclusivity payments. Consequently, we expect to recognize these exclusivity payments over the term of the exclusivity period.

We have limited internal manufacturing capacity at our headquarters in Redwood City, California. We expect to rely on third-party manufacturers for commercial production of our biocatalysts for the foreseeable future. Our in-house manufacturing is dedicated to producing both our Codex Biocatalyst Panels and Kits and biocatalysts for use by our customers in pilot scale production. We also supply initial

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commercial quantities of biocatalysts for use by our collaborators to produce pharmaceutical intermediates and manufacture biocatalysts that we sell.

We rely on two primary contract manufacturers, CPC Biotech srl, or CPC, located in Italy, and Lactosan GmbH & Co. KG, or Lactosan, located in Austria, to manufacture substantially all of the biocatalysts used in our pharmaceutical business. We have qualified other contract manufacturers for the manufacture of our biocatalysts, but we do not currently use them for any of our supply commitments. In addition, we contract with other suppliers for the manufacture of our pharmaceutical intermediates and APIs. Since 2006, Arch Pharmalabs Limited, or Arch, of Mumbai, India has manufactured all of our commercialized drug-related products for sale to generic API manufacturers. We are party to a number of agreements with Arch that govern the commercialization of various current and future products for supply into the generic and innovator marketplaces. In addition, in February 2010, we entered into a collaboration with Dishman Pharmaceuticals and Chemicals, Ltd., or Dishman, a global manufacturer of intermediates and APIs located in India, whereby we will work exclusively with Dishman, and Dishman will work exclusively with us, with respect to the manufacture and supply of intermediates and APIs using our biocatalysts for a select group of innovator pharmaceutical companies.

We intend to pursue the establishment of large-scale enzyme production capacity for our bioindustrial markets. We are evaluating whether to invest in a new facility, to enter into production capacity arrangements or to lease or acquire a pre-existing facility. Such a facility could be used to produce larger quantities of enzymes for our biofuels, carbon capture, chemicals and water treatment markets.

Our revenue stream is diversified across various industries, which should mitigate our exposure to cyclical downturns or fluctuations in any one market. Revenues during 2008, 2009 and 2010 were derived from the pharmaceuticals and biofuels markets, and consisted of collaborative research and development revenues, product sales and government grants, which are separately identified in our consolidated statements of operations. Based on our existing arrangements, we believe that revenues from both our pharmaceutical and biofuels customers should be predictable over the near term. The revenues that we expect to recognize from our collaborative research agreement with Shell should provide a high degree of visibility into our aggregate revenues for the foreseeable future.

We actively seek contract manufacturers who are willing to invest in capital equipment to manufacture our products at commercial scale. As a result, we are heavily dependent on the availability of manufacturing capacity at, and the reliability of, our contract manufacturers. We also pursue collaborations with industry leaders that allow us to leverage our collaborators engineering, manufacturing and commercial expertise, their distribution infrastructure and their ability to fund commercial scale production facilities. If our collaborators choose to utilize our technology to commercialize new products, we expect our collaborators will finance, build and operate the larger, more expensive facilities for the intermediate or end products in our markets, which will allow us to expand into new markets without having to finance or operate large industrial facilities.

Revenues and Operating Expenses

Revenues

Our revenues are comprised of collaborative research and development revenues, product revenues and government grants.

Collaborative research and development revenues include license, technology access and exclusivity fees, FTE payments, milestones, royalties, and optimization and screening fees. We report our collaborative research and development revenues under two categories consisting of revenues (i) from related parties and (ii) from all other collaborators. Related party collaborative research and development revenues consist of revenues from Shell.

Product revenues consist of sales of biocatalysts, intermediates, APIs and Codex Biocatalyst Panels and Kits.

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Government grants consist of payments from government entities. The terms of these grants generally provide us with cost reimbursement for certain types of expenditures in return for research and development activities over a contractually defined period. Historically, we have received government grants from Germany, Singapore and the United States and expect to receive additional grants in the future.

Cost of Product Revenues

Cost of product revenues includes both internal and third-party fixed and variable costs including amortization of purchased technology, materials and supplies, labor, facilities and other overhead costs associated with our product revenues.

Research and Development Expenses

Research and development expenses consist of costs incurred for internal projects as well as partner-funded collaborative research and development activities. These costs include license and royalty fees paid to Maxygen prior to our acquisition of the Maxygen IP, for consideration that we receive in connection with our biofuels collaboration, our direct and research-related overhead expenses, which include salaries and other personnel-related expenses, facility costs, supplies, depreciation of facilities, and laboratory equipment, as well as research consultants and the cost of funding research at universities and other research institutions, and are expensed as incurred. License and royalty fees paid to Maxygen fluctuated depending on the timing and type of consideration received from Shell in connection with our biofuels research and development collaboration. Costs to acquire technologies that are utilized in research and development and that have no alternative future use are expensed when incurred. Our research and development efforts devoted to our internal product and process development projects increased from 47 projects in 2008, to 62 projects in 2009 and to 57 projects in 2010. Our internal research and development projects are typically completed in 12 to 24 months, and generally the costs associated with any single internal project during these periods were not material.

Selling, General and Administrative Expenses

Selling, general and administrative expenses consist of compensation expenses (including stock-based compensation), hiring and training costs, consulting and service provider expenses (including patent counsel related costs), marketing costs, occupancy-related costs, depreciation and amortization expenses, and travel and relocation expenses.

Critical Accounting Policies and Estimates

Management s discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements. The consolidated financial statements have been prepared in conformity with generally accepted accounting principles in the United States and include our accounts and the accounts of our wholly-owned subsidiaries. The preparation of our consolidated financial statements requires our management to make estimates, assumptions, and judgments that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the applicable periods. Management bases its estimates, assumptions and judgments on historical experience and on various other factors that are believed to be reasonable under the circumstances. Different assumptions and judgments would change the estimates used in the preparation of our consolidated financial statements, which, in turn, could change the results from those reported. Our management evaluates its estimates, assumptions and judgments on an ongoing basis.

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The critical accounting policies requiring estimates, assumptions, and judgments that we believe have the most significant impact on our consolidated financial statements are described below.

Revenue Recognition

When evaluating multiple element arrangements, we consider whether the components of each arrangement represent separate units of accounting. Application of the standard requires subjective determinations and requires management to make judgments about the fair values of each individual element and whether it is separable from other aspects of the contractual relationship. Revenue arrangements with multiple components are divided into separate units of accounting if certain criteria are met, including whether the delivered component has stand-alone value to the customer, and whether there is objective and reliable evidence of the fair value of the undelivered items. Consideration received is allocated among the separate units of accounting based on their respective fair values. Applicable revenue recognition criteria are then applied to each of the units.

Revenues are recognized when the four basic revenue recognition criteria are met: (1) persuasive evidence of an arrangement exists; (2) products have been delivered, transfer of technology has been completed or services have been rendered; (3) the fee is fixed or determinable; and (4) collectibility is reasonably assured.

Our primary sources of revenues consist of collaborative research and development agreements, product revenues and government grants. Collaborative research and development agreements typically provide us with multiple revenue streams, including up-front fees for licensing, exclusivity and technology access, fees for FTE services and the potential to earn milestone payments upon achievement of contractual criteria and royalty fees based on future product sales or cost savings by our customers.

For each source of collaborative research and development revenues, product revenues and grant revenues, we apply the above revenue recognition criteria in the following manner:

Up-front fees received in connection with collaborative research and development agreements, including license fees, technology access fees and exclusivity fees, are deferred upon receipt, are not considered a separate unit of accounting and are recognized as revenues over the relevant performance periods under the agreements, as discussed below.

Revenues related to FTE services are recognized as research services are performed over the related performance periods for each contract. We are required to perform research and development activities as specified in each respective agreement. The payments received are not refundable and are based on a contractual reimbursement rate per FTE working on the project. When up-front payments are combined with FTE services in a single unit of accounting, we recognize the up-front payments using the proportionate performance method of revenue recognition based upon the actual amount of research and development labor hours incurred relative to the amount of the total expected labor hours to be incurred by us, up to the amount of cash received. In cases where the planned levels of research services fluctuate substantially over the research term, we are required to make estimates of the total hours required to perform our obligations. Research and development expenses related to FTE services under the collaborative research and development agreements approximate the research funding over the term of the respective agreements.

Revenues related to milestones that are determined to be at risk at the inception of the arrangement and substantive are recognized upon achievement of the milestone event and when collectability is reasonably assured. Milestone payments are triggered either by the results of our research efforts or by events external to us, such as our collaboration partner achieving a revenue target. Fees associated with milestones for which performance was not at risk at the inception of the arrangement or that are determined not to be substantive are accounted for in the same manner as the up-front fees, provided collectability is reasonably assured.

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We recognize revenues from royalties based on licensees sales of products using our technologies. Royalties are recognized as earned in accordance with the contract terms when royalties from licensees can be reasonably estimated and collectability is reasonably assured.

Product revenues are recognized once passage of title and risk of loss has occurred and contractually specified acceptance criteria have been met, provided all other revenue recognition criteria have also been met. Product revenues consist of sales of biocatalysts, intermediates and APIs, and Codex Biocatalyst Panels. Cost of product revenues includes both internal and third party fixed and variable costs including amortization of purchased technology, materials and supplies, labor, facilities and other overhead costs associated with our product revenues.

We license mutually agreed upon third party technology for use in our research and development collaboration with Shell. We record the license payments to research and development expense and offset related reimbursements received from Shell. Payments made by Shell to us are direct reimbursements of our costs. We account for these direct reimbursable costs as a net amount, whereby no expenses or revenues are recorded for the costs reimbursed by Shell. For any payments not reimbursed by Shell, we will recognize these as expenses in the statement of operations. We elected to present the reimbursement from Shell as a component of our research and development expense since presenting the receipt of payment from Shell as revenues does not reflect the substance of the arrangement.

We receive payments from government entities in the form of government grants. Government grants are agreements that generally provide us with cost reimbursement for certain types of expenditures in return for research and development activities over a contractually defined period. Revenues from government grants are recognized in the period during which the related costs are incurred, provided that the conditions under which the government grants were provided have been met and we have only perfunctory obligations outstanding.

Shipping and handling costs charged to customers are recorded as revenues. Shipping costs are included in our cost of product revenues. Such charges were not significant in any of the periods presented.

Stock-Based Compensation

Prior to January 1, 2006, we accounted for stock-based employee compensation arrangements using the intrinsic value method required at the time. Under the intrinsic value method, compensation expense for employees is based on the intrinsic value of the option, determined as the excess, if any, of the fair value of the common stock over the exercise price of the option on the date of grant. Historically, our stock options have been granted with exercise prices at or above the estimated fair value of our common stock on the date of grant.

Effective January 1, 2006, we began recognizing compensation expense related to share-based transactions, including the awarding of employee stock options, based on the estimated fair value of the awards granted. We adopted this fair value method using the prospective transition method, as options granted prior to January 1, 2006 were measured using the minimum value method for the pro forma disclosures previously required. In accordance with the prospective transition method, we continued to account for non-vested employee share-based awards outstanding at the date of adoption using the intrinsic value method. All awards granted, modified or settled after January 1, 2006, have been accounted for using the fair value method.

We account for stock options issued to non-employees based on their estimated fair value determined using the Black-Scholes option-pricing model. The fair value of the options granted to non-employees is remeasured as they vest, and the resulting increase in value, if any, is recognized as expense during the period the related services are rendered.

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We have estimated the fair value of our stock option grants on or after January 1, 2006 using the Black-Scholes option-pricing model. We calculate the estimated volatility rate based on selected companies in similar markets, due to a lack of historical information regarding the volatility of our stock price. We will continue to analyze the historical stock price volatility assumption as more historical data for our common stock becomes available. Due to our limited history of grant activity, we calculate the expected life of options granted to employees using the simplified method permitted by the United States Securities Exchange Commission or SEC as the average of the total contractual term of the option and its vesting period. The risk-free rate assumption was based on U.S. Treasury instruments whose terms were consistent with the terms of our stock options. The expected dividend assumption was based on our history and expectation of dividend payouts.

Estimation of Fair Value of Warrants to Purchase Preferred Stock

Prior to our IPO, outstanding warrants to purchase shares of our preferred stock were accounted for as liabilities and were adjusted to their fair value at the end of each reporting period. Warrants issued in connection with debt arrangements resulted in an aggregate gain of $0.1 million attributable to a decrease in the fair value of the warrant liability recognized in interest expense and other, net in the consolidated statements of operations during 2008. In 2009, a loss of $0.6 million was recognized in interest expense and other, net as a result of warrant liability measurement. In 2010, a loss of $0.7 million was recognized in interest expense and other, net due to the warrant liability measurement.

Upon closing of our IPO and the conversion of the underlying preferred stock to common stock, all outstanding warrants to purchase shares of preferred stock were automatically converted into warrants to purchase shares of our common stock. The aggregate fair value of these warrants upon closing of our IPO was $2.7 million which was reclassified from liabilities to additional paid-in capital, a component of stockholders equity, and we ceased recording any related periodic fair value adjustments. We estimated the fair value of these warrants on an as-if converted basis at April 22, 2010 (the date of our IPO), using the Black-Scholes option pricing model, the remaining contractual term of the warrant, risk-free interest rates and expected dividends on and expected volatility of the price of the underlying common stock. These estimates, especially the market value of the underlying common stock and the expected volatility, are judgmental.

Impairment of Goodwill and Intangible Assets and Other Long-lived Assets

We assess impairment of long-lived assets, including goodwill, on at least an annual basis and test long-lived assets for recoverability when events or changes in circumstances indicate that their carrying amount may not be recoverable. Circumstances which could trigger a review include, but are not limited to: significant decreases in the market price of the asset; significant adverse changes in the business climate or legal factors; accumulation of costs significantly in excess of the amount originally expected for the acquisition or construction of the asset; current period cash flow or operating losses combined with a history of losses or a forecast of continuing losses associated with the use of the asset; or current expectation that the asset will more likely than not be sold or disposed of significantly before the end of its estimated useful life.

Recoverability is assessed based on the sum of the undiscounted cash flows expected to result from the use and the eventual disposal of the asset. An impairment loss is recognized in the consolidated statements of operations when the carrying amount is not recoverable and exceeds fair value, which is determined on a discounted cash flow basis.

We make estimates and judgments about future undiscounted cash flows and fair value. Although our cash flow forecasts are based on assumptions that are consistent with our plans, there is significant exercise of judgment involved in determining the cash flows attributable to a long-lived asset over its estimated remaining useful life. Our estimates of anticipated future cash flows could be reduced significantly in the

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future. As a result, the carrying amount of our long-lived assets could be reduced through impairment charges in the future. Changes in estimated future cash flows could also result in a shortening of estimated useful life of long-lived assets including intangibles for depreciation and amortization purposes.

Income Tax Provision

We use the liability method of accounting for income taxes, whereby deferred tax assets or liability account balances are calculated at the balance sheet date using current tax laws and rates in effect for the year in which the differences are expected to affect taxable income. Valuation allowances are provided when necessary to reduce deferred tax assets to the amount that will more likely than not be realized.

We make certain estimates and judgments in determining income tax expense for financial statement purposes. These estimates and judgments occur in the calculation of tax credits, benefits and deductions and in the calculation of certain tax assets and liabilities, which arise from differences in the timing of recognition of revenues and expenses for tax and financial statement purposes. Significant changes to these estimates may result in an increase or decrease to our tax provision in a subsequent period.

In assessing the realizability of deferred tax assets, we consider whether it is more likely than not that some portion or all of the deferred tax assets will be realized on a jurisdiction by jurisdiction basis. The ultimate realization of deferred tax assets is dependent upon the generation of taxable income in the future. We have recorded a deferred tax asset in jurisdictions where ultimate realization of deferred tax assets is more likely than not to occur.

We make estimates and judgments about our future taxable income that are based on assumptions that are consistent with our plans and estimates. Should the actual amounts differ from our estimates, the amount of our valuation allowance could be materially impacted. Any adjustment to the deferred tax asset valuation allowance would be recorded in the income statement for the periods in which the adjustment is determined to be required.

