CODEXIS INC
Form S-1/A
August 04, 2008
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As filed with the Securities and Exchange Commission on August 4, 2008

Registration No. 333-150224

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

AMENDMENT NO. 1

TO

FORM S-1

REGISTRATION STATEMENT

UNDER

THE SECURITIES ACT OF 1933

CODEXIS, INC.

(Exact name of Registrant as specified in its charter)

Delaware	**8731**	**71-0872999**
(State or other jurisdiction of incorporation or organization)	*(Primary Standard Industrial Classification Code Number)*	*(I.R.S. Employer Identification Number)*

200 Penobscot Drive, Redwood City, CA 94063

(650) 421-8100

(Address, including zip code, and telephone number, including area code, of Registrant s principal executive offices)

Alan Shaw, Ph.D.

President and Chief Executive Officer

Codexis, Inc.

200 Penobscot Drive, Redwood City, CA 94063

(650) 421-8100

(Name, address, including zip code, and telephone number, including area code, of agent for service)

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Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this Registration Statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. ¨

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ¨

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ¨

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ¨

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.

Large accelerated filer ¨ Accelerated filer ¨

Non-accelerated filer (Do not check if a smaller reporting company) x Smaller reporting company ¨

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Proposed Maximum Aggregate Offering Price(1)	Amount of Registration Fee
Common Stock, $0.0001 par value	$100,000,000	$3,930(2)

(1) Estimated solely for the purpose of computing the amount of the registration fee pursuant to Rule 457(o) under the Securities Act of 1933.
(2) Previously paid.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

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The information contained in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and we are not soliciting offers to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED AUGUST 4, 2008

Shares

Codexis, Inc.

Common Stock

Prior to this offering, there has been no public market for our common stock. We anticipate that the initial public offering price will be between $ and $ per share. We have applied to list our common stock on The Nasdaq Global Market under the symbol CDXS.

We are selling shares of our common stock.

The underwriters have an option to purchase a maximum of additional shares from us to cover over-allotments of shares.

Investing in our common stock involves risks. See Risk Factors beginning on page 9.

	Price to Public	Underwriting Discounts and Commissions	Proceeds to Codexis
Per Share	$	$	$
Total	$	$	$

Delivery of the shares of common stock will be made on or about , 2008.

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

Credit Suisse **Goldman, Sachs & Co.**

Piper Jaffray

RBC Capital Markets

Thomas Weisel Partners LLC

The date of this prospectus is , 2008.

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You should rely only on the information contained in this prospectus. We have not authorized anyone to provide you with information different from that contained in this prospectus. We are offering to sell, and seeking offers to buy, shares of common stock only in jurisdictions where offers and sales are permitted. The information contained in this prospectus is accurate only as of the date on the front cover of this prospectus, or such other dates as are stated in this prospectus, regardless of the time of delivery of this prospectus or of any sale of our common stock.

Dealer Prospectus Delivery Obligation

Until , 2008 (25 days after commencement of this offering), all dealers that buy, sell, or trade shares of our common stock, whether or not participating in this offering, may be required to deliver a prospectus. This delivery requirement is in addition to the obligation of dealers to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

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PROSPECTUS SUMMARY

This summary highlights information contained elsewhere in this prospectus and does not contain all of the information you should consider in making your investment decision. You should read this summary together with the more detailed information, including our financial statements and the related notes, elsewhere in this prospectus. You should carefully consider, among other things, the matters discussed in Risk Factors, before making an investment decision. Unless otherwise indicated herein, Codexis, Inc., Codexis, the Company, we, us and our refer to C Inc. and its subsidiaries.

Our Company

We are a leading developer of proprietary biocatalysts that we believe have the potential to revolutionize chemistry-based manufacturing processes across a variety of industries. Our proprietary biocatalysts include existing biocatalysts that we have optimized and new biocatalysts that we have developed using our technology platform. We have focused our biocatalyst development efforts on large and rapidly growing markets, including pharmaceuticals and biofuels. We have used our technology platform to enable biocatalyst-based commercial scale drug manufacturing processes and delivered biocatalysts and drug products to some of the world s leading pharmaceutical companies. In addition to our commercial success in the pharmaceutical industry, we have a research collaboration with Shell to apply our technology platform to the biofuels market. The commercialization of any products that may be developed through the collaborative research agreement will be at Shell s discretion. We are also pursuing funded collaborations in several other bioindustrial markets, including carbon management, water treatment and chemicals.

Biocatalysts are enzymes or microbes that initiate or accelerate chemical reactions. This process, known as biocatalysis, can enable the production of products used in everyday life. Our proprietary technology platform allows us to rapidly evolve and optimize biocatalysts to perform specific and desired chemical reactions for commercial scale industrial applications. We believe we can use our technology platform to improve industrially relevant characteristics of any biocatalyst, enabling manufacturing processes that are faster, less complex, less capital intensive and lower cost than conventional chemistry-based processes. In addition, we believe that our technology platform can enable the production of products that are currently impossible to produce economically at commercial scale.

Our pharmaceutical customers have included Arch Pharmalabs Limited, Bristol-Myers Squibb Co., Dr. Reddy s Laboratories Ltd., Merck & Co., Inc., Pfizer Inc., Ranbaxy Laboratories Limited, Schering-Plough Corporation and Teva Pharmaceutical Industries Ltd. In 2007, after exceeding targets related to enzyme performance under an initial one-year research agreement, we entered into a new, five-year collaborative research agreement with Equilon Enterprises LLC dba Shell Oil Products US, or Shell, to develop biocatalysts for use in producing biofuels from renewable sources of non-food sustainable plant materials, commonly known as cellulosic biomass. In the year ended December 31, 2007, we generated $25.3 million in revenues from various sources including collaborative research and development funding, product sales and government grants.

The Biocatalysis Opportunity Industry Overview

Many industries, from pharmaceuticals to energy to chemicals, use conventional chemical reactions in manufacturing processes. However, conventional chemistry-based manufacturing often requires highly complex, energy-intensive processes that use extreme environments in terms of temperature and pressure, as well as hazardous reagents to effect chemical reactions. These processes often require equipment that is expensive to build and operate, and frequently generate high volumes of waste, some of which is hazardous to health or the environment, that must be treated, contained and disposed.

Biocatalysts can enable superior alternatives to conventional chemistry in industrial applications. For example, biocatalysts can operate at or near room temperature and pressure and therefore can enable significant cost savings by using less complex manufacturing equipment. Biocatalyst-enabled processes can

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produce the same or higher quality products than conventional chemistry-based manufacturing, while reducing the risks associated with extreme manufacturing environments, without generating nearly the same level of waste.

Despite the potentially significant advantages of biocatalysts, naturally occurring biocatalysts have not achieved their full potential in industrial applications. Naturally occurring biocatalysts often require alteration of their composition in order to perform adequately under industrial manufacturing conditions or at productivity levels that would make their use in commercial scale applications economical. Some companies and researchers have tried to improve the performance of naturally occurring biocatalysts or even produce novel biocatalysts using various other methods and technologies, but to date few have had success. Moreover, for certain industrial applications, there are no known naturally occurring biocatalysts that catalyze the relevant reactions.