On January 1, 2007, we adopted the Financial Accounting Standards Board, or FASB, standard for accounting for uncertainty in income taxes. The revised standard, now codified under the Income Taxes Topic in the FASB Accounting Standards Codification clarifies the accounting for uncertainty in income taxes recognized in an enterprise s financial statements. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step is to estimate and measure the tax benefit as the largest amount that is more than 50% likely of being realized upon ultimate settlement. It is inherently difficult and subjective to estimate such amounts, as this requires us to determine the probability of various possible outcomes. We consider many factors when evaluating and estimating our tax positions and tax benefits, which may require periodic adjustments and may not accurately anticipate actual outcomes.

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Results of Operations

Financial Operations Overview

The following table shows the amounts from our consolidated statements of operations for the periods presented (in thousands).

	Years Ended December 31,			% of Total Revenues		
	2010	2009	2008	2010	2009	2008
Revenues:						
Product	$ 32,835	$ 18,554	$ 16,860	30%	22%	33%
Related party collaborative R&D	66,148	62,656	30,239	62%	76%	60%
Collaborative R&D	4,048	1,652	3,062	4%	2%	6%
Government grants	4,073	46	317	4%	0%	1%
Total Revenues	107,104	82,908	50,478	100%	100%	100%
Costs and operating expenses:						
Cost of product revenues	27,982	16,678	13,188	26%	20%	26%
Research and development	52,405	54,725	45,554	49%	66%	90%
Selling, general and administrative	33,841	29,871	35,709	32%	36%	71%
Total costs and operating expenses	114,228	101,274	94,451	107%	122%	187%
Loss from operations	(7,124)	(18,366)	(43,973)	nm	nm	nm
Interest income	166	180	1,538	0%	0%	3%
Interest expense and other, net	(1,199)	(2,037)	(2,365)	nm	nm	nm
Loss before provision for income taxes	(8,157)	(20,223)	(44,800)	nm	nm	nm
Provision for income taxes	384	66	327	0%	0%	1%
Net loss	$ (8,541)	$ (20,289)	$ (45,127)	nm	nm	nm

NM = not meaningful

Years Ended December 31, 2010 and 2009

Revenues

	Years Ended December 31,		Change	
(In Thousands)	2010	2009	$	%
Product	$ 32,835	$ 18,554	$ 14,281	77%
Related party collaborative R&D	66,148	62,656	3,492	6%
Collaborative R&D	4,048	1,652	2,396	145%
Government grants	4,073	46	4,027	nm
Total revenues	$ 107,104	$ 82,908	$ 24,196	29%

Revenues increased during the year ended December 31, 2010 compared to the year ended December 31, 2009 primarily due to increases from product sales, collaborative research and development projects and government grants.

Product revenues increased $14.3 million in 2010 compared to 2009 primarily due to increased sales to Merck, and increased product sales to our generics customers.

Related party collaborative research and development revenues increased $3.5 million in 2010 compared to 2009 primarily due to additional milestone achievements which generated $2.8 million in revenues, and an increase in the number of FTEs engaged in our research and development collaboration

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with Shell and the contractual increases in the billing rates for FTEs. The expansion of this collaboration resulted in an increase in the number of contractual FTEs from an average of 126 in 2009 to an average of 128 in 2010.

Collaborative research and development revenues increased in 2010 compared to 2009 primarily due to pharmaceutical research services performed under the December 2009 research agreement with Teva Pharmaceutical Industries, Ltd.

Government grant revenues increased in 2010 due to the recognition of a grant from the Singapore Economic Development Board (EDB) for $3.2 million and a grant from the U.S. Department of Energy of $0.9 million.

Our top five customers accounted for 85% and 90% of our total revenues in 2010 and 2009, respectively. Shell accounted for 62% and 76% of our total revenues in 2010 and 2009, respectively.

Cost of Product Revenues

	Years Ended December 31,		Change	
(In Thousands)	**2010**	**2009**	**$**	**%**
Cost of revenues:				
Product	$ 27,982	$ 16,678	$ 11,304	68%
Gross profit:				
Product	$ 4,853	$ 1,876	$ 2,977	nm
Product gross margin %	15%	10%		

Cost of product revenues increased $11.3 million in 2010 compared to 2009 primarily due to an increase in product sales. Gross margins in 2010 increased to 15% from 10% in 2009, due to certain higher margin products sales during 2010 and a decrease in inventory write downs of approximately $0.6 million in 2010 compared to 2009 due to the closure of our Julich, Germany facility in 2009.

Operating Expenses

	Years Ended December 31,		Change	
(In Thousands)	**2010**	**2009**	**$**	**%**
Research and development	$ 52,405	$ 54,725	$ (2,320)	-4%
Selling, general and administrative	33,841	29,871	3,970	13%
Total operating expenses	$ 86,246	$ 84,596	$ 1,650	2%

Research and Development. Research and development expenses decreased $2.3 million in 2010 compared to 2009 primarily due to a $4.3 million reduction in royalty fees owed to Maxygen. As a result of our acquisition of the Maxygen IP in October 2010, we are no longer obliged to pay royalties to Maxygen. Through October 2010, we incurred $1.2 million of royalties owed Maxygen. In 2009, we paid $3.2 million to Maxygen as a royalty related to Shell s increased equity investment in our company and $2.3 million related to revenues generated under our biofuels program with Shell. Additionally, outside service costs in 2010 declined by $1.3 million, primarily related to our 2009 investment and joint development agreement with CO_2 Solution. The decreases in research and development expenses were partially offset by increase in depreciation expense of $1.8 million due to leasehold improvements for lab space expansion and capital equipment acquisitions. Research and development expenses included stock-based compensation expense of $3.4 million and $2.3 million during 2010 and 2009, respectively. The stock-based compensation expense increase is attributable to additional options granted and outstanding during 2010 compared to 2009.

Selling, General and Administrative. Selling, general and administrative expenses increased $4.0 million in 2010 compared to 2009 primarily due to a $4.6 million increase in compensation expenses

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(including stock-based compensation) as we increased headcount due to our public company readiness efforts. Additionally, we had increased spending on outside accounting and auditing services by $0.9 million due to efforts associated with being a public company. This was partially offset by decreases in cost for consultants, contractors and outside legal services of $2.3 million as we decreased our dependence on outside service providers. Selling, general and administrative expenses included stock-based compensation expense of $5.4 million and $2.5 million during 2010 and 2009, respectively. The stock-based compensation expense increase is attributable to additional options granted and outstanding during 2010 compared to 2009.

Other Income (Expense), net

(In Thousands)	Years Ended December 31, 2010	2009	Change $	%
Interest income	$ 166	$ 180	$ (14)	-8%
Interest expense and other, net	(1,199)	(2,037)	838	-41%
Total other income (expense), net	$ (1,033)	$ (1,857)	$ 824	-44%

Interest Income. Interest income decreased due to lower average interest rates received on our cash, cash equivalents and marketable securities balances during 2010 compared to 2009.

Interest Expense and Other, Net. Interest expense and other, net, decreased $0.8 million during 2010 compared to 2009 due to $0.4 million of other income derived in 2010 from contractual arrangements with Arch and a decrease in interest expense of $0.9 million due to the payoff of our debt obligation on the GE Capital Loan. These were offset by an increase of $0.4 million in unrealized foreign exchange losses primarily related to our operations in Hungary.

Provision for Income Taxes. The tax provision for 2010 and 2009 primarily consisted of income taxes attributable to foreign operations and expenses related to uncertain tax positions.

Years Ended December 31, 2009 and 2008

Revenues

(In Thousands)	Years Ended December 31, 2009	2008	Change $	%
Product	$ 18,554	$ 16,860	$ 1,694	10%
Related party collaborative R&D	62,656	30,239	32,417	107%
Collaborative R&D	1,652	3,062	(1,410)	-46%
Government grants	46	317	(271)	-85%
Total revenues	$ 82,908	$ 50,478	$ 32,430	64%

Revenues increased during the year ended December 31, 2009 compared to the year ended December 31, 2008 primarily due to increases in revenues from related party collaborative research and development projects and product sales offset by reductions in revenues from other collaborative research and development projects.

Product revenues increased in 2009 compared to 2008 primarily due to an increase in product sales to a pharmaceutical customer during 2009.

Related party collaborative research and development revenues increased in 2009 compared to 2008 due to the increase in the number of FTEs engaged in our expanded research and development collaboration with Shell as well as milestone payments of $4.6 million. The expansion of this collaboration resulted in an increase in the number of contractual FTEs used during the period from an average of 62 in 2008 to an average of 126 in 2009.

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Collaborative research and development revenues decreased in 2009 compared to 2008 primarily due to the reallocation of our research resources after the completion of certain collaborative research and development projects to related party collaborative research and development projects.

Government grant revenues decreased in 2009 compared to 2008 in connection with the closure of our Julich, Germany operations, and the loss of grant revenue from the German government.

Our top five customers accounted for 90% and 79% of our total revenues in 2009 and 2008, respectively. Shell accounted for 76% and 60% of our total revenues in 2009 and 2008, respectively.

Cost of Product Revenues

(In Thousands)	Years Ended December 31, 2009	2008	Change $	%
Cost of revenues:				
Product	$ 16,678	$ 13,188	$ 3,490	26%
Gross profit:				
Product	$ 1,876	$ 3,672	$ (1,796)	-49%
Product gross margin %	10%	22%		

The increase in cost of product revenues in 2009 compared to 2008 was primarily attributable to an increase in product sales. Cost of product revenues as a percentage of product revenues increased from 78% in 2008 to 90% in 2009, primarily due to write downs of $2.0 million of inventory items, as well as a change in sales mix towards lower margin product sales during 2009. Inventory write downs included excess and obsolete inventories and the impact of the rationalization of our product offerings in connection with the closure of our Julich, Germany facility in 2009.

Operating Expenses

(In Thousands)	Years Ended December 31, 2009	2008	Change $	%
Research and development	$ 54,725	$ 45,554	$ 9,171	20%
Selling, general and administrative	29,871	35,709	(5,838)	-16%
Total operating expenses	$ 84,596	$ 81,263	$ 3,333	4%

Research and Development. Research and development expenses increased in 2009 compared to 2008 primarily due to increased royalty fees paid to Maxygen of $4.6 million, most of which was related to Shell s increased equity investment in our company, and the remainder of which reflected the increase in FTEs. In addition, the increase was due to compensation (including stock-based compensation) and benefits of $3.0 million attributable to an increase in employee headcount in our research and development functions, and depreciation and amortization expense of $1.4 million due to expanded facilities and capital equipment. Research and development expenses included stock-based compensation expense of $2.3 million and $1.5 million during 2009 and 2008, respectively.

Selling, General and Administrative. Selling, general and administrative expenses decreased in 2009 compared to 2008 primarily due to a $3.6 million write off in 2008 of deferred initial public offering costs. We also reduced our spending on consultants, contractors and outside advisory services by $1.4 million, and travel and recruiting-related expenses decreased by $0.9 million. Selling, general and administrative expenses included stock-based compensation expense of $2.5 million and $2.0 million during 2009 and 2008, respectively.

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Other Income (Expense), net

(In Thousands)	Years Ended December 31, 2009	2008	Change $	%
Interest income	$ 180	$ 1,538	$ (1,358)	-88%
Interest expense and other, net	(2,037)	(2,365)	328	-14%
Total other income (expense), net	$ (1,857)	$ (827)	$ (1,030)	125%

Interest Income. Interest income decreased due to lower average cash, cash equivalents and marketable securities balances on hand and lower average interest rates during 2009 compared to 2008.

Interest Expense and Other, Net. Interest expense and other, net, decreased in 2009 compared to 2008. Interest expense and other, net in 2009 included the increase in the fair value of our redeemable convertible preferred stock warrant liability of $0.7 million, which was offset by a decrease of $0.6 million in foreign exchange losses primarily related to our operations in Singapore and a decrease in interest expense of $0.6 million due to the reduced debt obligation on the General Electric Capital Corporation / Oxford Finance Corporation loan, which we refer to as the GE Capital Loan, due to scheduled principal payments on these obligations.

Provision for Income Taxes. The tax provision for 2009 and 2008 primarily consisted of income taxes attributable to foreign operations.

Restructuring Charges. In 2009, our board of directors approved and committed to plans to reduce our cost structure, which included a relocation of our operations in Germany to facilities in the United States and in Singapore, a rationalization of our product offerings, closure of the facility in Germany and employee terminations in Germany and the United States. We expensed $0.4 million in employee severance and benefits, $0.4 million in lease termination costs and $0.5 million related to inventory write downs, for a total of $1.4 million. The inventory write downs of $0.5 million were included in cost of product revenues and the remaining $0.9 million was included in selling, general and administrative expenses in the consolidated statements of operations. As of December 31, 2009, $1.2 million related to these expenses has been paid or charged off and the remaining $0.2 million is recorded in other accrued liabilities on the consolidated balance sheet. We incurred total costs of approximately $1.4 million, with substantially all of the costs incurred during 2009.

Liquidity and Capital Resources

(In Thousands)	December 31, 2010	2009
Cash and cash equivalents	$ 72,396	$ 31,785
Marketable securities		23,778
Accounts receivable, net	15,333	7,246
Accounts payable, accrued compensation and accrued liabilities	22,945	28,207
Working capital(1)	64,708	16,397

(1) Working capital consists of total current assets less total current liabilities.

(In Thousands)	Years Ended December 31, 2010	2009	2008
Net cash used in operating activities	$ (16,383)	$ (8,786)	$ (36,316)
Net cash provided by (used in) investing activities	(5,166)	(20,958)	7,056
Net cash provided (used in) by financing activities	62,239	39,997	(3,886)
Effect of foreign exchange rates on cash and cash equivalents	(79)	(371)	(26)
Net increase (decrease) in cash and cash equivalents	$ 40,611	$ 9,882	$ (33,172)

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Cash Flows from Operating Activities

We have historically experienced negative cash flow from operations as we continue to invest in our infrastructure, our technology platform, and expand our business. Our cash flows from operations will continue to be affected principally by the extent to which we increase our headcount, primarily in research and development, in order to grow our business. The timing of hiring of skilled research and development personnel in particular affects cash flows as there is a lag between the hiring of research and development personnel and the generation of collaboration or product revenues and cash flows from those personnel. Our primary source of cash flows from operating activities is cash receipts from our customers. Our largest uses of cash from operating activities are for employee related expenditures, rent payments, inventory purchases to support our revenue growth and non-payroll research and development costs, which historically included payments made to Maxygen in connection with our biofuels research and development collaboration with Shell. As a result of our purchase of the Maxygen IP in October 2010, these payments to Maxygen terminated. In light of the growth in market acceptance of our products and services to date, we currently intend to increase our investment in research and development. We do not currently expect to achieve profitability on an annual basis prior to at least 2012.

Our operating activities in 2010 used cash of $16.4 million, primarily due to our net loss of $8.5 million in 2010, and increases in accounts receivable of $8.1 million due to increased product revenues and the timing of payments from Shell and a decrease in deferred revenues of $15.1 million primarily as a result of 2009 billings to Shell recognized to revenue during 2010. We also had net non-cash charges of $19.0 million, comprised primarily of non-cash share-based compensation expense of $8.7 million, $7.2 million in depreciation and amortization of property and equipment and $1.0 million in amortization of intangible assets.

Our operating activities in 2009 used cash of $8.8 million, primarily as a result of our net loss of $20.3 million and increases in accounts receivable of $1.1 million, offset by decreases in deferred revenues of $0.5 million primarily as a result of continuing recognition of up-front exclusivity fees we received from Shell in 2007. We also had net non-cash charges of $12.6 million, comprised primarily of $5.2 million in depreciation and amortization of property and equipment, $4.8 million in stock-based compensation expense, $1.0 million in amortization of intangible assets and $0.6 million related to the increase in the fair value of the redeemable convertible preferred stock warrants during the period.

Our operating activities used cash of $36.3 million in 2008, primarily due to our net loss of $45.1 million, an increase in inventories of $1.4 million, a decrease in a related party payable of $7.4 million, and offset by increases in accounts payable of $4.9 million and accrued liabilities of $5.3 million. These changes resulted primarily from the significant growth in our business, the timing of shipments and payments to vendors, including related parties, and our efforts to manage and monitor the balances of trade receivables. We also had net non-cash charges of $7.8 million, comprised primarily of $3.7 million in depreciation and amortization of property and equipment, $0.9 million in amortization of intangible assets, $3.5 million in stock-based compensation expense, and $0.5 million for amortization of debt discount.