Our Approach to Biocatalysis

Our proprietary technology platform has the potential to dramatically transform the commercial and industrial application of biocatalysts. Our platform uses advanced biotechnology methods, bioinformatics and years of accumulated know-how to significantly expedite the process of developing customized enzymes and microbes. In the case of enzymes, we start with a diverse set of genes that encode for variations of an enzyme and recombine, or shuffle, these genes to produce new variants of the enzyme. We then evaluate these new variants to identify enzymes that exhibit improved characteristics under conditions that resemble the desired manufacturing process. ProSAR, our bioinformatics software technology, allows us to identify and quantify the potential value of beneficial mutations and distinguish them from detrimental mutations. The genes that code for improved enzyme variants are put back through this process until a highly efficient enzyme is produced that meets or exceeds targeted performance characteristics. This enzyme can then be incorporated into the actual manufacturing process, where it can reduce or eliminate costly chemical-based steps and the resulting wastes. We have also used our technology platform to improve enzymes in engineered microbes to make fermentation products. We also have a complementary technology for directed evolution of microbes, called Whole Genome Shuffling, that allows us to recombine, or shuffle, the entire genome of two or more cells to produce new variants of the microbe. Our biocatalysts can significantly improve the manufacturing of pharmaceuticals, and we believe that our technology platform may enable us to develop biocatalysts for use in producing advanced biofuels and in providing solutions to other important bioindustrial markets.

Our Target Markets and Solutions

Pharmaceuticals

We initially focused our biocatalyst development efforts on the pharmaceutical industry, before expanding our focus to include biofuels and other bioindustrial opportunities. Over the last several years, pharmaceutical companies that develop branded drugs, which we refer to as innovators, have struggled with declining operating margins resulting in large part from patent expirations for their key products. As a result, innovators are increasingly looking for opportunities to improve their operating margins by reducing their manufacturing costs and outsourcing the manufacturing of active pharmaceutical ingredients, or APIs, and components used in the manufacture of APIs, commonly known as intermediates. The rise in patent expirations has also led to rapid growth of the generics industry. Because generics manufacturers compete primarily on price, these companies are also pursuing opportunities that reduce their manufacturing costs and provide them with access to low cost sources of intermediates and APIs.

Our products and services address the needs of both innovator and generics manufacturers. For example, we have developed four enzymes that enabled significant improvements in the manufacturing process for, and reduced the cost of two key intermediates used in, the production of atorvastatin, which is the API in Lipitor. We supply Pfizer with one of these intermediates, and we supply generic atorvastatin manufacturers with the other intermediate. We are currently developing intermediates or APIs for the generic equivalents of several branded pharmaceutical products including Singulair, Nexium and Crestor. We have also developed tools,

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which we call our Codex Biocatalyst Panels, that allow innovators to screen our biocatalysts across their product pipelines and portfolios to identify desired biocatalytic activity that can then be incorporated into their drug manufacturing processes. In February 2007, Merck became the first customer for this product. Once a useful biocatalyst is identified, either through the use of our Codex Biocatalyst Panels by our customers or our in-house screening services, we can supply that biocatalyst through and to commercial scale, or we can provide further biocatalytic screening and optimization, if needed.

Biofuels

In 2006, we began exploring the application of our technology platform in biofuels. Due to underlying economic, political and environmental concerns surrounding petroleum, the world is seeking renewable alternative fuel solutions. First generation biofuel manufacturers use biocatalysts to produce biofuels such as ethanol and biodiesel at commercial scale. However, these fuels do not provide an optimal solution to the petroleum dependence problem for several reasons. For many of these manufacturers, margins are volatile as costs of key commodity inputs such as corn and natural gas are highly variable, often outpacing changes to ethanol prices. In addition, there are ethical concerns with the diversion of food crops and fertile acreage to fuel production, which has also resulted in higher food and animal feed prices.

We believe that our technology platform may enable the development of biocatalysts that can be used to produce commercially viable non-ethanol biofuel alternatives to petroleum-based fuels from cellulosic biomass. As we work on this long term goal, we also intend to work on the conversion of biomass to sugars, which could also be used for near term opportunities, such as cellulosic ethanol. Shell has the right, but not the obligation, to commercialize any technology that we may develop under the research collaboration. If Shell chooses to commercialize any biofuels products that may be developed through our collaboration, we believe that Shell, which is an affiliate of one of the world s largest distributors of biofuels, has the resources and the infrastructure to commercialize these products on a global scale. We believe that the use of biocatalysts to transform cellulosic biomass into biofuels that have characteristics similar to current petroleum-based gasoline could address the limitations of alcohol-based fuels and could ultimately transform the liquid transportation fuels industry.

Additional Bioindustrial Opportunities

We are pursuing funded collaborations in several other bioindustrial markets, including carbon management, water treatment and chemicals. We believe that our technology platform, together with the knowledge and experience gained from our efforts in the pharmaceutical market and in our biofuels research program, will allow us to capitalize on these opportunities. We will target collaborators that are industry leaders, allowing us to leverage their competitive strengths and resources in pursuit of these opportunities.

Competitive Strengths

Our key competitive strengths are:

Proprietary and Disruptive Technology Platform. Our proprietary platform is potentially disruptive because it addresses the significant limitations of current approaches used to develop biocatalysts and ultimately enables biocatalytic-based processes that have substantial advantages over conventional chemistry. Our technology platform allows us to quickly develop biocatalysts suitable for commercial scale and enables the development of biocatalysts with improved performance characteristics that are rarely present in naturally occurring biocatalysts, and that we believe can enable products currently impossible to produce economically at commercial scale.

Multiple Major Target Markets. We currently use our technology platform to produce biocatalysts that are used at commercial scale in both the generic and innovator pharmaceutical markets. We are working with our collaborator, Shell, to develop biocatalysts for use in producing biofuels from cellulosic biomass sources. We are also pursuing funded collaborations in several other bioindustrial markets, including carbon management, water treatment and chemicals.

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Partnerships with Global Industry Leaders. We believe that our technology platform has been validated through the delivery of drug manufacturing processes or products to numerous leading pharmaceutical companies, including Arch, Merck, Pfizer and Schering-Plough. In biofuels, after an initial one-year research agreement in which we exceeded targets related to enzyme performance, we entered into a new, five-year research collaboration with Shell in 2007.

Capital-Efficient Business Model. 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. If our collaborators choose to utilize our technology to commercialize new products, we believe that this capital-efficient business model will allow us to expand into new markets without having to finance or operate large industrial facilities. During the years ended 2005, 2006 and 2007, we incurred net losses of $11.6 million, $18.7 million and $39.0 million, respectively. We believe that, without our capital-efficient business model, these losses would have been greater.