Cash Flows from Investing Activities

In 2010, cash used in investing activities totaled $5.2 million and primarily consisted of a net decrease in marketable securities of $23.2 million and capital expenditures of $7.0 million primarily related to leasehold improvements for lab space expansion and purchase of manufacturing and lab equipment and $20.7 million for the acquisition of the Maxygen IP.

In 2009, our investing activities used cash of $21.0 million, primarily for the net purchases of $9.1 million of marketable securities, and $10.7 million of capital expenditures. These capital expenditures consisted primarily of laboratory equipment purchases and leasehold improvements in our laboratories.

Our investing activities provided cash of $7.1 million in 2008, primarily from the net proceeds from the sale and maturities of marketable securities of $14.3 million, reduced by purchases of property and

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equipment of $8.5 million, and a decrease in restricted cash of $1.3 million. Restricted cash reduced by $0.8 million on payment of purchase consideration to a former shareholder of BioCatalytics and by $0.6 million on expiration of a letter of credit relating to a facility lease.

We expect our capital expenditures to be approximately $9.0 million for 2011. In the future, we will continue to make laboratory equipment purchases to support our increasing research and development efforts and growth strategy.

Cash Flows from Financing Activities

In 2010, our financing activities provided $62.2 million including gross proceeds received related to our IPO of $72.5 million and $1.6 million from exercises of stock options offset by payments in preparation for our IPO of $3.9 million and the payoff of our financing obligations of $8.0 million.

In 2009, our financing activities provided $40.0 million in cash, primarily from the issuance and sale of 3.7 million shares of Series F preferred stock for $46.9 million, partially offset by $6.1 million in principal payments on our financing obligations.

Our financing activities used $3.9 million in cash during 2008, primarily from the $4.3 million in principal payments on our financing obligations, partially offset by $0.4 million in proceeds from the exercise of employee stock options.

Contractual Obligations and Commitments

The following summarizes the future commitments arising from our contractual obligations at December 31, 2010 (in thousands):

	Total	2011	2012	2013	2014 and beyond
Operating leases	$ 4,789	$ 2,249	$ 1,941	$ 599	$
Total	$ 4,789	$ 2,249	$ 1,941	$ 599	$

We have excluded from the above table $1.7 million in contractual obligations related to uncertain tax positions as we cannot make a reasonably reliable estimate of the period of cash settlement. We are currently negotiating a lease amendment for a building which we currently occupy. The lease for this building expired January 2011. See Item 2 Properties for further discussion.

Off-Balance Sheet Arrangements

As of December 31, 2010, we had no off-balance sheet arrangements as defined in Item 303(a)(4) of Regulation S-K as promulgated by the SEC.

Recent Accounting Pronouncements

In October 2009, the FASB issued Accounting Standards Update (ASU) 2009-13, which amends ASC Topic 605, Revenue Recognition, to require companies to allocate revenues in multiple-element arrangements based on an element s estimated selling price if vendor-specific or other third-party evidence of value is not available. ASU 2009-13 is effective beginning January 1, 2011. Earlier application is permitted. The Company does not expect adoption of this standard to have a material impact on its financial position or results of operations.

In April 2010, the Financial Accounting Standards Board issued Accounting Standards Update (ASU) No. 2010-17, Revenue Recognition Milestone Method (ASU 2010-017). ASU 2010-017 provides guidance in applying the milestone method of revenue recognition to research or development arrangements. Under this guidance, management may recognize revenue contingent upon the achievement of a milestone in its entirety, in the period in which the milestone is achieved, only if the milestone meets all the criteria within the guidance to be considered substantive. This ASU is effective on a prospective basis for research and development milestones achieved in fiscal years, beginning on or after June 15, 2010. The Company does not expect adoption of this standard to have a material impact on its financial position or results of operations.

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ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate Sensitivity

We had unrestricted cash and cash equivalents totaling $72.4 million at December 31, 2010. These amounts were invested primarily in money market funds and are held for working capital purposes. We do not enter into investments for trading or speculative purposes. We believe we do not have material exposure to changes in fair value as a result of changes in interest rates. Declines in interest rates, however, will reduce future investment income. If overall interest rates fell by 10% in 2010, our interest income would have declined by approximately $16,000, assuming consistent investment levels.

Foreign Currency Risk

Our operations include manufacturing and sales activities in the United States, Austria, France, Germany, Italy, Japan and India, as well as research activities in countries outside the United States, including Singapore and Hungary. As we expand internationally, our results of operations and cash flows will become increasingly subject to fluctuations due to changes in foreign currency exchange rates. For example, we purchase materials for, and pay employees at, our research facility in Singapore in Singapore dollars. In addition, we purchase products for resale in the United States from foreign companies and have agreed to pay them in currencies other than the U.S. dollar. As a result, our expenses and cash flows are subject to fluctuations due to changes in foreign currency exchange rates. In periods when the U.S. dollar declines in value as compared to the foreign currencies in which we incur expenses, our foreign-currency based expenses increase when translated into U.S. dollars. Although it is possible to do so, we have not hedged our foreign currency since the exposure has not been material to our historical operating results. Although substantially all of our sales are denominated in U.S. dollars, future fluctuations in the value of the U.S. dollar may affect the price competitiveness of our products outside the United States. The effect of a 10% adverse change in exchange rates on foreign denominated receivables as of December 31, 2010 would have been a $0.5 million foreign exchange loss recognized as a component of interest expense and other, net in our consolidated statement of operations. We may consider hedging our foreign currency as we continue to expand internationally.

Equity Price Risk

As described further in Note 4 to the consolidated financial statements, we have an investment in common shares of CO_2 Solution Inc., a company based in Quebec City, Canada, or CO_2 Solution, whose shares are publicly traded in Canada on the TSX Venture Exchange. This investment is exposed to fluctuations in both the market price of CO_2 Solution s common shares and changes in the exchange rates between the U.S. dollar and the Canadian dollar. The effect of a 10% adverse change in the market price of CO_2 Solution s common shares as of December 31, 2010 would have been an unrealized loss of approximately $165,000, recognized as a component of other comprehensive income (loss) in stockholders equity (deficit). The effect of a 10% adverse change in the exchange rates between the U.S. dollar and the Canadian dollar as of December 31, 2010 would have been an unrealized loss of approximately $165,000 recognized as a component of other comprehensive income (loss) in stockholders equity (deficit).

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ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Codexis, Inc.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

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Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders

Codexis, Inc.

We have audited the accompanying consolidated balance sheets of Codexis, Inc. (the Company) as of December 31, 2010 and 2009, and the related consolidated statements of operations, redeemable convertible preferred stock and stockholders equity (deficit), and cash flows for each of the three years in the period ended December 31, 2010. These financial statements are the responsibility of the Company s management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. We were not engaged to perform an audit of the Company s internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, 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. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Codexis, Inc. at December 31, 2010 and 2009, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2010, in conformity with U.S. generally accepted accounting principles.

/s/ Ernst & Young LLP

Palo Alto, California

February 10, 2011.

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Codexis, Inc.

Consolidated Balance Sheets

(In Thousands Except Per Share Amounts)

	December 31, 2010	December 31, 2009
Assets		
Current assets:		
Cash and cash equivalents	$ 72,396	$ 31,785
Marketable securities		23,778
Accounts receivable, net of allowances of $58 and $30 at December 31, 2010 and 2009, respectively	10,620	7,246
Related party accounts receivable	4,713	
Inventories	2,817	2,915
Prepaid expenses and other current assets	1,646	1,658
Total current assets	92,192	67,382
Restricted cash	1,466	731
Property and equipment, net	21,452	21,581
Intangible assets, net	20,158	928
Goodwill	3,241	3,241
Other non-current assets	2,791	5,173
Total assets	$ 141,300	$ 99,036
Liabilities, Redeemable Convertible Preferred Stock and Stockholders Equity (Deficit)		
Current liabilities:		
Accounts payable	$ 9,208	$ 9,999
Accrued compensation	8,107	6,518
Related party payable		1,314
Other accrued liabilities	5,630	10,376
Redeemable convertible preferred stock warrant liability		2,009
Deferred revenues	455	2,240
Related party deferred revenues	4,084	13,161
Financing obligations		5,368
Total current liabilities	27,484	50,985
Deferred revenues, net of current portion	1,671	1,856
Related party deferred revenues, net of current portion	3,403	7,487
Financing obligations, net of current portion		2,574
Other long-term liabilities	1,381	1,307
Commitments and contingencies		
Redeemable convertible preferred stock issuable in series A to F, $0.0001 par value per share; 26,137 and 25,199 shares authorized, and issued and outstanding, respectively, at December 31, 2009; aggregate liquidation value of $206,006 at December 31, 2009; no shares authorized, issued or outstanding at December 31, 2010		179,672
Stockholders equity (deficit):		
Common stock, $0.0001 par value per share; 45,333 and 100,000 shares authorized at December 31, 2009 and 2010, respectively; 2,670 and 34,829 shares issued and outstanding at December 31, 2009 and 2010, respectively;	4	
Additional paid-in capital	275,540	15,015
Accumulated other comprehensive loss	(34)	(252)
Accumulated deficit	(168,149)	(159,608)

Total stockholders equity (deficit)	107,361	(144,845)
Total liabilities, redeemable convertible preferred stock and stockholders equity (deficit)	$ 141,300	$ 99,036

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Codexis, Inc.

Consolidated Statements of Operations

(In Thousands, Except Per Share Amounts)

	Years Ended December 31,		
	2010	2009	2008
Revenues:			
Product	$ 32,835	$ 18,554	$ 16,860
Related party collaborative research and development	66,148	62,656	30,239
Collaborative research and development	4,048	1,652	3,062
Government grants	4,073	46	317
Total revenues	107,104	82,908	50,478
Costs and operating expenses:			
Cost of product revenues	27,982	16,678	13,188
Research and development	52,405	54,725	45,554
Selling, general and administrative	33,841	29,871	35,709
Total costs and operating expenses	114,228	101,274	94,451
Loss from operations	(7,124)	(18,366)	(43,973)
Interest income	166	180	1,538
Interest expense and other, net	(1,199)	(2,037)	(2,365)
Loss before provision for income taxes	(8,157)	(20,223)	(44,800)
Provision for income taxes	384	66	327
Net loss	$ (8,541)	$ (20,289)	$ (45,127)
Net loss per share of common stock, basic and diluted	$ (0.35)	$ (7.74)	$ (18.96)
Weighted average common shares used in computing net loss per share of common stock, basic and diluted	24,594	2,622	2,380

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Codexis, Inc.

Consolidated Statements of Redeemable Convertible Preferred Stock and Stockholders Equity (Deficit)

(In Thousands)

	Redeemable Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders Equity (Deficit)
	Shares	Amount	Shares	Amount				
December 31, 2007	**21,513**	**$ 132,746**	**2,258**	**$**	**$ 6,187**	**$ 537**	**$ (94,192)**	**$ (87,468)**
Exercise of stock options			346		378			378
Vesting of shares exercised early					31			31
Employee stock-based compensation					3,163			3,163
Non-employee stock-based compensation					297			297
Comprehensive loss:								
Net loss							(45,127)	(45,127)
Currency translation adjustments						(278)		(278)
Unrealized loss on marketable securities						(120)		(120)
Total comprehensive loss								(45,525)
December 31, 2008	**21,513**	**132,746**	**2,604**		**10,056**	**139**	**(139,319)**	**(129,124)**
Exercise of stock options			66		117			117
Vesting of shares exercised early					20			20
Employee stock-based compensation					4,671			4,671
Non-employee stock-based compensation					151			151
Issuance of Series F redeemable convertible preferred stock, net of issuance costs of $74	3,686	46,926						
Comprehensive loss:								
Net loss							(20,289)	(20,289)
Currency translation adjustments						(253)		(253)
Unrealized loss on marketable securities						(138)		(138)
Total comprehensive loss								(20,680)
December 31, 2009	**25,199**	**179,672**	**2,670**		**15,015**	**(252)**	**(159,608)**	**(144,845)**
Exercise of common warrants			42					
Exercise of stock options			810		1,711			1,594
Vesting of shares exercised early					13			13
Employee stock-based compensation					8,468			8,468
Non-employee stock-based compensation					269			386
Conversion of preferred stock to common stock at initial public offering	(25,199)	(179,672)	25,307	3	179,669			179,672
Shares issued for initial public offering, net of issuance costs			6,000	1	67,710			67,711
					2,686			2,686

Conversion of preferred stock warrants							
Cash paid in lieu of partial shares				(1)			(1)
Comprehensive loss:							
Net loss						(8,541)	(8,541)
Currency translation adjustments					(37)		(37)
Unrealized gain on marketable securities					255		255
Total comprehensive loss							(8,323)
December 31, 2010	**$**	**34,829**	**$ 4**	**$ 275,540**	**$ (34)**	**$ (168,149)**	**$ 107,361**

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Codexis, Inc.

Consolidated Statements of Cash Flows

(In Thousands)

	Years Ended December 31,		
	2010	2009	2008
Operating activities:			
Net loss	$ (8,541)	$ (20,289)	$ (45,127)
Adjustments to reconcile net loss to net cash used in operating activities:			
Amortization of intangible assets	1,063	957	880
Depreciation and amortization of property and equipment	7,246	5,172	3,683
Revaluation of redeemable convertible preferred stock warrant liability	677	627	(103)
Loss (gain) on disposal of property and equipment	148	(50)	2
Extinguishment of royalty payable	461		
Stock-based compensation	8,737	4,822	3,460
Accretion of asset retirement obligation	146	43	
Amortization of debt discount	26	311	531
Accretion (amortization) of premium/discount on marketable securities	511	594	(676)
Changes in operating assets and liabilities:			
Accounts receivable	(8,087)	(1,054)	226
Inventories	98	58	(1,382)
Prepaid expenses and other current assets	13	11	(460)
Other assets	2,814	(228)	(113)
Accounts payable	(791)	189	4,941
Accrued compensation	1,589	2,434	902
Related party payable	(1,314)	879	(7,353)
Other accrued liabilities	(6,048)	(3,792)	4,433
Deferred revenues	(15,131)	530	(160)
Net cash used in operating activities	(16,383)	(8,786)	(36,316)
Investing activities:			
Decrease (increase) in restricted cash	(735)	193	1,271
Purchase of property and equipment	(6,990)	(10,697)	(8,537)
Purchase of marketable securities	(49,051)	(37,118)	(47,821)
Purchase of Maxygen patent portfolio	(20,705)		
Proceeds from sale of marketable securities	1,605		6,081
Proceeds from maturities of marketable securities	70,695	27,980	56,062
Proceeds from disposal of property and equipment	15		
Purchase of shares of CO2 Solution common shares		(1,316)	
Net cash provided by (used in) investing activities	(5,166)	(20,958)	7,056
Financing activities:			
Principal payments on financing obligations	(8,026)	(6,087)	(4,264)
Payments in preparation for initial public offering	(3,870)	(959)	
Proceeds from issuance of preferred stock, net of issuance costs		46,926	
Proceeds from issuance of common stock on IPO, net of underwriting discounts	72,541		
Proceeds from exercises of stock options	1,594	117	378
Net cash provided by (used in) financing activities	62,239	39,997	(3,886)

Effect of exchange rate changes on cash and cash equivalents	(79)	(371)	(26)
Net increase (decrease) in cash and cash equivalents	40,611	9,882	(33,172)
Cash and cash equivalents at the beginning of the period	31,785	21,903	55,075
Cash and cash equivalents at the end of the period	$ 72,396	$ 31,785	$ 21,903
Supplemental disclosures of cash flow information:			
Cash paid for interest	$ 350	$ 1,066	$ 1,572
Cash paid for income taxes	$ 336	$ 364	$ 80
Supplemental schedule of noncash investing and financing activities:			
Reclassification of preferred stock warrant from liability to additional paid-in capital	$ 2,686	$	$
Conversion of preferred stock to common stock and additional paid-in capital	$ 179,672	$	$

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Codexis, Inc.

Notes to Consolidated Financial Statements

1. Description of Business

Codexis, Inc. (we or Codexis) is a developer of proprietary biocatalysts, which are enzymes or microbes that initiate or accelerate chemical reactions. We are currently selling our biocatalysts to customers in the pharmaceutical industry and are engaged in a multi-year research and development collaboration with Equilon Enterprises LLC dba Shell Oil Products US (Shell) to develop biocatalysts for use in producing advanced biofuels. We are also using our technology platform to pursue biocatalyst-enabled solutions in other bioindustrial markets, including carbon management, water treatment and chemicals. We were incorporated in Delaware in January 2002.