Diversified and Visible Revenue Base. Our 2007 revenues were derived from the innovator and generic pharmaceuticals and biofuels markets, and consisted primarily of collaborative research and development funding, product sales and government grants. Revenues from our expected sales of generic intermediates and APIs, as well as the revenues that we expect to recognize from our five-year biofuels collaborative research agreement with Shell, should provide a high degree of visibility into our aggregate revenues for the foreseeable future.

Strategy

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

Expand into new bioindustrial markets. We believe that we can deploy our technology platform to transform manufacturing processes throughout various bioindustrial markets. We have a research collaboration with Shell to develop biocatalysts for use in producing commercially viable fuels from cellulosic biomass. We intend to leverage our intellectual property developed under this research collaboration to pursue other funded collaborations in non-fuel bioindustrial markets, including carbon management, water treatment and chemicals.

Continue growing our pharmaceutical business. We plan to launch several new intermediates and APIs for the generic equivalents of branded pharmaceutical products, including Singulair, Nexium and Crestor, beginning in late 2008. We will also continue to aggressively market our Codex Biocatalyst Panels to pharmaceutical companies to demonstrate the capabilities of our technology platform in an effort to integrate our products and services earlier and more deeply into drug development and manufacturing processes.

Enter into additional strategic collaborations. We have grown our business by collaborating with market leaders that have funded the development of and application of our technology platform in the pharmaceutical and biofuels markets. We are pursuing additional collaborations that will allow us to continue to leverage our collaborators competitive strengths and financial resources in our target markets.

Continue enhancing our technology platform. We intend to continue to advance our technology platform by expanding our capabilities in microbe development and by increasing the quality of our biocatalyst libraries. Improvements in either of these areas can be applied to the development of new products in our current and target markets.

Further develop our supply chain. We will continue to evaluate whether to invest in our own manufacturing capabilities or to establish long term supply contracts with additional contract manufacturers. We may also opportunistically seek to secure specialty manufacturing assets and

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expand existing relationships for the supply of our enzymes and key pharmaceutical APIs and intermediates.

Expand our business through acquisition of new technologies, products or businesses. We will continue to evaluate opportunities to acquire or license new technologies, products or businesses that complement or expand our capabilities. We may pursue licensing and acquisition opportunities in the carbon management, water treatment and chemical markets as we seek to expand into these markets.

Corporate Information

We were incorporated in Delaware in January 2002 as a wholly-owned subsidiary of Maxygen, Inc. In March 2002, we licensed from Maxygen our core enabling technology, which comprises advanced biotechnology methods, bioinformatics and years of accumulated know-how which we use to significantly expedite the process of developing customized enzymes and microbes. In March 2002, we also commenced operations, and in September 2002, we raised our first outside funding from venture capital investors. As of March 31, 2008, Maxygen held approximately 25% of our outstanding common stock, calculated on an as-converted basis. Our principal executive offices are located at 200 Penobscot Drive, Redwood City, CA 94063, and our telephone number is (650) 421-8100. Our website address is www.codexis.com. Information contained on our website is not incorporated by reference into this prospectus, and you should not consider information contained on our website to be part of this prospectus.

Our logo, Codexis, Codex, Codex Biocatalyst Panel, Bringing Life to Chemistry and other trademarks or service marks of Codexis, Inc. appearing in this prospectus are the property of Codexis, Inc. This prospectus contains additional trade names, trademarks and service marks of other companies. We do not intend our use or display of other companies trade names, trademarks or service marks to imply relationships with, or endorsement or sponsorship of us by, these other companies.

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The Offering

Common stock offered to the public	shares (or shares if the underwriters exercise their over-allotment option in full).
Common stock to be outstanding after this offering	shares (or shares if the underwriters exercise their over-allotment option in full).
Proposed Nasdaq Global Market symbol	CDXS
Use of proceeds	We intend to use the net proceeds from this offering for working capital and other general corporate purposes, including the costs associated with being a public company and improving our internal control over financial reporting. We may also use a portion of the net proceeds to acquire other businesses, products or technologies, including those that would enable us to seek new markets for our existing products, develop new products or increase our ability to manufacture and produce our biocatalysts. However, we do not have agreements or commitments for any specific acquisitions at this time. Please see Use of Proceeds.
Risk factors	See Risk Factors elsewhere in this prospectus for a discussion of factors you should carefully consider before deciding to invest in our common stock.

The number of shares of common stock to be outstanding after this offering is based on 35,805,720 shares outstanding as of March 31, 2008 and excludes:

- 9,820,074 shares of common stock issuable upon the exercise of options outstanding as of March 31, 2008 at a weighted average exercise price of $2.49 per share;
- 491,513 shares of common stock issuable upon the exercise of warrants outstanding as of March 31, 2008 at a weighted average exercise price of $3.95 per share; and
- shares of common stock reserved for issuance under our 2008 Incentive Award Plan, which will become effective in connection with the consummation of this offering (plus an additional 1,569,360 shares of common stock reserved for future grant or issuance under our 2002 Stock Plan as of March 31, 2008, which shares will be added to the shares to be reserved under our 2008 Incentive Award Plan upon the effectiveness of the 2008 Incentive Award Plan).

Except as otherwise indicated, all information in this prospectus assumes:

- the conversion of all of our outstanding shares of preferred stock into 32,330,100 shares of common stock in connection with the consummation of this offering and the related conversion of all outstanding preferred stock warrants to common stock warrants;
- no exercise of the underwriters over-allotment option; and

the filing of our amended and restated certificate of incorporation, which will occur in connection with the consummation of this offering.

We refer to our Series A, Series B, Series C, Series D and Series E preferred stock collectively as redeemable convertible preferred stock for financial reporting purposes and in the financial tables included in this prospectus, as more fully explained in Note 2 to our consolidated financial statements. In other parts of this prospectus, we refer to our Series A, Series B, Series C, Series D and Series E preferred stock collectively as preferred stock.

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Summary Consolidated Financial Data

The following table sets forth a summary of our historical consolidated financial data for the periods ended or as of the dates indicated. You should read this table together with our consolidated financial statements and the accompanying notes, Selected Consolidated Financial Data and Management s Discussion and Analysis of Financial Condition and Results of Operations appearing elsewhere in this prospectus. The summary 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.

The following table also sets forth summary unaudited pro forma and pro forma as adjusted consolidated financial data, which gives effect to the transactions described in the footnotes to the table. The unaudited pro forma and pro forma as adjusted consolidated financial data is presented for informational purposes only and does not purport to represent what our consolidated results of operations or financial position actually would have been had the transactions reflected occurred on the dates indicated or to project our financial condition as of any future date or results of operations for any future period.