2. Summary of Significant Accounting Policies

Basis of Presentation and Consolidation

The consolidated financial statements have been prepared in conformity with generally accepted accounting principles in the United States and include the accounts of Codexis and our wholly-owned subsidiaries. We have subsidiaries in United States, Germany, Hungary, India, Mauritius, The Netherlands and Singapore. All significant intercompany balances and transactions have been eliminated in consolidation.

Redeemable Convertible Preferred Stock

On April 27, 2010, we completed our initial public offering of common stock (IPO) selling 6,000,000 shares at an offering price of $13.00 per share, resulting in net proceeds of approximately $67.7 million, after deducting underwriting discounts, commissions and other related transaction costs.

Upon the closing of the IPO, our then outstanding shares of redeemable convertible preferred stock were automatically converted into 25,307,446 shares of common stock and the related redeemable convertible preferred stock was reclassified to common stock and additional paid-in capital, our outstanding preferred stock warrants were automatically converted into common warrants to purchase a total of 288,438 shares of common stock and the related redeemable convertible preferred stock warrant liability was reclassified to additional paid-in capital.

The holders of at least a majority of the then-outstanding shares of Series B, D and E redeemable convertible preferred stock, voting or consenting as separate series, could have required us to redeem each of the respective series of redeemable convertible preferred stock on or after December 31, 2013. The holders of Series A, C and F convertible preferred stock did not have redemption rights; however, the securities were classified outside of stockholders (equity) deficit due to their liquidation rights. The holders of our Series A, B, C, D, E and F preferred stock had control over the vote of our stockholders and board of directors through their appointed representatives. As a result, the holders of Series A, B, C, D, E and F preferred stock could have forced a change in control that would have had triggered liquidation. As redemption of the preferred stock through liquidation is outside of our control, all shares of preferred stock at December 31, 2009, have been presented outside of permanent equity on our consolidated balance sheets. Series A, B, C, D, E and F preferred stock are collectively referred to in the consolidated financial statements and notes to the consolidated financial statements as redeemable convertible preferred stock.

Significant Risks and Uncertainties

We have incurred net losses of $45.1 million, $20.3 million, and $8.5 million for the years ended December 31, 2008, 2009 and 2010, respectively. We used $36.3 million, $8.7 million, and $16.4 million of cash in operating activities for the years ended December 31, 2008, 2009 and 2010, respectively. At December 31, 2010, we had an accumulated deficit of $168.1 million and unrestricted cash and cash equivalents of $72.4 million. Our failure to generate sufficient revenues, achieve planned gross margins,

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control operating costs or raise sufficient additional funds may require us to modify, delay or abandon our planned future expansion or expenditures, which could have a material adverse effect on our business, operating results, financial condition and ability to achieve our intended business objectives. We may be required to seek additional funds through collaborations or public or private debt or equity financings, and may also seek to reduce expenses related to our operations. There can be no assurance that any financing will be available or at terms acceptable to us.

Use of Estimates

The preparation of financial statements in conformity with generally accepted accounting principles in the United States requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosures of contingent liabilities at the date of the consolidated financial statements, and the reported amounts of revenues and expenses during the reporting period. Our management regularly assesses these estimates which primarily affect revenue recognition, the valuation of accounts receivable, intangible assets and goodwill arising out of business acquisitions, inventories, accrued liabilities, the fair values of redeemable convertible preferred stock, common stock, redeemable convertible preferred stock warrants and stock options and the valuation allowances associated with deferred tax assets. Actual results could differ from those estimates, and such differences may be material to the consolidated financial statements.

Foreign Currency Translation

The assets and liabilities of foreign subsidiaries, where the local currency is the functional currency, are translated from their respective functional currencies into U.S. dollars at the exchange rates in effect at the balance sheet date, with resulting foreign currency translation adjustments recorded in accumulated other comprehensive income (loss) in the consolidated statements of stockholders equity (deficit). Revenues and expense amounts are translated at average rates during the period. Accumulated other comprehensive income (loss) included a cumulative translation adjustment gains of $405,000 and $127,000 at December 31, 2007 and 2008, respectively, and a loss of $126,000 and $162,000 at December 31, 2009 and 2010, respectively.

Where the U.S. dollar is the functional currency, nonmonetary assets and liabilities originally acquired or assumed in other currencies are recorded in U.S. dollars at the exchange rates in effect at the date they were acquired or assumed. Monetary assets and liabilities denominated in other currencies are translated into U.S. dollars at the exchange rates in effect at the balance sheet date. Revenues and expense amounts are generally translated at the average rates during the period. Translation adjustments are recorded in interest expense and other, net in the accompanying consolidated statements of operations. Gains and losses realized from transactions, including intercompany balances not considered as permanent investments, denominated in currencies other than an entity s functional currency, are included in interest expense and other, net in the accompanying consolidated statements of operations.

Concentrations of Credit Risk

Financial instruments that potentially subject us to significant concentrations of credit risk consist primarily of cash and cash equivalents, marketable securities, accounts receivable and restricted cash. Cash and cash equivalents, marketable securities and restricted cash are invested through banks and other financial institutions in the United States, as well as in other foreign countries. Such deposits may be in excess of insured limits.

Credit risk with respect to accounts receivable exists to the full extent of amounts presented in the consolidated financial statements. We periodically require collateral to support credit sales. We estimate an allowance for doubtful accounts through specific identification of potentially uncollectible accounts receivable based on an analysis of our accounts receivable aging. Uncollectible accounts receivable are

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written off against the allowance for doubtful accounts when all efforts to collect them have been exhausted. Recoveries are recognized when they are received. Actual collection losses may differ from our estimates and could be material to the consolidated financial position, results of operations, and cash flows.

One customer accounted for 10% and 28% of accounts receivable at December 31, 2010 and 2009, respectively. Another customer accounted for 20% and 21% of accounts receivable at December 31, 2010 and 2009, respectively. At December 31, 2009, an additional customer accounted for 26% of accounts receivable. We do not believe the accounts receivable from these customers represent a significant credit risk based on past collection experiences and the general creditworthiness of these customers.

Fair Value of Financial Instruments

The carrying amounts of certain of our financial instruments, including cash and cash equivalents, marketable securities, restricted cash, accounts receivable and accounts payable, approximate fair value due to their short maturities. Based on borrowing rates currently available to us for loans with similar terms, the carrying value of our financing obligations approximated their fair value.

Fair value is considered to be the price at which an asset could be exchanged or a liability transferred (an exit price) in an orderly transaction between knowledgeable, willing parties in the principal or most advantageous market for the asset or liability. Where available, fair value is based on or derived from observable market prices or other observable inputs. Where observable prices or inputs are not available, valuation models are applied. These valuation techniques involve some level of management estimation and judgment, the degree of which is dependent on the price transparency for the instruments or market and the instruments complexity.

Cash, Cash Equivalents and Marketable Securities

We consider all highly liquid investments with maturity dates of three months or less at the date of purchase to be cash equivalents. Cash and cash equivalents consist of cash on deposit with banks and money market fund. The majority of cash and cash equivalents are maintained with major financial institutions in North America. Deposits with these financial institutions may exceed the amount of insurance provided on such deposits. Marketable securities included in current assets are primarily comprised of U.S. Treasury obligations and government-sponsored enterprise securities. Our investment in common shares of CO_2 Solution Inc. (CO_2Solution) is included in other non-current assets.

Our investments in debt and equity securities are classified as available-for-sale and are carried at estimated fair value. Unrealized gains and losses are reported as a component of accumulated other comprehensive income (loss). Amortization of purchase premiums and accretion of purchase discounts, realized gains and losses of debt securities and declines in value deemed to be other than temporary, if any, are included in interest income or interest expense and other, net. The cost of securities sold is based on the specific-identification method. There were no significant realized gains or losses from sales of marketable securities during the years ended December 31, 2010, 2009 and 2008. At December 31, 2010 and 2009, we did not have any other-than-temporary declines in the fair value of our marketable securities.

Accounts Receivable

Accounts receivable represent amounts owed to us under our collaborative research and development agreements, product revenues and government grants. Our allowance for doubtful accounts was $58,000 and $30,000 as of December 31, 2010 and 2009, respectively. Specific accounts written off against the established reserve were $0, $0, and $234,000 during the years ended December 31, 2010, 2009 and 2008, respectively.

Inventories

Inventories consist of biocatalysts, which are enzymes or microbes that facilitate chemical reactions, and pharmaceutical intermediates. Internally produced biocatalysts only qualify as commercial inventory

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after they have achieved specifications that are required for selling the materials. Inventories held at our contract manufacturers are accepted as finished goods after achieving specifications stated in our purchase orders. Inventories are carried at the lower of cost or market. Cost is determined using the first-in first-out method or the specific identification method depending on location. Inventories, based on demand and age, are written down as excess and obsolete materials, if necessary.

Property and Equipment

Property and equipment, including the cost of purchased software, are stated at cost, less accumulated depreciation and amortization. Property and equipment also includes equipment that has been received but not yet placed in service. Depreciation is calculated using the straight-line method over the following estimated ranges of useful lives:

Asset classification	Estimated useful life
Laboratory equipment	5 years
Computer equipment and software	3 to 5 years
Office equipment and furniture	5 years
Leasehold improvements	Lesser of useful life or lease term

Goodwill

Goodwill represents the excess of the purchase price over the fair value of assets acquired and liabilities assumed. Goodwill is presumed to have an indefinite life and is not subject to annual amortization. We review goodwill for impairment at the company level, which is the sole reporting unit, on at least an annual basis and at any interim date whenever events or changes in circumstances indicate that the carrying value may not be recoverable. The annual test for goodwill impairment is a two-step process. The first step is a comparison of the fair value of the reporting unit with its carrying amount, including goodwill. If this step indicates an impairment, then the loss is measured as the excess of recorded goodwill over its implied fair value. Implied fair value is the excess of the fair value of the reporting unit over the fair value of all identified assets and liabilities. No impairment charges were recorded during the years ended December 31, 2010, 2009 and 2008.

Intangible Assets and Impairment of Long-Lived Assets

Intangible assets consist of customer relationships, developed core technology and trade names, arising out of the Maxygen IP purchase in 2010, Jülich Fine Chemicals (JFC) acquisition in 2005 and BioCatalytics acquisition in 2007. Intangible assets are recorded at their fair values at the date of the acquisition and, for those assets having finite useful lives, are amortized using the straight-line method over their estimated useful lives, which range from one to seven years.

We periodically review our intangible and other long-lived assets for possible impairment, whenever events or changes in circumstances indicate that such assets are impaired or the estimated useful lives are no longer appropriate. If indicators of impairment exist and the undiscounted projected cash flows associated with such assets are less than the carrying amounts of the assets, an impairment loss is recorded to write the assets down to their estimated fair values. Fair value is estimated based on discounted future cash flows. No impairment charges were recorded during the years ended December 31, 2010, 2009 and 2008.

Other Non-Current Assets

At December 31, 2009, we deferred costs of $2.8 million related to the IPO of our common stock. These deferred costs were included in other non-current assets. Upon completion of our IPO on April 27, 2010, deferred costs of $4.8 million was reclassified to additional paid-in capital. At December 31, 2010, there were no deferred costs related to the IPO of our common stock.

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Restricted Cash

Restricted cash was invested in money market accounts primarily for purposes of securing a standby letter of credit as collateral for our Redwood City, California facility lease agreement and for the purpose of securing a working capital line of credit. During the year ended December 31, 2010, restricted cash increased by $0.7 million due to a working capital line of credit.

Redeemable Convertible Preferred Stock Warrant Liability

Prior to our IPO, outstanding warrants to purchase shares of our Series D redeemable convertible preferred stock were freestanding warrants that were exercisable into convertible preferred stock that was subject to redemption and were therefore classified as liabilities on the consolidated balance sheet at fair value. The initial liability recorded was adjusted for changes in fair value at each reporting date with an offsetting entry recorded as a component of interest expense and other, net in the accompanying consolidated statements of operations.

Upon closing of our IPO and the conversion of the underlying preferred stock to common stock, all outstanding warrants to purchase shares of preferred stock were automatically converted into warrants to purchase shares of our common stock. The aggregate fair value of these warrants upon the closing of the IPO was $2.7 million which was reclassified from liabilities to additional paid-in capital, a component of stockholders equity (deficit), and we ceased recording any related periodic fair value adjustments. We estimated the fair value of these warrants on an as-if converted basis at the respective balance sheet dates and immediately prior to conversion to common stock warrants, using the Black-Scholes option pricing model, the remaining contractual term of the warrant, risk-free interest rates and expected dividends on and expected volatility of the price of the underlying common stock.

Revenue Recognition

When evaluating multiple element arrangements, we consider whether the components of each arrangement represent separate units of accounting. Revenue arrangements with multiple components are divided into separate units of accounting if certain criteria are met, including whether the delivered component has stand-alone value to the customer, and whether there is objective and reliable evidence of the fair value of the undelivered items. Consideration received is allocated among the separate units of accounting based on their respective fair values. Applicable revenue recognition criteria are then applied to each of the units.

Revenues are recognized when the four basic revenue recognition criteria are met: (1) persuasive evidence of an arrangement exists; (2) products have been delivered, transfer of technology has been completed or services have been rendered; (3) the fee is fixed or determinable; and (4) collectability is reasonably assured.

Our primary sources of revenues consist of collaborative research and development agreements, product revenues and government grants. Collaborative research and development agreements typically provide us with multiple revenue streams, including up-front fees for licensing, exclusivity and technology access, fees for full-time employee equivalent (FTE) services and the potential to earn milestone payments upon achievement of contractual criteria and royalty fees based on future product sales or cost savings by our customers. Our collaborative research and development revenues consist of revenues from related parties and revenues from other collaborative research and development agreements.

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Related party collaborative research and development revenues relate to the arrangements with Shell and consisted of the following (in thousands):

	Years Ended December 31,		
	2010	2009	2008
License, technology access and exclusivity fees	$ 4,084	$ 4,521	$ 3,675
Services	54,664	53,535	26,564
Milestones	7,400	4,600	
Total related party collaborative research and development revenues	$ 66,148	$ 62,656	$ 30,239

Other collaborative research and development revenues consisted of the following (in thousands):

	Years Ended December 31,		
	2010	2009	2008
License, technology access and exclusivity fees	$ 186	$ 186	$ 150
Services	2,695	897	2,002
Milestones	420		
Royalties	747	569	910
Total collaborative research and development revenues	$ 4,048	$ 1,652	$ 3,062

For each source of collaborative research and development revenues, product revenues and grant revenues, we apply the revenue recognition criteria as follows:

Up-front fees received in connection with collaborative research and development agreements, including license fees, technology access fees, and exclusivity fees, are deferred upon receipt, are not considered a separate unit of accounting and are recognized as revenues over the relevant performance periods.

Revenues related to FTE services are recognized as research services are performed over the related performance periods for each contract. We are required to perform research and development activities as specified in each respective agreement. The payments received are not refundable and are based on a contractual reimbursement rate per FTE working on the project. When up-front payments are combined with FTE services in a single unit of accounting, we recognize the up-front payments using the proportionate performance method of revenue recognition based upon the actual amount of research and development labor hours incurred relative to the amount of the total expected labor hours to be incurred by us, up to the amount of cash received. In cases where the planned levels of research services fluctuate substantially over the research term, we are required to make estimates of the total hours required to perform our obligations. Research and development expenses related to FTE services under the collaborative research and development agreements approximate the research funding over the term of the respective agreements.

Revenues related to milestones that are determined to be at risk at the inception of the arrangement and substantive are recognized upon achievement of the milestone event and when collectability is reasonably assured. Fees associated with milestones for which performance was not at risk at the inception of the arrangement or that are determined not to be substantive are accounted for in the same manner as the up-front fees, provided collectability is reasonably assured.

We recognize revenues from royalties based on licensees sales of products using our technologies. Royalties are recognized as earned in accordance with the contract terms when royalties from licensees can be reasonably estimated and collectability is reasonably assured.

Product revenues are recognized once passage of title and risk of loss has occurred and contractually specified acceptance criteria have been met, provided all other revenue recognition criteria have also been met. Product revenues consist of sales of biocatalysts, intermediates, active

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pharmaceutical ingredients and Codex Biocatalyst Panels. Cost of product revenues includes both internal and third-party fixed and variable costs including amortization of purchased technology, materials and supplies, labor, facilities and other overhead costs associated with our product revenues.

We license mutually agreed upon third-party technology for use in our research and development collaboration with Shell. We record the license payments to research and development expense and offset related reimbursements received from Shell. These payments made by Shell to us are direct reimbursements of our costs. We account for these direct reimbursable costs as a net amount, whereby no expense or revenue is recorded for the costs reimbursed by Shell. For any payments not reimbursed by Shell, we will recognize these as expenses in the statement of operations. We elected to present the reimbursement from Shell as a component of our research and development expense since presenting the receipt of payment from Shell as revenues does not reflect the substance of the arrangement.

We receive payments from government entities in the form of government grants. Government grants are agreements that generally provide us with cost reimbursement for certain types of expenditures in return for research and development activities over a contractually defined period. Revenues from government grants are recognized in the period during which the related costs are incurred, provided that the conditions under which the government grants were provided have been met and we have only perfunctory obligations outstanding.

Shipping and handling costs charged to customers are recorded as revenues. Shipping costs are included in our cost of product revenues. Such charges were not significant in any of the periods presented.

Customer Concentration

Customers with revenues of 10% or more of our total revenues consist of the following (substantially all of the revenues presented below represent revenues from collaborative research and development arrangements):

	Percentage of Total Revenues For The Years Ended December 31,		
	2010	**2009**	**2008**
Customers			
Shell	62%	76%	60%
Merck	10%	*	*

* Represents less than 10% of total revenues

Concentrations of Supply Risk

We rely on a limited number of suppliers for our products. We believe that other vendors would be able to provide similar products; however, the qualification of such vendors may require substantial start-up time. In order to mitigate any adverse impacts from a disruption of supply, we attempt to maintain an adequate supply of critical single-sourced materials. For certain materials, our vendors maintain a supply for us. We outsource a portion of the manufacturing of our products to contract manufacturers with facilities in Austria, India and Italy.

Research and Development Expenses

Research and development expenses consist of costs incurred for internal projects as well as partner-funded collaborative research and development activities. These costs include direct and research-related overhead expenses, which include salaries, stock-based compensation and other personnel-related

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expenses, facility costs, supplies, depreciation of facilities and laboratory equipment, as well as research consultants and the cost of funding research at universities and other research institutions, and are expensed as incurred. Costs to acquire technologies that are utilized in research and development that have no alternative future use, are expensed when incurred.

Advertising

Advertising costs are expensed as incurred and included in selling, general and administrative expenses in the consolidated statements of operations. Advertising costs were $55,000, $167,000 and $335,000 for the years ended December 31, 2010, 2009 and 2008, respectively.

Income Taxes

We use the liability method of accounting for income taxes. Deferred tax assets and liabilities are recognized for the estimated future tax consequences attributable to differences between the consolidated financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred tax assets are recognized for deductible temporary differences, along with net operating loss (NOL) carryforwards, if it is more likely than not that the tax benefits will be realized. To the extent a deferred tax asset cannot be recognized under the preceding criteria, a valuation allowance is established. Deferred tax assets and liabilities are measured using enacted tax rates in effect for the year in which those temporary differences are expected to be recovered or settled. We recognize the financial statement effects of an uncertain tax position when it is more likely than not, based on the technical merits, that the position will be sustained upon examination.

Stock-Based Compensation

Effective January 1, 2006, we began recognizing compensation expense related to share-based transactions, including the awarding of employee stock options, based on the estimated fair value of the awards granted. Options granted prior to January 1, 2006 were measured using the minimum value method for the pro forma disclosures that were previously required. We continued to account for non-vested employee share-based awards outstanding at January 1, 2006 using the intrinsic value method. All awards granted, modified or settled after January 1, 2006 have been accounted for based on the fair value of the awards granted. We are using the straight-line method to allocate stock-based compensation expense to the appropriate reporting periods.

We account for stock options issued to non-employees based on their estimated fair value determined using the Black-Scholes option-pricing model. The fair value of the options granted to non-employees is remeasured as they vest, and the resulting change in value, if any, is recognized as an increase or decrease in stock compensation expense during the period the related services are rendered.

Comprehensive Loss

We report our comprehensive loss, and its components, on the consolidated statements of stockholders equity (deficit). Comprehensive loss consists of net loss, unrealized gains (losses) on marketable securities and foreign currency translation adjustments.

Net Loss per Share of Common Stock

Basic net loss per share of common stock is computed by dividing the net loss by the weighted-average number of shares of common stock outstanding during the period, less the weighted-average unvested common stock subject to repurchase. Diluted net loss per share of common stock is computed by giving effect to all potential common shares, consisting of stock options, warrants and redeemable convertible preferred stock, to the extent dilutive. Basic and diluted net loss per share of common stock was the same for each period presented as the inclusion of all potential common shares outstanding was anti-dilutive.

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The following table presents the calculation of basic and diluted net loss per share of common stock (in thousands, except per share amounts):

	Years Ended December 31,		
	2010	2009	2008
Numerator:			
Net loss	$ (8,541)	$ (20,289)	$ (45,127)
Denominator:			
Weighted-average shares of common stock outstanding	24,597	2,633	2,405
Weighted-average shares of common stock subject to repurchase	(3)	(11)	(25)
Weighted-average shares of common stock used in computing net loss per share of common stock, basic and diluted	24,594	2,622	2,380
Net loss per share of common stock, basic and diluted	$ (0.35)	$ (7.74)	$ (18.96)

The following redeemable convertible preferred stock, common stock subject to repurchase, options to purchase common stock, warrants to purchase redeemable convertible preferred stock and warrants to purchase common stock were excluded from the computation of diluted net loss per share of common stock for the periods presented because including them would have had an antidilutive effect (in thousands):

	Years Ended December 31,		
	2010	2009	2008
Redeemable convertible preferred stock		25,240	21,553
Common stock subject to repurchase		5	17
Options to purchase common stock	7,796	7,887	6,448
Warrants to purchase redeemable convertible preferred stock		288	288
Warrants to purchase common stock	266	39	39
Total	8,062	33,459	28,345

Reclassifications

Certain amounts in prior period financial statements including our asset retirement obligation and the composition of our deferred tax assets have been reclassified to conform to the current period presentation.

Recent Accounting Pronouncements

In October 2009, the FASB issued Accounting Standards Update (ASU) 2009-13, which amends ASC Topic 605, *Revenue Recognition*, to require companies to allocate revenues in multiple-element arrangements based on an element s estimated selling price if vendor-specific or other third-party evidence of value is not available. ASU 2009-13 is effective beginning January 1, 2011. Earlier application is permitted. The Company does not expect adoption of this standard to have a material impact on its financial position or results of operations.

In April 2010, the Financial Accounting Standards Board issued Accounting Standards Update (ASU) No. 2010-17, Revenue Recognition Milestone Method (ASU 2010-017). ASU 2010-017 provides guidance in applying the milestone method of revenue recognition to research or development arrangements. Under this guidance, management may recognize revenue contingent upon the achievement of a milestone in its entirety, in the period in which the milestone is achieved, only if the milestone meets all the criteria within the guidance to be considered substantive. This ASU is effective on a prospective basis for research and development milestones achieved in fiscal years, beginning on or after June 15, 2010. The Company does not expect adoption of this standard to have a material impact on its financial position or results of operations.

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3. Collaborative Research and Development Agreements

Shell

In November 2006, we entered into a collaborative research agreement and a license agreement with Shell to develop biocatalysts and associated processes that use such biocatalysts. In November 2007, we entered into a new and expanded five-year collaborative research agreement and a license agreement with Shell. In March 2009, we entered into an amended collaborative research agreement and a license agreement with Shell to further expand the scope of the collaboration and allow for additional purchases of the Company s preferred stock by Shell. Shell has been a shareholder of the Company throughout all periods presented.

November 2006 Research Collaboration with Shell

In connection with the November 2006 research collaboration, Shell paid us a $2.8 million nonrefundable, up-front technology access fee, purchased 503,778 shares of our Series D redeemable convertible preferred stock at $5.96 per share for gross proceeds and an aggregate value of approximately $3.0 million, and agreed to pay us (1) research funding at specified rates per FTE working on the project during the 12-month research term, (2) a $1.0 million milestone payment upon the delivery of a research report six months after the research commenced, and (3) royalties on future product sales, should such products using our technology be developed.

Under this agreement, we had a right of first negotiation to manufacture for Shell any biocatalysts developed under the collaborative research agreement if Shell decided to outsource the manufacture of such biocatalysts. In conjunction with the collaborative research agreement, Shell was issued a warrant to purchase $3.0 million of additional Series D redeemable convertible preferred stock at a price of $10.50 per share. The fair value of the warrant at issuance was determined to be $462,000 and was amortized against revenues over the twelve-month term of the collaborative research agreement. The fair value was measured using the probability-weighted expected return method. Shell exercised this warrant in full in November 2007 in connection with the new and expanded collaborative research and license agreement discussed below (see also Note 10).

In accordance with our revenue recognition policy, the $2.8 million up-front technology access fee, the $4.1 million of research funding fees and the $1.0 million milestone payment were recognized over the 12-month performance period. The $1.0 million milestone payment was concluded to not be at risk and therefore was determined to not be a substantive milestone.

November 2007 Research Collaboration with Shell

In November 2007, we entered into a five-year expanded collaborative research agreement and a license agreement with Shell. In connection with the new and expanded collaborative research agreements, Shell paid us a $20.0 million up-front exclusivity fee, purchased 2,389,618 shares of our Series E redeemable convertible preferred stock at $12.75 per share for gross proceeds of $30.5 million, and agreed to pay us (1) research funding at specified rates per FTE working on the project during the research term, (2) milestone payments upon the achievement of milestones, and (3) royalties on future product sales. The up-front exclusivity fee is refundable under certain conditions, such as a change in control in which we are acquired by a competitor of Shell. Refundability lapses ratably over a five-year period beginning on November 1, 2007, on a straight-line basis. The agreement also specifies certain minimum levels of FTE services that we must allocate to the collaboration efforts that increase over the term of the agreement.

Shell has the right to terminate the collaborative research agreement upon nine months notice. We have not received any notice of termination as of the date of this Annual Report on Form 10-K. The term of the new and expanded agreement extends through November 2012. During the term of the agreement, we are required to act exclusively with Shell as it relates to the rights and research described in the arrangement and may not conduct research or contract to conduct research, for another party in the field of

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use. Under this agreement, we also have a right of first negotiation but not an obligation to manufacture any biocatalysts developed under the collaborative research agreement if Shell decides to out-source the manufacture of such biocatalysts.

In March 2009, we entered into an amended collaborative research agreement and a license agreement with Shell. In connection with the amended collaborative research agreements, Shell purchased 2,352,940 shares of our Series F redeemable convertible preferred stock at $12.75 per share for gross proceeds of $30.0 million and agreed to pay us (1) additional research funding at specified rates per FTE working on the project during the research term and (2) additional milestone payments upon the achievement of milestones. Shell has the right to reduce the number of funded FTEs, subject to certain limitations, with a required advance notice period ranging from 30 to 270 days and a subsequent period ranging from 90 to 360 days during which notices of further FTE reductions cannot be made by Shell. The length of these periods varies dependent on the number of funded FTEs reduced. We have not received any notice of FTE reduction as of the date of this Annual Report on Form 10-K.

In accordance with our revenue recognition policy, the $20.0 million up-front exclusivity fee and the research funding fees to be received for FTE services are recognized in proportion to the actual research efforts incurred relative to the amount of total expected effort to be incurred by us over the five-year research period commencing November 2007. Milestones to be earned under this agreement have been determined to be at risk at the inception of the arrangement and substantive and are expected to be recognized upon achievement of the milestone and when collectability is reasonably assured. We recorded milestone revenues of $7.4 million and $4.6 million during the years ended December 31, 2010 and 2009, respectively. No milestone revenues were recognized through December 31, 2008.

Under the agreements with Shell, we have the right to license technology from third parties that will assist us in meeting objectives under the collaboration. If a third-party technology is identified and mutually agreed upon by both parties, Shell is obligated to reimburse us for the licensing costs of the technology. In 2008, we mutually agreed to license two third-party technologies for which Shell would reimburse us the cost of the technologies. Payments made by us to the third-party providers were recorded as research and development expenses related to our collaborative research agreement with Shell. None of the acquired licenses are expected to be used in products that will be sold within the next year and the phase of the project has not reached technological feasibility. Shell reimbursed us for licensing costs of $1.4 million, $7.5 million, and $6.1 million for the years ended December 31, 2010, 2009 and 2008, respectively. We record these reimbursements against the costs incurred.

Other Collaborations

Merck

In February 2007, we entered into a three year Catalyst License and Supply Agreement with Merck. Pursuant to the terms of the agreement, Merck may obtain enzymes from us and request that we screen the enzymes for activity in the manufacture of compounds of interest to Merck. We have granted Merck a license to use such enzymes. In connection with the agreement, Merck agreed to purchase enzyme supplies and optimization and screening services from us based on firm orders at agreed-upon rates. The minimum volume of purchases Merck was obligated to make was $4.5 million over the term of the agreement. Merck may continue to purchase supplies and services after the minimum purchase commitment period at the agreed-upon rates. Merck was also obligated to pay us additional fees upon achievement of specified milestones. The contractual term was defined as three years with licenses applicable in perpetuity. We recognize revenues from the agreement based on the amounts billed as we deliver enzyme supplies and provide the services, if all other revenue recognition criteria have been met. No amounts were billed for or recognized upon delivery of the license. During the years ended December 31, 2010, 2009 and 2008, we recognized product and collaborative research and development revenues under this agreement of $0.5 million, $1.6 million, and $2.2 million, respectively.

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Manufacturing Collaboration

In October 2005, we entered into a technology transfer and supply agreement, which we refer to as the 2005 Agreement, with Arch Pharmalabs Ltd. (Arch), a company based in India engaged in the manufacturing and sale of active pharmaceutical ingredients, or APIs, and intermediates to pharmaceutical companies worldwide. In exchange for a $500,000 up-front payment, we granted to Arch a non-exclusive, royalty free license, with no right to grant sublicense rights, to certain of our patent rights and technology, to solely manufacture an intermediate called ATS-8 for us and on our behalf.

We also agreed to transfer technology that is necessary or useful for the manufacture of ATS-8. We recognized the fee upon delivery of the technology and the performance of certain other obligations. In exchange for a $1.5 million up-front payment, we agreed to purchase from Arch certain intermediate production quantities. The $1.5 million up-front payment was repayable by us to Arch if the specified purchases of production quantities were not met. Arch also agreed to purchase exclusively from us quantities of certain of our enzymes and an earlier intermediate used in the production of ATS-8, known as ATS-5, sufficient to enable Arch to fulfill our orders for ATS-8. Subsequently, we have transferred our ATS-5 related technology to Arch for the sole purposes of manufacturing ATS-5 for our resale to Pfizer and others and for Arch s use in the manufacture of ATS-8 manufactured for and on our behalf.

In August 2006, we broadened our relationship with Arch by entering into an enzyme and supply agreement, a supply agreement and a master services agreement, which we call the 2006 Agreements. The 2006 Agreements, among other things, provided biocatalytic supply specifications from us to Arch, intermediate supply from Arch to us, and services to be performed by Arch over the four year term of the agreements.

Due to the ongoing negotiations of our agreements with Arch in 2005 and 2006, we viewed the 2006 Agreements to be linked to the 2005 Agreement. We did not purchase the production volumes to earn the $1.5 million up-front payment under the 2005 Agreement so that payment was applied as consideration to the 2006 Agreements.

Under the 2006 Agreements, we agreed to pay Arch up to $1.6 million for certain chemical process and manufacturing method development services as Arch delivers them over the course of the master services agreement. For the years ended December 31, 2010, 2009 and 2008, we paid Arch $350,000, $500,000, and $500,000, respectively, for their services under the 2006 Agreements. As of December 31, 2010, we had no remaining obligation due to Arch under the 2006 Agreements. As of December 31, 2009, we had a remaining obligation of $350,000 due to Arch.