	Years Ended December 31,			Three Months Ended March 31,	
	2005	2006	2007	2007	2008
				(unaudited)	
	(in thousands, except per share data)				
Consolidated Statements of Operations Data:					
Revenues:					
Product	$ 2,265	$ 2,544	$ 11,418	$ 1,456	$ 3,545
Related party collaborative research and development		863	8,481	1,289	3,881
Collaborative research and development	9,363	8,403	4,733	1,882	865
Government grants	156	317	701	77	83
Total revenues	11,784	12,127	25,333	4,704	8,374
Cost and operating expenses:					
Cost of product revenues	2,233	1,806	8,319	1,351	2,887
Research and development	12,839	17,257	35,644	4,763	9,855
Selling, general and administrative	7,891	11,880	19,713	4,036	8,738
Total cost and operating expenses	22,963	30,943	63,676	10,150	21,480
Loss from operations	(11,179)	(18,816)	(38,343)	(5,446)	(13,106)
Interest income	245	742	1,491	368	761
Interest expense and other	(413)	(724)	(2,533)	32	(1,466)
Loss before provision (benefit) for income taxes	(11,347)	(18,798)	(39,385)	(5,046)	(13,811)
Provision (benefit) for income taxes	243	(127)	(408)	50	98
Net loss	$ (11,590)	$ (18,671)	$ (38,977)	$ (5,096)	$ (13,909)
Net loss per share of common stock, basic and diluted(1)	$ (7.69)	$ (10.99)	$ (15.53)	$ (2.72)	$ (4.10)
Shares used in computing net loss per share of common stock, basic and diluted(1)	1,508	1,699	2,510	1,873	3,395
Pro forma net loss per share of common stock, basic and diluted (unaudited)(1)			$ (1.29)		$ (0.37)
Shares used in computing the pro forma net loss per share of common stock, basic and diluted (unaudited)(1)			29,116		35,725

(1) Please see Note 2 of our consolidated financial statements appearing elsewhere in this prospectus for an explanation of the method used to calculate basic and diluted net loss per share of common stock, the pro forma basic and diluted net loss per share of common stock and the number of shares used in the computation of the per share amounts.

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	March 31, 2008		
	Actual	Pro Forma(1) (unaudited)	Pro Forma As Adjusted(2)(3) (unaudited)
	(in thousands)		
Consolidated Balance Sheet Data:			
Cash, cash equivalents and marketable securities	$ 64,912	$ 64,912	
Working capital	42,404	44,664	
Total assets	95,197	95,197	
Preferred stock warrant liability	2,260		
Current and long-term financing obligations	16,889	16,889	
Redeemable convertible preferred stock	132,746		
Stockholders (deficit) equity	(100,139)	34,867	

(1) The pro forma data gives effect to (i) conversion of all of our outstanding shares of redeemable convertible preferred stock into shares of common stock, and (ii) conversion of all of our warrants for redeemable convertible preferred stock into warrants for common stock and the related reclassification of preferred stock warrant liability to stockholders equity upon the completion of this offering.

(2) The pro forma as adjusted balance sheet data gives effect to the sale of shares of common stock in this offering at the initial public offering price of $ per share, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

(3) Each $1.00 increase or decrease in the assumed initial public offering price of $ per share (the midpoint of the price range set forth on the cover page of this prospectus) would increase or decrease, as applicable, our cash, cash equivalents and marketable securities, working capital, total assets and stockholders deficit by approximately $ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

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RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the following risk factors, as well as the other information in this prospectus, before deciding whether to invest in shares of our common stock. The occurrence of any of the events described below could harm our business, financial condition, results of operations and growth prospects. In such an event, the trading price of our common stock may decline and you may lose all or part of your investment.

Risks Relating to Our Business

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 2002. Our operations to date have been primarily limited to organizing and staffing our company, developing our technology platform and establishing arrangements with customers, contract manufacturers and collaborators. Consequently, 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 prospectus:

- our ability to achieve or maintain profitability;
- our ability to manage our growth;
- our ability to remediate a material weakness and implement effective internal controls;
- actions that could cause us to lose our licenses from Maxygen;
- our ability to maintain rights we have under our agreement with Maxygen;
- our relationships with collaborators;
- our dependence on key customers;
- our dependence on a limited number of contract manufacturers of our biocatalysts and suppliers for our pharmaceutical intermediates;
- our ability to develop and successfully commercialize products for the pharmaceuticals market;

our ability to commercialize our technology in the biofuels and other bioindustrial markets;

our ability to develop or obtain commercial scale expression systems for cellulases;

risks associated with the international aspects of 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 personnel, including management;

our ability to prevent the theft or misappropriation of our biocatalysts, the genes that code for our biocatalysts, know-how or technologies;

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our ability to obtain, protect and enforce our intellectual property rights;

our reliance on third parties to enforce patents for which we hold a license;

potential advantages that our competitors may have in securing funding or developing products; and

potential product liability claims, including claims relating to our use of hazardous materials.

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 $11.6 million, $18.7 million and $39.0 million in 2005, 2006 and 2007, respectively. As of March 31, 2008, we had an accumulated deficit of $108.1 million. We expect to incur losses and negative cash flow from operating activities for the next several years. 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 revenue from these sources for at least the next several years. 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 operating expenses will exceed revenues for the next several years and we do not expect to achieve profitability during that period, 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.

If our existing collaboration agreements expire or are terminated, our revenues could be adversely affected.

Our existing collaboration agreements generally have fixed terms and may be terminated under certain conditions. Accordingly, our ability to derive revenue from collaborations following the expiration or termination of these arrangements is uncertain, and will depend in large part on our ability to either extend existing collaborations or enter into new collaborative arrangements. Our ability to do so will, in turn, be largely dependent on our ability to address the needs of current and potential future collaborators.

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 253 employees as of March 31, 2008. 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, Singapore, Hungary, Germany and India. 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 investment 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. As a result, we may be unable to manage our expenses in the

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future, which may negatively impact our gross margins or operating expenses 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 to remediate an existing material weakness in our internal control, and we may discover additional deficiencies in existing systems and controls that we may not be able to remediate in an efficient or timely manner.

We and our independent registered public accounting firm identified a material weakness in our internal control over financial reporting. If we fail to remediate this material weakness or are unable to 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 consolidated financial statements for 2005, 2006 and 2007, we and our independent registered public accounting firm identified a material weakness in our internal control over financial reporting. The material weakness we identified comprises (i) our lack of policies and procedures, with the associated internal controls, to appropriately address complex, non-routine transactions and (ii) the lack of a sufficient number of qualified personnel to timely account for such transactions in accordance with U.S. generally accepted accounting principles. The evidence of this material weakness included: improper revenue recognition for certain complex revenue arrangements; incorrect application of accounting standards for, and untimely communication of information relating to, certain stock option grants; the failure to identify pre-existing accounting issues and control deficiencies at two acquired companies and the incorrect assessment of fair value of certain acquired tangible assets; the improper recording of cumulative foreign currency translation adjustments, resulting in part from our selection of the incorrect functional currency for a foreign subsidiary; and the lack of effective inventory management processes, primarily relating to the segregation of research and development materials from commercial inventories. The material weakness resulted in the recording of numerous audit adjustments, and significantly delayed our financial statement close process, for the three-year period ended December 31, 2007 and the three-month period ended March 31, 2008.