We have recognized expense for these services of $249,000, $445,000, and $375,000 during the years ended December 31, 2010, 2009 and 2008, respectively, based on quarterly FTE activity reports received from Arch.

In August 2008, we further expanded our relationship with Arch by entering into several enzyme and supply agreements, and product territory agreements (2008 Agreements). The 2008 Agreements, among other things, provided biocatalytic supply specifications from us to Arch, intermediate supply from Arch to us, and services to be performed by Arch over the term of the agreements for an expanded product portfolio.

In February 2010, we consolidated certain of the contractual terms in our agreements with Arch by simultaneously terminating all of our existing agreements with Arch, other than the Master Services Agreement with Arch entered into as of August 1, 2006, and entering into new agreements with Arch. The new agreements, among other things, provide for biocatalyst supply from us to Arch and intermediate supply from Arch to us. We sell the biocatalysts to Arch at cost, and Arch manufactures the intermediates on our behalf. Arch sells the intermediates to us at a formula-based or agreed upon price. We then directly market and sell the intermediates to a specified group of customers in the generic pharmaceutical industry.

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Under the new agreements, Arch may also sell intermediates directly to other customers, and a license royalty is owed by Arch to us based on the volume of product they sell to us and their other customers. Royalties earned from Arch during under this arrangement in 2010 were $430,000.

4. Joint Development Agreement with CO_2 Solution

On December 15, 2009, we entered into an exclusive joint development agreement with CO_2 Solution, a company based in Quebec City, Quebec, Canada, whose shares are publicly traded in Canada on TSX Venture Exchange. The joint development agreement expired in January 2011. Under the agreement, we obtained a research license to CO_2 Solution s intellectual property and agreed to conduct research and development activities jointly with CO_2 Solution with the goal of advancing the development of carbon capture technology. We also purchased 10,000,000 common shares (approximately 16.6% of total common shares outstanding) of CO_2 Solution in a private placement subject to a four-month statutory resale restriction. This restriction expired on April 15, 2010. In February of 2010, our Chief Executive Officer was appointed to the board of directors of CO_2 Solution.

In January 2011, we extended our joint development agreement with CO_2 Solution on essentially the same terms as the original agreement. The extended agreement will now expire on the later of June 30, 2012, or six months after the expiry of any third party collaborations.

We concluded that through December 31, 2010, we did not have the ability to exercise significant influence over CO_2 Solution s operating and financial policies. We consider our investment in CO_2 Solution common shares as an investment in a marketable security that is available for sale, and carry it at fair value in other non-current assets, with changes in fair value recognized in accumulated other comprehensive income (loss). We have estimated the fair value of common shares using the fair value as of December 31, 2010, as determined by trading on TSX Venture Exchange. Accordingly, we have classified our investment in CO_2 Solution as a level 1 investment as discussed in Note 6.

At December 31, 2009, the estimated fair value of our investment in CO_2 Solution restricted common stock was $1.2 million and the unrealized loss was $145,000. At December 31, 2010, the estimated fair value of our investment in CO_2 Solution common stock was $1.7 million and the unrealized gain was $334,000. The unrealized gain and loss for the years ended December 31, 2010 and 2009, respectively was recorded in accumulated other comprehensive income (loss), net of related tax expense of $149,000 on the consolidated balance sheets.

5. Balance Sheets and Statements of Operations Details

Cash Equivalents, Marketable Securities and Other Investments

At December 31, 2010, cash equivalents, marketable securities and other investments consisted of the following (in thousands):

	December 31, 2010				
	Cost or Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value	Average Contractual Maturities (in days)
Money market funds	$ 64,956	$	$	$ 64,956	(1)
Common shares of CO_2 Solution	1,316	334		1,650	(1)
Total	$ 66,272	$ 334	$	$ 66,606	

(1) Not applicable. No contractual maturities dates for these investments.

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At December 31, 2009, cash equivalents, marketable securities and other investments consisted of the following (in thousands):

		December 31, 2009			
	Cost or Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value	Average Contractual Maturities (in days)
Money market funds	$ 23,722	$	$	$ 23,722	n/a
U.S. Treasury obligations	1,754	1		1,755	61
Government-sponsored enterprise securities	23,507	20	(2)	23,525	77
Common shares of CO_2 Solution	1,316		(145)	1,171	n/a
Total	$ 50,299	$ 21	$ (147)	$ 50,173	

Inventories

Inventories, net consisted of the following (in thousands):

	December 31,	
	2010	2009
Raw materials	$ 1,963	$ 1,210
Work in process	38	198
Finished goods	816	1,507
Total inventories	$ 2,817	$ 2,915

Property and Equipment, net

Property and equipment consisted of the following (in thousands):

	December 31,	
	2010	2009
Laboratory equipment	$ 29,931	$ 24,381
Leasehold improvements	10,961	9,221
Computer equipment and software	3,050	2,079
Office equipment and furniture	865	732
Construction in progress(1)	838	2,449
	45,645	38,862
Less: accumulated depreciation and amortization	(24,193)	(17,281)
Property and equipment, net	$ 21,452	$ 21,581

(1) Construction in progress also includes equipment received but not yet placed into service pending installation.

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Intangible Assets

Intangible assets consisted of the following (in thousands):

	December 31, 2010			December 31, 2009			
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Weighted-Average Amortization Period (years)
Customer relationships	$ 3,098	$ (2,943)	$ 155	$ 3,098	$ (2,753)	$ 345	5
Developed and core technology	1,534	(1,212)	322	1,534	(968)	566	5
Noncompete agreements	90	(90)		90	(73)	17	4
Intellectual property	20,244	(563)	19,681				6
Total	$ 24,966	$ (4,808)	$ 20,158	$ 4,722	$ (3,794)	$ 928	

The estimated amortization expense through the year ending December 31, 2016 is as follows at December 31, 2009 (in thousands):

Year ending December 31:	Cost of Product Revenues	Research and Development	Selling, General and Administrative	Total
2011	$ 244	$ 3,374	$ 98	$ 3,716
2012	77	3,374	57	$ 3,508
2013		3,374		$ 3,374
2014		3,374		$ 3,374
2015		3,374		$ 3,374
2016		2,812		$ 2,812
	$ 321	$ 19,682	155	$ 20,158

Goodwill

The changes in the carrying value of goodwill are as follows (in thousands):

	Year Ended December 31,	
	2010	2009
Balance at beginning of year	$ 3,241	$ 3,137
Foreign exchange adjustments		104
Balance at end of year	$ 3,241	$ 3,241

Interest Expense and Other, Net

Interest expense and other, net consisted of the following (in thousands):

	Years Ended December 31,

	2010	2009	2008
Interest expense	$ 529	$ 1,413	$ 2,021
Foreign exchange losses (gains)	314	(59)	415
Remeasurement of redeemable convertible preferred stock warrant liabilities	677	627	(103)
Other	(321)	56	32
Interest expense and other, net	$ 1,199	$ 2,037	$ 2,365

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6. Fair Value

Assets and liabilities recorded at fair value in the consolidated financial statements are categorized based upon the level of judgment associated with the inputs used to measure their fair value. Hierarchical levels which are directly related to the amount of subjectivity associated with the inputs to the valuation of these assets or liabilities are as follows:

Level 1 Inputs that are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date.

Level 2 Inputs (other than quoted prices included in Level 1) that are either directly or indirectly observable for the asset or liability through correlation with market data at the measurement date and for the duration of the instrument s anticipated life.

Level 3 Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities and which reflect management s best estimate of what market participants would use in pricing the asset or liability at the measurement date.

The following table presents our financial instruments that were measured at fair value on a recurring basis at December 31, 2010 by level within the fair value hierarchy (in thousands):

	December 31, 2010			
	Level 1	Level 2	Level 3	Total
Financial Assets				
Money market funds	$ 64,956	$	$	$ 64,956
Common shares of CO_2 Solution	1,650			1,650
Total	$ 66,606	$	$	$ 66,606
Financial Liability				
Redeemable convertible preferred stock warrant liability	$	$	$	$

The following table presents our financial instruments that were measured at fair value on a recurring basis at December 31, 2009 by level within the fair value hierarchy (in thousands):

	December 31, 2009			
	Level 1	Level 2	Level 3	Total
Financial Assets				
Money market funds	$ 23,722	$	$	$ 23,722
U.S. Treasury obligations		1,755		1,755
Government-sponsored enterprise securities		23,525		23,525
Common shares of CO_2 Solution			1,171	1,171
Total	$ 23,722	$ 25,280	$ 1,171	$ 50,173
Financial Liability				
Redeemable convertible preferred stock warrant liability	$	$	$ 2,009	$ 2,009

The valuation of the common shares of CO_2 Solution and the redeemable convertible preferred stock warrant liability are discussed in Notes 4 and 10, respectively.

Our investment in 10,000,000 common shares of CO_2 Solution in a private placement was subjected to a four-month statutory resale restriction. At December 31, 2009, we estimated the fair value of restricted common shares using the fair value of unrestricted common shares as determined by trading on TSX Venture Exchange, discounted for lack of marketability of the shares and we estimated the value of the discount for lack of marketability using the Black-Scholes option pricing model. This restriction expired on

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April 15, 2010. Subsequently at December 31, 2010, we have estimated the fair value of common shares using the fair value as determined by trading on TSX Venture Exchange. Accordingly, we have reclassified our investment in CO_2 Solution, with a fair value of $1.8 million at the date of the transfer, from a level 3 to a level 1 investment. The change in the fair value of the common shares of CO_2 Solution is summarized below (in thousands):

	Years Ended December 31,	
	2010	2009
Fair value at beginning of year	$ 1,171	$
Acquisition of shares		1,316
Change in fair value recorded in accumulated other comprehensive income (loss)	479	(145)
Fair value at end of year	$ 1,650	$ 1,171

Our redeemable convertible preferred stock warrant liability was reclassified to additional paid-in capital, a component of shareholders equity subsequent to our IPO in April, 2010. The change in the fair value of the warrant liability is summarized below (in thousands):

	Years Ended December 31,	
	2010	2009
Fair value at beginning of year	$ 2,009	$ 1,382
Change in fair value recorded in interest expense and other, net	677	627
Reclassification of redeemable convertible preferred stock warrant liability to additional paid-in capital	(2,686)	
Fair value at end of year	$	$ 2,009

7. Related Party Transactions with Maxygen

Maxygen founded Codexis in 2002 and remains one of our stockholders. During the years ended December 31, 2010, 2009 and 2008, Maxygen provided to Codexis certain legal and administrative services, with total fees owed to Maxygen of $170,000, $101,000, and $268,000, respectively. At December 31, 2010 and 2009, we owed Maxygen $0 and $34,000, respectively, in connection with such services.

In August 2006, we had entered into an amendment to the license agreement with Maxygen. Under the amendment, we were required to pay Maxygen a fee based on a percentage of all consideration we receive from third parties related to the use of certain intellectual property owned or controlled by Maxygen in the specified field of biofuels.

We expensed all payments owed to Maxygen as they became due as collaborative research and development expenses, which we reported as research and development expenses in our consolidated statements of operations. We were also obligated to reimburse up to 20% of the costs incurred by Maxygen related to the prosecution and maintenance of the patents licensed from Maxygen relating to our core technology. We paid Maxygen a fee based on our collaborative research and development agreement with Shell (see Note 3). We expensed $1.2 million, $5.5 million and $0.9 million during the years ended December 31, 2010, 2009 and 2008, respectively. Amounts payable to Maxygen were none and $1.3 million at December 31, 2010 and 2009, respectively.

In October of 2010, we acquired Maxygen s directed evolution technology patent portfolio for net consideration of $20.2 million including $20.0 million paid to Maxygen, transaction costs of $0.7 million and a royalty payable extinguishment of $0.5 million. We recorded an intangible asset for $20.2 million (see Note5). In conjunction with this transaction, we terminated our existing license agreement with Maxygen including terminating our obligation to pay biofuels royalties to Maxygen.

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8. Financing Obligations

Financing obligations, net of debt discounts and issuance costs, consisted of the following (in thousands):

	December 31, 2009
General Electric Capital Corporation and Oxford Finance Corporation (2007 agreement)	$ 7,789
Oxford Finance Corporation (2005 agreement)	153
Total loans payable	7,942
Less: current portion	(5,368)
Financing obligations, net of current portion	$ 2,574

In September 2007, we had entered into a loan and security agreement with General Electric Capital Corporation and Oxford Finance Corporation (GE Capital Loan) and drew down $15.0 million, net of issuance costs. In connection with the execution of the loan and security agreement, we incurred costs of $269,000 and, in addition, we issued the lenders a warrant to purchase 72,727 shares of Series D redeemable convertible preferred stock with an estimated fair value of $297,000, which was recorded in the consolidated balance sheet as a debt discount that was being amortized to interest expense over the life of the loans (see Note 10). The loan and security agreement provides for six monthly payments of interest only and 36 monthly installments of principal and interest, with an additional 4% payment due upon final maturity of each funding. Interest accrues at 9.4% per annum. The loan was secured by substantially all of our assets except for intellectual property.

At December 31, 2009, we were in compliance with the covenants of the loan and security agreement. During the years ended December 31, 2010, 2009 and 2008, we recorded interest expense of $83,000, $171,000 and $250,000 respectively, for the amortization of the debt discounts and issuance costs, related to these loans. In October 2010, we repaid in full our outstanding GE Capital Loan, related accrued interest and prepayment penalties for $3.7 million. After the repayment, we no longer have any outstanding debt obligations.

9. Commitments and Contingencies

Operating Leases

Our headquarters is located in Redwood City, where we occupy approximately 87,000 square feet of office and laboratory space. We lease our facilities from the same third party landlord. We are in the process of amending the leases for our Redwood City facilities. The lease for one of our buildings in Redwood City expired on February 1, 2011. We continue to occupy this building while the lease amendment is being negotiated. The current leases for our other buildings in Redwood City expire in April 2012, February 2013 and May 2013. Under the current leases for three of our facilities, we have an option to extend the lease for an additional term of five years for each part, provided that we provide notice to the landlord at least nine months prior to the expiration of the initial term of the lease for each part. We also have an option to extend the lease for a fourth building for an additional term of two years.

Rent expense is recognized on a straight-line basis over the term of the lease. In accordance with the terms of the lease agreement, we exercised our right to deliver a letter of credit in lieu of a security deposit. This letter of credit was $562,000 as of December 31, 2010 and 2009 and is recorded as restricted cash on the consolidated balance sheets.

Landlord allowances for leasehold improvements were $0, $162,000 and $436,000 for the years ended December 31, 2010, 2009 and 2008, respectively. We recorded these amounts as lease incentive obligations that are being amortized as a reduction of rent expense on a straight-line basis over the term of the operating lease.

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We also rent facilities in Singapore, and Hungary. Rent expense is being recognized on a straight-line basis over the respective terms of these leases.

As of December 31, 2010 and 2009 we had asset retirement obligations of $881,000 and $445,000, respectively from operating leases, whereby we must restore the facilities that we are renting to their original form. We incurred $146,000 and $43,000 of accretion expense related to our asset retirement obligations in 2010 and 2009, respectively. Additionally, we incurred $290,000 of additional asset retirement obligation during 2010. We are expensing the asset retirement obligation over the terms of the respective leases. We review the estimated obligation each period and we make adjustments if our estimates change.

Future minimum payments under noncancellable operating leases are as follows at December 31, 2010 (in thousands):

	Lease Payments
Years ending December 31,	
2011	$ 2,249
2012	1,941
2013	599
Total	$ 4,789

Litigation

We have been subject to various legal proceedings related to matters that have arisen during the ordinary course of business. Although there can be no assurance as to the ultimate disposition of these matters, we have determined, based upon the information available, that the expected outcome of these matters, individually or in the aggregate, will not have a material adverse effect on our consolidated financial position, results of operations or cash flows.

Indemnifications

We are required to recognize a liability for the fair value of any obligations we assume upon the issuance of a guarantee. We have certain agreements with licensors, licensees and collaborators that contain indemnification provisions. In such provisions, we typically agree to indemnify the licensor, licensee and collaborator against certain types of third party claims. The maximum amount of the indemnifications is not limited. We accrue for known indemnification issues when a loss is probable and can be reasonably estimated. There were no accruals for expenses related to indemnification issues for any periods presented.

Other contingencies

In November 2009, one of our foreign subsidiaries sold intellectual property to us. Under the local laws, the sale of intellectual property to a nonresident legal entity is deemed an export and is not subject to value added tax. However, there is uncertainty regarding whether the items sold represented intellectual property or research and development services, which would subject the sale to value added tax. We believe that the uncertainty results in an exposure to pay value added tax that is more than remote but less than likely to occur and, accordingly, have not recorded an accrual for this exposure. Should the sale be deemed a sale of research and development services, we could be obligated to pay an estimated amount of $0.6 million.

10. Warrants

In connection with debt offerings at various times between the years ended December 31, 2004 and 2007, we issued warrants to purchase a total of 574,152 shares of our Series D redeemable convertible

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preferred stock and warrants to purchase a total of 39,234 shares of our common stock. Upon the completion of our IPO on April 27, 2010, (see Note 12), all redeemable convertible preferred stock warrants were automatically converted to common stock warrants. The warrants are exercisable at any time during their respective terms. During the year ended December 31, 2010, 61,600 warrants were exercised in a net share transaction to acquire 42,217 of our common stock.

At December 31, 2010, the following warrants were issued and outstanding:

	December 31, 2010			
Issue Date	Class of Shares upon Exercise	Shares Subject to warrants	Exercise Price per Share	Expiration
October 25, 2005	Common	6,066	$ 1.05	October 25, 2012
May 25, 2006	Common	184,895	5.96	May 25, 2013
July 17, 2007	Common	2,384	12.45	February 9, 2016
September 28, 2007	Common	72,727	$ 8.25	September 28, 2017

The fair value of the redeemable convertible preferred stock warrants was recorded as liabilities in our consolidated balance sheet at December 31, 2009. We had no liability for redeemable convertible preferred stock warrants at December 31, 2010. The fair value of the redeemable convertible preferred stock warrants was determined, at each of the dates presented in the table below, using the Black-Scholes option pricing model with the following assumptions:

	April 27, 2010	December 31, 2009
Expected term in years (equals the remaining contractual term)	3.1 - 7.4	3.4 - 7.7
Expected volatility	75% - 76%	69% - 77%
Range of risk-free interest rates	1.6% - 3.3%	1.6% - 3.3%
Expected dividend yield	0.0%	0.0%

11. Redeemable Convertible Preferred Stock

The designated, issued and outstanding shares, aggregate liquidation preferences and carrying values of our redeemable convertible preferred stock were as follows at December 31, 2009 (in thousands):

	Number of Shares			
Series	Designated	Issued and Outstanding	Aggregate Liquidation Preference	Carrying Value
Series A	4,000	4,000	$ 30,000	$ 1
Series B	5,401	5,401	25,005	27,779
Series C	1,010	1,010	9,997	9,969
Series D	7,437	6,998	41,708	42,764
Series E	4,289	4,104	52,333	52,233
Series F	4,000	3,686	47,000	46,926
	26,137	25,199	$ 206,043	$ 179,672

We recorded the redeemable convertible preferred stock at fair value on the dates of issuance, net of issuance costs. We had classified the redeemable convertible preferred stock outside of stockholders equity (deficit) because the shares contained redemption features that were not solely within our control. Upon closing of the IPO, our outstanding shares of redeemable convertible preferred stock were automatically converted into 25,307,446 shares of common stock, and the related carrying value of $179.7 million was reclassified to additional paid-in capital. At December 31, 2010, no redeemable convertible preferred shared were authorized, issued or outstanding.

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12. Stockholders Equity (Deficit)

In 2002, we adopted the 2002 Stock Plan (the 2002 Plan), under which our board of directors may issue incentive stock options, non-statutory stock options (options that do not qualify as incentive stock options) and restricted stock to our employees, officers, directors or consultants. In March 2010, our board of directors approved the 2010 Equity Incentive Award Plan (the 2010 Plan), which became effective upon the completion of the IPO. A total of 1,100,000 shares of common stock were initially reserved for future issuance under the 2010 Plan and any shares of common stock reserved for future grant or issuance under our 2002 Plan but which remain unissued were added to the shares reserved under our 2010 Plan. As of December 31, 2010, we had reserved 9,731,117 shares of common stock for issuance under our option plans. We do not expect any further grants under the 2002 Plan.

Options granted under the 2002 Plan and 2010 Plan expire no later than 10 years from the date of grant. For incentive stock options and nonstatutory stock options, the option price shall be at least 100% and 85%, respectively, of the fair value of the common stock on the date of grant, as determined by the board of directors. If, at the time of a grant, the optionee directly or by attribution owns stock possessing more than 10% of the total combined voting power of all of our outstanding capital stock, the exercise price for these options must be at least 110% of the fair value of the underlying common stock. Options typically vest over a four-year period at a rate of no less than 25% per year but may be granted with different vesting terms. We may also from time to time grant stock options outside the Plans. These grants and the options outstanding outside the Plans were insignificant in all periods presented.

During the year ended December 31, 2009, in connection with a termination of an executive officer, we extended the exercise period for his stock option awards to the earlier of (i) three years following the termination date, (ii) the closing of a change of control or (iii) the six-month anniversary of the expiration of the lock-up restriction imposed at the IPO resulting in incremental stock compensation expense of $190,000. This extended exercise period ends May 16, 2011. We also paid this officer cash severance benefits of $160,000.

A summary of stock option activity is as follows:

		Options Outstanding	
	Shares Available for Grant	Number of Options	Weighted Average Exercise Price per Share
December 31, 2008	3,070,613	6,447,742	$ 4.41
Grants	(2,121,405)	2,121,405	8.03
Exercises		(66,076)	1.77
Cancelled	604,665	(616,539)	6.41
December 31, 2009	1,553,873	7,886,532	5.25
Authorized	1,100,000		
Granted	(1,210,698)	1,210,698	10.74
Exercises		(809,700)	1.97
Early exercised options repurchased	418		1.63
Forfeited/Cancelled	491,831	(491,837)	7.93
December 31, 2010	1,935,424	7,795,693	$ 6.27

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The following table summarizes information about stock options outstanding and exercisable at December 31, 2010:

	Options Outstanding			Options Exercisable	
Exercise Prices	Number of Options	Weighted Average Remaining Contractual Term (Years)	Weighted Average Exercise Price per Share	Number of Options	Weighted Average Exercise Price per Share
$0.60 - $1.05	1,510,040	3.07	$ 0.82	1,510,040	$ 0.82
$2.45 - $6.71	1,863,087	5.69	3.67	1,727,766	3.59
$6.86 - $9.09	2,371,322	8.03	7.85	809,889	7.70
$9.45 - $11.87	2,051,244	8.23	10.82	704,351	10.84
	7,795,693	6.57	$ 6.27	4,752,046	$ 4.48

The following table summarizes information about stock options that are vested and are expected to vest as of December 31, 2010:

	Number of Options Outstanding	Weighted Average Exercise Price per Share	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value (In Thousands)
Vested	4,642,674	$ 4.36	5.2	$ 29,146
Expected to vest	3,032,178	9.08	8.6	5,082
Total vested and expected to vest	7,674,852	$ 6.22	6.5	$ 34,228

The weighted-average grant date fair value of options granted during the years ended December 31, 2010, 2009 and 2008 was $10.74, $5.17 and $5.33, respectively.

At December 31, 2010, exercisable options had a weighted average exercise price of $4.48 per share and an intrinsic value of $29.1 million. The aggregate intrinsic value of exercised stock options was $6.6 million, $418,000 and $374,000 during the years ended December 31, 2010, 2009 and 2008, respectively. The intrinsic value of stock options outstanding, exercised, exercisable and expected-to-vest is calculated based on the difference between the exercise price and the fair value of our common stock.

Stock-based compensation costs capitalized during the years ended December 31, 2010, 2009 and 2008 were insignificant. There were no stock-based compensation tax benefits during the years ended December 31, 2010, 2009 or 2008.

At December 31, 2010, there was $13.0 million of unrecognized stock-based compensation cost which is expected to be recognized over an average period of 2.0 years.

Stock-Based Compensation Expense

We estimate the fair value of stock-based awards granted to employees and directors using the Black- Scholes option-pricing model. The Black-Scholes option-pricing model requires the use of highly subjective and complex assumptions to determine the fair value of stock-based awards, including the expected life of the option and expected volatility of the underlying stock over the expected life of the related grants. As a newly traded public entity, sufficient company specific historical volatility data is not available. As a result, we estimate the expected volatility based on the historical volatility of a group of unrelated public companies within our industry. We will continue to consistently apply this process until a sufficient amount of historical information regarding the volatility of our own share price becomes available. In 2010 we reassessed our peer group which had minimal impact on the volatility. Due to our limited history of grant activity, the expected life of options granted to employees is calculated using the

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simplified method permitted by the SEC as the average of the total contractual term of the option and its vesting period. The risk-free rate assumption was based on U.S. Treasury instruments whose terms were consistent with the terms of our stock options. The expected dividend assumption was based on our history and expectation of dividend payouts.

The following assumptions were used to estimate the fair value of our employee option grants:

	Years Ended December 31,		
	2010	2009	2008
Weighted-average expected life (years)	6.5	6.3	6.1
Weighted-average expected volatility	73%	74%	57%
Weighted-average risk free interest rate	2.6%	2.6%	3.2%
Expected dividend yield	0.0%	0.0%	0.0%

During the years ended December 31, 2010, 2009 and 2008, we also granted options to purchase 20,000, 86,666 and 20,000 shares of common stock, respectively, to non-employees. The 20,000 options granted in 2010 were cancelled in 2010 prior to any vesting of the option grant. For options granted to non-employees, the Black-Scholes option-pricing model was applied using the following assumptions during the years ended December 31, 2010, 2009 and 2008:

	Years Ended December 31,		
	2010	2009	2008
Remaining contractual option life (years)	0.3 - 10	6 - 10	7 - 9
Volatility	49% - 87%	73% - 89%	49%
Risk-free interest rate	0.1% - 3.9%	2.3% - 3.9%	1.9% - 2.1%
Expected dividend yield	0.0%	0.0%	0.0%

The following table presents stock-based compensation expense included in the consolidated statements of operations (in thousands):

	Years Ended December 31,		
	2010	2009	2008
Research and development	$ 3,352	$ 2,318	$ 1,541
Sales, general and administrative	5,385	2,505	1,921
	$ 8,737	$ 4,823	$ 3,462

Stock-based compensation expense attributable to cost of goods sold was immaterial.

Shares Reserved

The following table presents common stock reserved for issuance for the following equity instruments (in thousands):

	December 31,	
	2010	2009
Conversion of redeemable convertible preferred stock		25,240
Warrants to purchase common stock	266	39
Warrants to purchase redeemable convertible preferred		289
Stock options:		
Outstanding	7,796	7,887
Reserved for future grants	1,935	1,554

Total common stock reserved for future issuance	9,997	35,009

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13. Income Taxes

Our loss before provision for income taxes was as follows (in thousands):

	Years Ended December 31,		
	2010	2009	2008
United States	$ (7,837)	$ (18,940)	$ (42,144)
Foreign	(320)	(1,283)	(2,656)
Loss before provision for income taxes	$ (8,157)	$ (20,223)	$ (44,800)

The tax provision for the years ended December 31, 2010, 2009 and 2008 consists primarily of taxes attributable to foreign operations. The components of the provision for income taxes are as follows (in thousands):

	Years Ended December 31,		
	2010	2009	2008
Current provision (benefit):			
Federal	$ 289	$ 70	$ 88
State	2	5	6
Foreign	(17)	489	384
Total current provision (benefit)	$ 274	$ 564	$ 478
Deferred provision (benefit):			
Federal	$ (122)	$	$
State	(26)		
Foreign	258	(498)	(151)
Total deferred provision (benefit)	$ 110	$ (498)	$ (151)
Total provision	$ 384	$ 66	$ 327

Reconciliation of the provision for income taxes calculated at the statutory rate to our provision (benefit) for income taxes is as follows (in thousands):

	Years Ended December 31,		
	2010	2009	2008
Tax benefit at federal statutory rate	$ (2,858)	$ (7,078)	$ (15,680)
State taxes	(245)	(526)	(1,724)
Research and development credits	56	(269)	(427)
Foreign operations taxed at different rates	117	1,347	1,144
Stock-based compensation	1,020	823	554
Other nondeductible items	630	835	2,601
Change in valuation allowance	1,664	4,934	13,859
Provision for income taxes	$ 384	$ 66	$ 327

Deferred income taxes reflect the net tax effects of (a) temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes, and (b) operating losses and tax credit carryforwards.

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Significant components of our deferred tax assets and liabilities are as follows (in thousands):

	December 31, 2010	2009
Deferred tax assets:		
Federal, state and foreign net operating loss carryforwards	$ 40,517	$ 36,019
Federal and state credits	2,598	2,715
Deferred contract revenues	3,784	9,015
Stock compensation	4,094	1,636
Accrued compensation	2,402	1,829
Acquired intangible assets	2,448	2,218
Other	1,807	2,858
Total deferred tax assets:	57,650	56,290
Deferred tax liabilities:		
Other	(1)	(3)
Total deferred tax liabilities:	(1)	(3)
Valuation allowance	(57,315)	(55,686)
Net deferred tax assets	$ 334	$ 601

ASC Topic 740 requires that the tax benefit of net operating losses, temporary differences and credit carryforwards be recorded as an asset to the extent that management assesses that realization is more likely than not. Realization of the future tax benefits is dependent on our ability to generate sufficient taxable income within the carryforward period. Because of our history of operating losses, management believes that recognition of the deferred tax assets arising from the above-mentioned future tax benefits is currently not likely to be realized and, accordingly, has provided a valuation allowance. Accordingly, the net deferred tax assets in the United States, Germany and Hungary have been fully reserved by a valuation allowance. The net valuation allowance increased by $1.6 million, $4.9 million and $13.9 million during the years ended December 31, 2010, 2009 and 2008, respectively. At such time as it is determined that it is more likely than not that the deferred tax assets are realizable, the valuation allowance will be reduced.

The following table sets forth our federal, state and foreign NOL carryforwards and federal research and development tax credits as of December 31, 2010 (in thousands):

	December 31, 2010	
	Amount	Expiration Years
Net operating losses, federal	$ 108,337	2022 - 2030
Net operating losses, state	94,017	2015 - 2020
Tax credits, federal	3,242	2022 - 2030
Tax credits, state	3,492	Do not expire
Net operating losses, foreign	$ 6,028	Do not expire

Current federal and California tax laws include substantial restrictions on the utilization of NOLs and tax credit carryforwards in the event of an ownership change of a corporation. Accordingly, our ability to utilize NOLs and tax credit carryforwards may be limited as a result of such ownership changes. Such a limitation could result in the expiration of carryforwards before they are utilized.

We have not recorded deferred income taxes applicable to undistributed earnings of a foreign subsidiary that are indefinitely reinvested in foreign operations. Generally, such earnings become subject to U.S. tax upon the remittance of dividends and under certain other circumstances. It is not practicable to estimate the amount of the deferred tax liability on such undistributed earnings.

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We adopted the provisions of FIN 48 on January 1, 2007. A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows (in thousands):

	December 31,	
	2010	2009
Balance at beginning of year	$ 5,899	$ 5,123
Additions based on tax positions related to current year	593	1,143
Additions for tax provisions of prior years		
Reductions for tax provisions of prior years		(367)
Balance at end of year	$ 6,492	$ 5,899

We recognize interest and penalties in income tax expense. Total interest and penalties recognized in the consolidated statement of operations was $75,000 and $76,000 respectively in 2010 and 2009. Total penalties and interest recognized in the balance sheet was $202,000 and $127,000 respectively in 2010 and 2009. The total unrecognized tax benefits that, if recognized currently, would impact our effective tax rate were $1.7 million and $1.4 million as of December 31, 2010 and 2009, respectively. If the Company is eventually able to recognize all its uncertain positions, $5.8 million of the unrecognized benefit would reduce its effective tax rate. We expect $93,000 of unrecognized tax benefits to be recognized within the next 12 months. We are not subject to examination by U.S. federal or state tax authorities for years prior to 2002 and foreign tax authorities for years prior to 2006.