We have not yet been able to remediate this material weakness. However, we plan to take significant steps intended to address the underlying causes of the material weakness in the immediate future, primarily through the hiring of additional accounting and finance personnel with technical accounting and financial reporting experience, and the development and implementation of formal policies, improved processes and documented procedures. We do not know the specific timeframe needed to remediate all of the control deficiencies underlying this material weakness. In addition, we expect to incur significant incremental costs associated with this remediation, primarily due to the hiring of additional finance and accounting personnel, the retention of third-party experts and contractors, and the procurement, implementation and validation of robust accounting and financial reporting systems. If we fail to enhance our internal controls to meet the demands that will be placed upon us as a public company, including the requirements of the Sarbanes-Oxley Act of 2002, we may be unable to accurately report our financial results, or report them within the timeframes required by law or exchange regulations. We cannot assure you that we will be able to remediate this material weakness in a timely manner, if at all, or that in the future additional 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, and the emerging need for complex inter-subsidiary transactions. If our efforts to remediate the weakness identified are not successful or if other deficiencies occur, 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 Exchange Act, 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 effects on our business, reputation, results of operations, financial condition or liquidity.

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If we lose our licenses from Maxygen, we may be unable to continue our business.

We have licensed our core enabling intellectual property rights and technology from Maxygen, Inc., or Maxygen, under our March 2002 license agreement with Maxygen, which was subsequently amended in September 2002, October 2002, and August 2006. We rely heavily on this technology, which comprises advanced biotechnology methods, bioinformatics and years of accumulated know-how, to develop the optimized biocatalysts that are central to our business. Under the terms of the license agreement, we are obligated, among other things, to pay Maxygen a significant percentage of certain types of consideration we receive in connection with our biofuels research collaboration with Shell. During 2006 and 2007, as a result of consideration received in connection with this collaboration, we were obligated to pay Maxygen $0.6 million and $7.8 million, respectively. Maxygen has the right to terminate our rights under the agreement with respect to fuels, but not with respect to chemicals or pharmaceuticals, if we breach our royalty obligations to Maxygen and do not cure such breach within 60 days after we receive notice. Maxygen also has the right to terminate our license if we breach any third party agreements under which Maxygen sublicensed rights under the agreement, and fail to cure such breach within the time period specified in such third party agreement. Maxygen also has the right to terminate our license with respect to any family of related patent applications if we fail to pay our share of costs for obtaining and maintaining a patent licensed to us by Maxygen more than three times within any three year period. If the agreement were terminated, then we would lose our rights to utilize the technology and intellectual property covered by that agreement to develop, manufacture and commercialize many of our products. This would have a material adverse impact on our financial condition, results of operations and growth prospects and could prevent us from continuing our business.

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 with key industry leaders in our markets is fundamental to the success of our business. We currently have license agreements, collaborative research agreements, supply agreements, and/or distribution agreements with numerous parties. We may have limited or no control over the amount or timing of resources that any collaborator may 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 revenue 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 we develop, 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;

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our collaborators become less willing to expend their resources on research and development or commercialization efforts due to general market conditions 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 provisions of any of our agreements. For example, under our license agreement with Shell, Shell may assign the agreement without our consent 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 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 our success in 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.

A delay or failure in Shell s performance under the collaborative research agreement or license agreement with us would have a material adverse effect on our business and financial condition. We cannot control Shell s performance or the resources it devotes to our programs. For example, although Shell has agreed to fund a specified number of our full-time employee equivalents in the performance of activities under the collaborative research agreement, Shell has the right under various circumstances to decrease the number of our full-time employee equivalents that it supports. Any such reduction would have a material impact on our revenue 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 us from commercially exploiting our technology platform and any developments resulting from the collaborative research agreement. 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. 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. Disagreements with Shell could also result in expensive arbitration or litigation, which may not be resolved in our favor. 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 can be converted into fuels 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 Iogen to develop cellulosic ethanol and CHOREN Industries to develop biodiesels, and it recently announced a collaboration with Virent Energy Systems to develop biogasoline. 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 pursuing these opportunities with others and could place us at a significant competitive disadvantage in the biofuels market.

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We cannot guarantee that our relationship with Shell will continue. Shell can terminate its collaborative research agreement with us after November 1, 2009 for any or no reason by providing us with six months notice, and its license agreement with us for any or no reason by providing us with six 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.

Our failure to enter into new collaborations in our target markets could prevent us from developing and commercializing many of our products and achieving or sustaining profitability.

In addition to our existing collaborations, we will need to enter into, maintain and manage additional collaborations in our target markets to continue to grow our business. 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, the growth and success of our business depends on our ability to continue to enter into, and derive additional revenue from, collaboration agreements to develop and commercialize potential products in our various target markets. If we are unable to enter into additional collaboration agreements on terms satisfactory to us, we may not be able to commercialize our existing and potential products, grow our business, or generate sufficient revenue to support our operations.

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, 2007, our top five customers accounted for approximately 65% of our revenues, with Shell and Pfizer accounting for approximately 33% and 13%, respectively. For the three months ended March 31, 2008, our top five customers accounted for approximately 70% of our revenues, with Shell accounting for 46% of our 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 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 have historically relied on one Italian contract manufacturer, CPC Biotech srl, or CPC, to manufacture substantially all of our commercial enzymes used in our pharmaceutical business. Our pharmaceutical business, therefore, faces risks of difficulties with, and interruptions in, performance by CPC, the occurrence of which could adversely impact the availability, launch and/or sales of our enzymes in the future. We are in the process of qualifying other contract manufacturers, but we do not have agreements or commitments with such contract manufacturers at this time. The failure of CPC or any other manufacturers that we may use to supply manufactured product on a timely basis or at all, or to manufacture our enzymes or other biocatalysts in compliance with our specifications or applicable quality requirements, or to manufacture our enzymes or other biocatalysts in volumes sufficient to meet demand would adversely affect our ability to achieve development milestones under our collaborations or sell our pharmaceutical products, could harm our relationships with our collaborators or customers and could negatively affect our revenues and operating results.

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We do not currently have a long-term supply contract with CPC or any other contract manufacturers, who are under no obligation to manufacture our enzymes and could elect to discontinue the manufacture of our enzymes at any time and without cause. If CPC does not expand its facilities to match our growing demand or if we are unable to contract with other manufacturers on commercially reasonable terms or at all, we will not have enough capacity to meet our current demand projections. 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 very substantial capital investments to build that capacity or to contract with another manufacturer on terms that may be less favorable than the terms we currently have with CPC. If we choose to build our own additional manufacturing capacity, it could take a year or longer before that 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 plan to evaluate whether to invest in our own manufacturing capabilities or to establish long-term supply contracts with additional contract manufacturers. However, we cannot guarantee that we will be able to acquire, develop or contract for internal manufacturing capabilities on commercially reasonable terms, or at all. Any resources we expend on acquiring or building internal manufacturing capabilities could be at the expense of other potentially more profitable opportunities.

We are primarily dependent on contract manufacturers to manufacture our pharmaceutical products.

We currently rely on a small number of collaborators and contract manufacturers to manufacture our pharmaceutical intermediates. For example, our collaborator Arch Pharmalabs Limited, or Arch, supplies us and our customers with intermediates manufactured using our proprietary biocatalysts.

Our pharmaceutical business faces risks of difficulties with, and interruptions in, performance by Arch, the occurrence of which could adversely impact the availability, launch and/or sales of our products in the future. The failure of Arch to supply intermediates on a timely basis or at all, or to manufacture our products in compliance with our specifications or applicable quality requirements, or to manufacture the product in volumes sufficient to meet demand would adversely affect our ability to commercialize our pharmaceutical products and could negatively affect our revenues and operating results. If Arch does not expand its facilities to match our growing demand, or experiences delays related to the construction of new facilities or the expansion of existing facilities, or if we are unable to contract with other suppliers on commercially reasonable terms or at all, we will not have enough capacity to meet our current demand projections.

We intend to use Arch as the primary supplier for our planned launch of APIs. We will rely on Arch to deliver materials on a timely basis and to comply with applicable regulatory requirements, which may include current Good Manufacturing Practices, or cGMP, and will be dependent on Arch to timely manufacture and deliver sufficient quantities of materials produced under cGMP conditions to enable us to bring products to market in a timely manner. Failure by Arch, or any other contract manufacturer that we rely on to manufacture APIs, to comply with applicable regulations could adversely affect the production and commercialization of API products, which could lead to lost sales. We also rely, to a lesser extent, on other contract manufacturers to supply our pharmaceutical intermediates. The failure of these manufacturers to supply intermediates, or to manufacture products in compliance with our specifications or in sufficient volumes, would have similar negative effects on our revenues and operating results.

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

We plan to launch several new intermediates and APIs for generic drugs in non-regulated markets, and plan to launch these same products in the regulated markets when the patent protection for each branded product expires. This effort is subject to numerous risks, including the following:

- we may be unable to successfully develop the biocatalysts or manufacturing processes for our intermediates and APIs in a timely and cost-effective manner, if at all;
- we may face difficulties in transferring the developed technologies to Arch, or other contract manufacturers that we may use, for commercial scale production;
- Arch, or other 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; and
- generics manufacturers may not be willing to purchase these products from us on favorable terms, if at all.

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.

We will face numerous risks relating to any pharmaceutical products that we commercialize.

The commercialization of pharmaceutical intermediates and APIs will expose us to a number of risks, including risks related to product liability litigation, unexpected safety or efficacy concerns, product recalls or withdrawals, changes in laws or regulations relating to the generics industry, negative publicity affecting doctor or patient confidence in the products, and pressure from existing or new competitive products. In addition, our existing and potential innovator customers may view us as competitors and be less willing to do business with us. Moreover, 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. The occurrence of any of these events could have a material adverse effect on our business, results of operation, financial condition and cash flows.

Our business could be adversely affected if the clinical trials being conducted by our innovator customers who sell branded drugs 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 customers who sell branded drugs, which we refer to as innovators. In order to sell these pharmaceutical products in markets that provide effective patent protection, which we refer to as regulated markets, the products must be approved by the FDA in the United States, and similar regulatory bodies in other regulated markets, prior to commercialization. If these customers experience adverse events in their clinical trials, fail to receive regulatory approval for the drugs, or decide for business or other reasons to discontinue their clinical trials or drug development activities, our revenues will be negatively impacted. 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 regulated 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.

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Our business could be adversely affected if customers do not adopt our 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 these problems, 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 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 products and processes. If we are unable to maintain the cost advantages provided by our technology platform, customers may be less willing to acquire our products and processes, which would also negatively impact our revenues.

If we fail to fund research in certain areas, we will lose rights to develop products in those areas using technology licensed from Maxygen.

Under our license agreement with Maxygen, we can extend the scope of our license into several additional areas related to hydrogen, coal and natural gas-based fuels if we meet certain funding thresholds for research in those fields by September 2009. If we do not meet the funding requirements in any of those areas, we would lose our rights to use the licensed technology and intellectual property to develop products or pursue collaborations in that area, which could have a material adverse effect on our ability to grow our business and revenues.

We may need additional licenses from Maxygen to pursue certain future business opportunities in the chemical market.

Under our license agreement with Maxygen, we obtained exclusive rights to manufacture certain types of chemicals for specified purposes within particular fields. Should we desire to work on any chemicals that are outside the scope of these license rights, we may need to seek additional rights from Maxygen. Maxygen has no obligation to grant such rights to us and may choose not to license such rights to us on favorable terms, if at all. If we are unable to obtain rights to those additional areas, we may not be able to develop products or services or pursue collaborations in those areas, which could limit our ability to expand into the chemicals market.

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

We have received grants funded by various agencies of the federal government and foreign governments to complement and enhance our own resources. Funds available under these grants and contracts must be applied by us toward the research and development programs specified by the granting agencies rather than for all our programs generally. Moreover, revenues from such sources are uncertain because these agreements and grants generally have fixed terms and may be terminated, modified or recovered by the granting agency under certain conditions.

We may also be subject to audits by the government agencies as part of routine audits of our activities funded by our government grants. As part of an audit, these agencies may review our performance, cost structures and compliance with applicable laws, regulations and standards. If any of our costs are found to be allocated improperly, the costs may not be reimbursed and any costs already reimbursed for such

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contract may have to be refunded. Accordingly, an audit could result in an adjustment to our revenue and results of operations.

If we are unable to successfully commercialize our technology in biofuels and other bioindustrial markets, our business may fail to generate sufficient revenue, which would adversely affect our operating results.

We expect to derive a significant portion of our future revenue from the development of bioindustrial products, including biocatalysts for the production of biofuels, that we may develop with our collaborators, and by licensing our proprietary technology. In order to develop a viable biofuels business, we will need to demonstrate that we can develop biocatalysts that can be used to produce biofuels from cellulosic biomass. We do not know when we will be able to demonstrate these capabilities, if at all. If we are able to develop this technology, Shell has the right, but not the obligation, to commercialize this technology. If Shell decides to commercialize our technology, Shell will need to build a demonstration facility, 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.

In addition to biofuels, we expect to invest a significant amount of our future research and development efforts in other bioindustrial areas, including carbon management, water treatment and chemicals. We do not currently have any, and may be unable to secure, funded collaborations in these areas. Even if we are able to enter into collaborations in one or more of these areas, we and our collaborators may be unable to develop commercially viable solutions to these problems. 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.

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

Production and commercialization of cellulosic biofuel products, and other chemicals derived from cellulose, may not be feasible for a variety of reasons. For example, the development of technology for converting sugar into a commercially viable non-ethanol biofuel alternative to petroleum-based fuels is still in its infancy, and we do not know whether this can be done commercially or at all. To date there has been a lack of significant private and government funding for research and development. Furthermore, there have been very few, if any, well-directed research and development public policies emphasizing investment in the research and development of, and providing incentives for the commercialization of, and transition to, biofuels.

Substantial development of infrastructure will be required for the biofuels industry to grow. Areas requiring expansion include, but are not limited to, additional rail capacity, additional storage facilities for biofuels, increases in truck fleets capable of transporting biofuels within localized markets, expansion of refining and blending facilities to handle biofuels, and growth in the fleet of vehicles capable of using biofuels. 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 potential biofuel products and impose additional costs that would hinder the commercialization of biofuels.