14. 401(k) Plan

In January 2005, we implemented a 401(k) Plan covering certain employees. Currently, all of our U.S. based employees over the age of 18 are eligible to participate in the 401(k) Plan. Under the 401(k) Plan, eligible employees may elect to reduce their current compensation up to a certain annual limit and contribute these amounts to the 401(k) Plan. We may make matching or other contributions to the 401(k) Plan on behalf of eligible employees. In the years ended December 31, 2010, 2009 and 2008, we did not make any contributions to the 401(k) Plan on behalf of eligible employees.

15. Restructuring Charges

In 2009, the board of directors approved and committed to plans to reduce our cost structure, which included a relocation of our operation in Germany to facilities in the United States and in Singapore, a rationalization of the our product offerings and closure of the facility in Germany, and employee terminations in Germany and the United States.

In 2008, the board of directors approved and committed to plans to reduce our cost structure. The restructuring plan applied to employees and facilities worldwide.

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Changes in restructuring accruals in accrued liabilities in our condensed consolidated balance sheets as of December 31, 2010 were as follows:

	Severance		Facilities, inventory and contract termination costs		Total	
	2009 Plan	2008 Plan	2009 Plan	2008 Plan	2009 Plan	2008 Plan
Restructuring charges	$	$ 315	$	$ 1,217	$	$ 1,532
Cash payments						
Balance at December 31, 2008		315		1,217		1,532
Restructuring charges	401		944	56	1,345	56
Cash payments	(246)	(252)	(944)	(610)	(1,190)	(862)
Non-cash charges				(272)		(272)
Balance at December 31, 2009	155	63		391	155	454
Restructuring						
Cash payments	(155)			(391)	(155)	(391)
Non-cash charges						
Balance at December 31, 2010	$ 0	$ 63	$	$	$ 0	$ 63

16. Segment Reporting

Operating segments are defined as components of an enterprise about which separate financial information is available that is evaluated regularly by the chief operating decision maker, or decision making group, in deciding how to allocate resources and in assessing performance. Our chief operating decision maker is our Chief Executive Officer and our board of directors. The Chief Executive Officer and our board of directors review financial information presented on a consolidated basis, accompanied by information about revenues by geographic region, for purposes of allocating resources and evaluating financial performance. We have one business activity and there are no segment managers who are held accountable for operations, operating results beyond revenue goals or gross margins, or plans for levels or components below the consolidated unit level. Accordingly, we have a single reporting segment.

Operations outside of the United States consist principally of research and development and sales activities. Geographic revenues are identified by the location of the customer and consist of the following (in thousands):

	Years Ended December 31,		
	2010	2009	2008
Revenues			
Americas(1)	$ 72,920	$ 65,713	$ 35,166
Europe	9,867	7,028	8,165
Asia	24,317	10,167	7,147
	$ 107,104	$ 82,908	$ 50,478

(1) Primarily United States

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Geographic presentation of identifiable long-lived assets below shows those assets that can be directly associated with a particular geographic area and consist of the following (in thousands):

	December 31,		
	2010	2009	2008
Long-lived assets			
Americas(1)	$ 37,023	$ 19,439	$ 11,270
Europe	3,980	3,911	2,437
Asia	3,398	4,332	5,146
	$ 44,401	$ 27,682	$ 18,853

(1) Primarily United States

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17. Selected Quarterly Financial Data (Unaudited)

The following table provides the selected quarterly financial data for 2010 and 2009 (in thousands):

Codexis, Inc.

Condensed Consolidated Statements of Operations

(Unaudited)

(In Thousands, Except Share Amounts)

	Quarter Ended							
	December 31, 2010	September 30, 2010	June 30, 2010	March 31, 2010	December 31, 2009	September 30, 2009	June 30, 2009	March 31, 2009
Revenues:								
Product	$ 8,585	$ 9,491	$ 8,484	$ 6,275	$ 5,152	$ 4,636	$ 4,194	$ 4,571
Related party collaborative R&D	19,275	16,178	14,653	16,042	18,693	15,000	14,544	14,419
Collaborative R&D	1,471	1,065	851	661	358	426	462	407
Government grants	480	379	492	2,722	35			11
Total revenues	29,811	27,113	24,480	25,700	24,238	20,062	19,200	19,408
Costs and operating expenses:								
Cost of product revenues	8,126	8,563	6,075	5,218	4,792	4,618	3,412	3,856
Research and development	13,349	13,070	13,004	12,982	15,240	12,239	12,113	15,134
Selling, general and administrative	8,649	7,940	8,652	8,600	8,932	8,698	6,178	6,063
Total costs and operating expenses	30,124	29,573	27,731	26,800	28,964	25,555	21,703	25,053
Loss before provision (benefit) for income taxes	(434)	(2,434)	(3,859)	(1,430)	(5,194)	(6,172)	(2,817)	(6,041)
Net loss	$ (494)	$ (2,732)	$ (3,946)	$ (1,369)	$ (5,181)	$ (6,156)	$ (2,858)	$ (6,095)
Net loss per share of common stock, basic and diluted	$ (0.01)	$ (0.08)	$ (0.15)	$ (0.50)	$ (1.95)	$ (2.35)	$ (1.09)	$ (2.35)
Weighted average common shares used in computing net loss per share of common stock, basic and diluted	34,452	34,200	26,557	2,714	2,653	2,615	2,613	2,594

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURES

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, including our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2010. The term disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means

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controls and other procedures of a company that are designed to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable, and not absolute, assurance of achieving the desired objectives. In reaching a reasonable level of assurance, management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of December 31, 2010 at the reasonable assurance level.

Exemption from Management s Report on Internal Control Over Financial Reporting for the Fiscal Year Ended December 31, 2010

This annual report does not include a report of management s assessment regarding internal control over financial reporting or an attestation report of the Company s registered public accounting firm due to a transition period established by rules of the SEC for newly public companies.

Changes in Internal Control Over Financial Reporting

There was no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the quarterly period ended December 31, 2010 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

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PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this item concerning our directors, executive officers, compliance with Section 16 of the Exchange Act, our code of ethics and Nominating and Governance Committee and Audit Committee is incorporated by reference from the information set forth in the sections under the headings Election of Directors, Executive Officers, Section 16(a) Beneficial Ownership Reporting Compliance and Corporate Governance Matters in our Definitive Proxy Statement to be filed with the Securities and Exchange Commission in connection with the Annual Meeting of Stockholders to be held in 2011 (the 2011 Proxy Statement).

ITEM 11. EXECUTIVE COMPENSATION

The information required by this item concerning executive compensation is incorporated by reference from the information in the 2011 Proxy Statement under the headings Executive Compensation, Corporate Governance Matters and Executive Compensation Compensation Committee Report.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this item concerning securities authorized for issuance under equity compensation plans and security ownership of certain beneficial owners and management is incorporated by reference from the information in the 2011 Proxy Statement under the headings Executive Compensation Equity Compensation Plan Information and Security Ownership of Certain Beneficial Owners and Management.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS,

AND DIRECTOR INDEPENDENCE

The information required by this item concerning transactions with related persons and director independence is incorporated by reference from the information in the 2011 Proxy Statement under the headings Certain Relationships and Related Transactions and Corporate Governance Matters.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this item is incorporated by reference from the information in the 2011 Proxy Statement under the heading Ratification of Independent Registered Public Accounting Firm Principal Accounting Fees and Services.

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PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

1. Financial Statements: See Index to Consolidated Financial Statements in Part II, Item 8 of this Annual Report on Form 10-K

2. Exhibits: The exhibits listed in the accompanying index to exhibits are filed or incorporated by reference as part of this Annual Report on Form 10-K.

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SIGNATURES

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

CODEXIS, INC.

Date: February 10, 2011

By: /s/ Alan Shaw
Alan Shaw

President and Chief Executive Officer

POWER OF ATTORNEY

Each person whose individual signature appears below hereby authorizes and appoints Alan Shaw and Robert J. Lawson, and each of them, with full power of substitution and resubstitution and full power to act without the other, as his or her true and lawful attorney-in-fact and agent to act in his or her name, place and stead and to execute in the name and on behalf of each person, individually and in each capacity stated below, and to file any and all amendments to this annual report on Form 10-K and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing, ratifying and confirming all that said attorneys-in-fact and agents or any of them or their or his substitute or substitutes may lawfully do or cause to be done by virtue thereof.

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

SIGNATURE	TITLE	DATE
/s/ Alan Shaw Alan Shaw	President, Chief Executive Officer, Director (Principal Executive Officer)	Date: February 10, 2011
/s/ Robert J. Lawson Robert J. Lawson	Senior Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)	Date: February 10, 2011
/s/ Thomas R. Baruch Thomas Baruch	Chairman of the Board of Directors	Date: February 10, 2011
/s/ Alexander A. Karsner Alexander A. Karsner	Director	Date: February 10, 2011
/s/ Bernard J. Kelly Bernard J. Kelly	Director	Date: February 10, 2011
/s/ Bruce Pasternack Bruce Pasternack	Director	Date: February 10, 2011

/s/ Chris Streng	Director	Date: February 10, 2011
Chris Streng		
/s/ Dennis P. Wolf	Director	Date: February 10, 2011
Dennis P. Wolf		

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EXHIBIT INDEX

Exhibit No.	Description
3.1	Amended and Restated Certificate of Incorporation of Codexis, Inc. filed with the Secretary of the State of the State of Delaware on April 27, 2010 and effective as of April 27, 2010 (incorporated by reference to Exhibit 3.1 to the Company s Quarterly Report on Form 10-Q for the quarter ended March 31, 2010, filed on May 28, 2010).
3.2	Amended and Restated Bylaws of Codexis, Inc. effective as of April 27, 2010 (incorporated by reference to Exhibit 3.2 to the Company s Quarterly Report on Form 10-Q for the quarter ended March 31, 2010, filed on May 28, 2010).
4.1*	Form of the Registrant s Common Stock Certificate.
4.2*	Fourth Amended and Restated Investor Rights Agreement dated November 13, 2007.
4.4*	Warrant to purchase shares of Common Stock issued to Oxford Finance Corporation dated October 25, 2005.
4.5*	Form of Warrant to purchase shares of Series D preferred stock issued in connection with the Bridge Loan Agreement dated as of May 25, 2006.
4.6*	Form of Warrant to purchase shares of Series D preferred stock issued in connection with the Loan and Security Agreement dated as of September 28, 2007.
4.7*	Warrant to purchase shares of Common Stock issued to Alexandria Equities, LLC.
4.8*	Registration Rights Agreement among the Company, Jülich Fine Chemicals GmbH and the other parties named therein, dated February 11, 2005.
4.9*	Fifth Amended and Restated Voting Agreement dated March 4, 2009.
4.10*	Amendment to Fifth Amended and Restated Voting Agreement dated February 25, 2010.
10.1A *	Loan and Security Agreement by and among the Company, General Electric Capital Corporation and Oxford Finance Corporation dated as of September 28, 2007.
10.1B *	First Amendment to Loan and Security Agreement by and among the Company, General Electric Capital Corporation and Oxford Finance Corporation dated as of November 9, 2007.
10.2A *	Amended and Restated Collaborative Research Agreement by and between the Company and Equilon Enterprises LLC dba Shell Oil Products US effective as of November 1, 2006.
10.2B *	Amendment to the Amended and Restated Collaborative Research Agreement by and between the Company and Equilon Enterprises LLC dba Shell Oil Products US effective as of March 4, 2009.
10.2C *	Amendment No. 2 to the Amended and Restated Collaborative Research Agreement, by and between the Company and Equilon Enterprises LLC dba Shell Oil Products US effective as of February 23, 2010.
10.3A *	Amended and Restated License Agreement by and between the Company and Equilon Enterprises LLC dba Shell Oil Products US effective as of November 1, 2006.
10.3B*	Amendment to the Amended and Restated License Agreement by and between the Company and Equilon Enterprises LLC dba Shell Oil Products US effective as of March 4, 2009.
10.4 *	Collaborative Research and License Agreement by and among the Company, Iogen Energy Corporation and Equilon Enterprises LLC dba Shell Oil Products US effective as of July 10, 2009.

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Exhibit No.	Description
10.5 *	License Agreement by and among the Company, Dyadic International (USA), Inc. and Dyadic International, Inc. effective as of November 14, 2008.
10.6A *	Product Supply Agreement by and between Codexis Laboratories India Private Limited and Arch Pharmalabs Limited, effective as of February 16, 2010.
10.6B *	Enzyme and Product Supply Agreement by and between the Company and Arch Pharmalabs Limited, effective as of February 16, 2010.
10.6C *	Memorandum of Understanding for Transfer Pricing and Royalty Calculation by and between the Company and Arch Pharmalabs Limited, effective as of February 16, 2010.
10.6D *	Memorandum of Understanding for Transfer Pricing by and between Codexis Laboratories India Private Limited and Arch Pharmalabs Limited, effective as of February 16, 2010.
10.7A*	Lease Agreement by and between the Company and Metropolitan Life Insurance Company dated as of February 1, 2004.
10.7B*	Amendment to Lease Agreement by and between the Company and Metropolitan Life Insurance Company dated as of June 1, 2004.
10.7C*	Amendment to Lease Agreement by and between the Company and Metropolitan Life Insurance Company dated as of March 9, 2007.
10.7D*	Amendment to Lease Agreement by and between the Company and Metropolitan Life Insurance Company dated as of March 31, 2008.
10.7E	Fourth Amendment to Lease Agreement by and between the Company and Metropolitan Life Insurance Company dated as of September 17, 2010 (incorporated by reference to Exhibit 10.1 to the Company s Quarterly Report on Form 10-Q for the quarter ended September 30, 2010, filed on November 4, 2010).
10.8*	Master Security Agreement by and between the Company and Oxford Finance Corporation effective as of October 25, 2005.
10.9+*	Codexis, Inc. 2002 Stock Plan, as amended, and Form of Stock Option Agreement.
10.10+*	Codexis, Inc. 2010 Equity Incentive Award Plan and Form of Stock Option Agreement.
10.11+*	Offer Letter Agreement by and between the Company and Alan Shaw dated as of July 29, 2003.
10.12A+*	Separation Agreement by and between the Company and Robert S. Breuil dated as of June 30, 2009.
10.12B+*	Amendment to Separation Agreement by and between the Company and Robert S. Breuil effective as of September 25, 2009.
10.13+*	Offer Letter Agreement by and between the Company and Douglas T. Sheehy dated as of February 26, 2007.
10.14+*	Offer Letter Agreement by and between Company and David L. Anton dated as of February 15, 2008.
10.15+*	Employment Contract by and between the Company and Peter Seufer-Wasserthal dated as of March 6, 2006.
10.16+*	Consulting Agreement by and between the Company and Alexander A. Karsner dated as of December 14, 2009.

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Exhibit No.	Description
10.17*	Form of Indemnification Agreement between the Company and each of its directors, as currently in effect.
10.18*	Form of Indemnification Agreement between the Company and each of its directors, officers and certain employees.
10.19+*	Offer Letter Agreement by and between the Company and Robert J. Lawson dated as of October 16, 2009.
10.22+*	Form of Change of Control Severance Agreement between the Company and certain of its officers.
10.23 *	Letters of Offer and Acceptance, dated as of September 28, 2009, by and between Codexis Laboratories Singapore Pte Ltd and the Economic Development Board of Singapore regarding the grant for the development of the Codexis Gene Shuffling Centre of Excellence.
10.24+*	Offer Letter Agreement by and between the Company and Joseph J. Sarret, M.D. dated as of January 24, 2007.
10.25	Asset Purchase Agreement, dated October 28, 2010, by and among the Company, Codexis Mayflower Holdings, LLC and Maxygen, Inc. (incorporated by reference to Exhibit 2.1 to the Company s Current Report on Form 8-K, filed on October 28, 2010).
21.1	List of Subsidiaries.
23.1	Consent of independent registered public accounting firm
24.1	Power of Attorney (see signature page to the this Annual Report on Form 10-K).
31.1	Certification of Principal Executive Officer Required Under Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended.
31.2	Certification of Principal Financial Officer Required Under Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended.
32.1	Certification of Principal Executive Officer and Principal Financial Officer Required Under Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, and 18 U.S.C. §1350.

+ Indicates a management contract or compensatory plan or arrangement.
Certain portions have been omitted pursuant to a confidential treatment request. Omitted information has been filed separately with the Securities and Exchange Commission.

* Filed as exhibits to the registrant s Registration Statement on Form S-1 (File No. 333-164044), effective April 21, 2010, and incorporated herein by reference.