Currently, we believe that there are no commercial scale cellulosic biofuel production plants in operation in the United States. 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.

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Additionally, it is likely that different biocatalysts will be required to produce biofuels and other chemicals from cellulosic biomass. Therefore, different biocatalysts may be needed to be developed for use in different geographic locations to convert the biomass available in each locale into sugars that can be used in the production of these biofuels and chemicals. This will make the development of biofuels and other chemicals derived from cellulose more expensive.

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 ethanol will increase.

We will have to develop or acquire rights to a commercial scale expression system for enzymes that convert cellulosic biomass to sugars.

In order to commercialize cellulosic biofuels, we will need access to an expression system that is capable of producing the necessary biocatalysts at commercial scale. Because we do not currently have access or rights to a commercial expression system for enzymes that convert cellulosic biomass to sugars, we will need to buy, license or develop this type of expression system. We may not be able to license the systems on commercially reasonable terms or at all, particularly since Danisco (which purchased Genencor International) and Novozymes are major sources of expression systems and also potential competitors of ours. If we cannot license the system on commercially reasonable terms, we would be required to attempt to develop such a system on our own, which may be difficult, costly and time consuming, in part because of the broad, existing intellectual property rights owned by Danisco, Novozymes and others. We cannot be certain whether we would be successful in developing such a system.

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

Biofuels 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 products could decline, and we may be unable to produce products that are a commercially viable alternative to petroleum-based fuels.

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 remain high during this period and subsequently fall, our revenues would be negatively impacted.

Our approach to the biofuels and chemical markets may be limited by the scarcity or cost of non-food sustainable biomass sources.

Our approach to the biofuels and chemical markets will be dependent upon the availability and price of the cellulosic biomass which we need to use to produce biofuels and other chemicals derived from cellulose. If the availability of cellulosic biomass decreases or its price increases, this will reduce our potential profit margins, especially if market conditions do not allow us to pass along increased costs to our customers. At certain levels, prices may make these products uneconomical to use and produce.

The price and availability of cellulosic biomass may be influenced by general economic, market and regulatory factors. These factors include 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.

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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 or repatriate profits to the United States;
- 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;
- 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 other risks that could adversely affect our business 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. In connection with any future acquisitions, we could:

- issue additional equity securities which would dilute current stockholders percentage ownership;
- incur substantial debt to fund the acquisitions; or

assume significant liabilities.

Acquisitions involve numerous risks, including problems integrating the purchased operations, technologies or products, unanticipated costs, 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

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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, 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 the third parties that sell pharmaceutical products that are manufactured using our biocatalysts to provide us with complete and accurate information regarding revenue, costs of revenue and payments owed to us on a timely basis. In addition, we rely on suppliers and contract manufacturers to provide us with timely and accurate information regarding our inventories, and current and former collaborators to provide us 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 statistics for the period based on prior history, 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 revenue 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.

If we lose key 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.

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 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 competition for, or 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 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 technologies or acquired through strategic or other transactions, especially in the new 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 acquire these services or to develop this expertise could impair the growth, if any, of our business. Additionally, under our agreements with Shell, we are required to meet certain hiring targets and failure to meet such targets is considered a breach of the agreements, which could give Shell a right to terminate the agreements. Furthermore, we conduct a substantial portion of our generic pharmaceutical business in India

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and believe that to expand our position in the generics market, we will need to employ and retain people who have or can cultivate strong relationships with contract manufacturers and/or customers in India.

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 July 31, 2008, we owned or had licensed rights to approximately 230 issued patents and approximately 150 pending patent applications in the United States and in various foreign jurisdictions. Of the licensed patents and patent applications, most are owned by Maxygen or the California Institute of Technology and exclusively licensed to us for use in certain fields. As of July 31, 2008, we owned approximately 15 issued patents and approximately 75 pending patent applications in the United States and in various foreign jurisdictions directed to our enabling technologies and to our methods and products used in the production of pharmaceuticals such as atorvastatin, montelukast and azetidinone compounds, and 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. Additional uncertainty may result from an inconsistent policy in the United States that has emerged regarding the scope of legal claims allowed in biotechnology patents. 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, and (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 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 commercialize products in 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

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defend our intellectual property rights or as a result of alleged infringement of the rights of others, may 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, which may result in significant cost or delay to us, or which could be technically infeasible.

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, an 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 through our collaborators, do not protect intellectual property rights to the same extent as the laws of the United States. Many companies have encountered significant problems in protecting and defending intellectual property rights in 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, which could make it difficult for us to stop the infringement of our patents or misappropriation of our other intellectual property rights. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business. Accordingly, our efforts to protect our intellectual property in such countries may be inadequate.

If our biocatalysts, or the genes that code for our biocatalysts, are stolen, 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 or misappropriated, 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.

Under our license with Maxygen, there are limitations on our ability to enforce Maxygen s patents to which we hold a license, which could have a material adverse effect on our business.

Our core enabling technology is licensed from Maxygen. Under our agreement with Maxygen, Maxygen has the first right to enforce many of the patents that we licensed, particularly those directly related to gene shuffling technology. If Maxygen declines to enforce these patent rights, we can enforce these rights after a delay of up to six months, or Maxygen can deny us the ability to enforce if Maxygen concludes that such

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enforcement may have a material adverse impact on Maxygen or one or more other licensees of Maxygen s technology. Some portions of the technology licensed to us by Maxygen are owned by third parties that retain the right to enforce the patents. If Maxygen or these third parties fail to enforce their patent rights, our business could be materially adversely affected. Maxygen also has the right to control the defense of patent infringement claims made by third parties alleging infringement related to gene shuffling technology. If Maxygen does not provide a timely and adequate defense to these claims, we could be forced to stop using the licensed technology, redesign our products and/or obtain a license from the party claiming infringement, which may not be available on commercially reasonable terms or at all. If Maxygen were to become acquired or controlled by a competitor of ours or a third party who is not willing to work with us on the same terms or commit the same resources as Maxygen, our business could be harmed.

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 new 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.

If we lose key management personnel, it could harm our business.

Our business involves complex, global operations across a variety of markets and requires a management team 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.

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 (previously Diversa Corporation), Royal DSM N.V. and 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.

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

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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. There are also many large, well-established fine chemical manufacturing companies, such as DSM, BASF 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 A/S and Amano Enzyme Inc., whose industrial enzymes (for detergents, for example) are occasionally used in pharmaceutical processes. There is also competition in this area is 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, who has partnered with BP p.l.c. to produce biofuels, and Danisco A/S/Genencor, which is marketing cellulases to convert biomass into sugar. DuPont, Iogen Corp., Verenium, Virent Energy Systems, Inc. and Amyris are also attempting to develop non-ethanol biofuels. DuPont has announced plans to develop and market biobutanol in collaboration with BP, and has recently announced a joint venture with Genecor to develop and commercialize a low-cost solution for the production of cellulosic ethanol from non-food sources. In addition, Virent is collaborating with Shell to develop biogasoline directly from sugars. Other potential competitors such as Range Fuels Inc. are focused on developing non-biocatalytic thermochemical processes to convert biomass into fuels. 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.

We will face competition from a variety of companies focusing on developing biocatalytic routes to chemicals, including DuPont, DSM and Metabolix.

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. 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.

Our lack of 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 biocatalysis business and expand our biocatalyst discovery and development process. Although we believe that we have sufficient cash on hand to fund our operations and meet our obligations until we become cash flow positive, our current plans and assumptions may change and our need for additional capital will

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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 our customers and 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, 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 additional 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.

The terms of our loan and security agreement with General Electric Capital Corporation and Oxford Finance Corporation may restrict our ability to engage in certain transactions.

In September 2007, we entered into a loan and security agreement with General Electric Capital Corporation, or GE, and Oxford Finance Corporation, or Oxford. Pursuant to the terms of the loan and security agreement, we cannot engage in certain transactions, including disposing of certain assets, transferring capital to foreign subsidiaries, declaring dividends, acquiring or merging with another entity or leasing additional real property unless certain conditions are met or unless we receive prior approval of GE and Oxford. If GE and Oxford do not consent to any of these actions that we desire to take, we could be prohibited from engaging in transactions which could be beneficial to our business and our stockholders.

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 or infections in our laboratory or production facilities 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.

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 expenses, delays, or other

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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, we do not know what effect, if any, would result if our biocatalysts were released into the natural environment. 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.

Stringent laws and required government approvals may be time consuming and costly, and could delay our introduction of products, and changes to existing regulations and policies may present technical, regulatory and economic barriers, all of which may significantly reduce demand for biofuels.

In order to achieve and maintain market acceptance, our biofuels business 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. As these regulations and standards evolve, and if new regulations or standards are implemented, we and our collaborators may be required to modify our proposed facilities and processes, or develop and support new facilities or processes, and this will increase our costs. Any failure to comply, or delays in compliance, with the various existing and evolving industry regulations and standards could prevent or delay our production of biofuels and the provision of related services could harm our biofuels business.

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 calls for 9 billion gallons of liquid transportation fuels sold in 2008 to come from alternative sources, including biofuels, a mandate that grows to 36 billion gallons by 2022. In the U.S. 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 bioindustrials products may be subject to additional regulations.

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We use hazardous materials in our business. Any claims relating to improper handling, storage, or disposal of these materials could be time consuming and costly and could adversely affect our business and results of operations.

Our research and development processes involve the controlled use of hazardous materials, including chemical, radioactive, and biological materials. Our operations also produce hazardous waste products. 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 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. In addition, compliance with applicable environmental laws and regulations may be expensive, and current or future environmental regulations may impair our research, development, or production efforts.

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 could also be named in product liability claims that are brought against our customers that use our products, particularly those customers in the pharmaceutical market. Insurance coverage is expensive and may be difficult to obtain, and may not be available in the future on acceptable terms, or at all. 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. In addition, this insurance may not provide adequate coverage against potential losses. If claims or losses exceed our liability insurance coverage, we may go out of business.

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. Our existing NOLs may be subject to limitations arising from previous ownership changes, and if we undergo an ownership change in connection with or after this public offering, our ability to utilize NOLs could be further 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. The existing NOLs of some of our subsidiaries currently may be subject to limitations arising from ownership changes prior to, or in connection with, their acquisition by us. 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 Relating to this Offering

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, both of which will become effective upon the completion of this offering, may delay or prevent an acquisition of us. Among other things, our amended and restated certificate of incorporation and bylaws will provide for a board of directors which is divided into three classes, with staggered three-year terms and will provide that all stockholder action must be effected at a duly called meeting of the stockholders and not by a consent in

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writing, and will 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.

When this offering is completed, our officers, directors and existing stockholders who hold at least 5% of our stock will together control approximately % of our outstanding common stock. As of March 31, 2008, Maxygen, Biomedical Sciences Investment Fund Pte Ltd and Shell owned 25%, 14% and 13% of our outstanding common stock, respectively, as calculated on an as-converted basis. 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 and you may be unable to sell your shares at or above the offering price.

The initial public offering price for our shares will be determined by negotiations between us and representatives of the underwriters and may not be indicative of prices that will prevail in the trading market. 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;
- our cash and short-term investment position;
- 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 or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital commitments;
- the entry into, modification or termination of collaborative arrangements;
- additions or losses of customers;

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additions or departures of key personnel;

competition from existing products or new products that may emerge;

issuance of new or updated research or reports by securities 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 laws, regulations and policies applicable to our business and products;

announcement or expectation of additional financing efforts;

sales of our common stock by us or our 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.

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. If the market price of shares of our common stock after this offering does not exceed the initial public offering price, you may not realize any return on your investment in us and may lose some or all of your investment. 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.

A significant portion of our total outstanding shares of common stock is restricted from immediate resale but may be sold into the market in the near future. This could cause the market price of our common stock to drop significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares of common stock intend to sell shares, could reduce the market price of our common stock. After this offering, we will have outstanding shares of common stock. Of these shares, all of the shares offered under this prospectus will be freely tradable without restriction under the federal securities laws unless purchased by our affiliates, and 35,805,720 shares are currently restricted under securities laws or as a result of lock-up agreements but will be able to be resold after the offering as described in the Shares Eligible for Future Sale section of this prospectus. Moreover, after this offering, holders of an aggregate of 33,124,426 shares of our common stock will have rights, subject to some conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders. As of March 31, 2008, our three largest stockholders collectively hold 52% of our outstanding common stock, as calculated on an as-converted basis. If one or more of them were to sell a substantial portion of

the shares they hold, it could cause our stock price to decline.

We also intend to register all shares of common stock that we may issue under our 2008 Incentive Award Plan. Once we register these shares, they can be freely sold in the public market upon issuance and once vested, subject to the 180-day lock-up periods under the lock-up agreements described in the Underwriting section of this prospectus.

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No public market for our common stock currently exists and an active trading market may not develop or be sustained following this offering.

Prior to this offering, there has been no public market for our common stock. An active trading market may not develop following the completion of this offering or, if developed, may not be sustained. The lack of an active market may impair your ability to sell your shares at the time you wish to sell them or at a price that you consider reasonable. The lack of an active market may also reduce the fair market value of your shares. An inactive market may also impair our ability to raise capital to continue to fund operations by selling shares and may impair our ability to acquire other companies or technologies by using our shares as consideration.

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, 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.

Purchasers in this offering will experience immediate and substantial dilution in the book value of their investment.

The initial public offering price will be substantially higher than the tangible book value per share of shares of our common stock based on the total value of our tangible assets less our total liabilities immediately following this offering. Therefore, if you purchase shares of our common stock in this offering, you will experience immediate and substantial dilution of approximately $ per share in the price you pay for shares of our common stock as compared to its tangible book value, assuming an initial public offering price of $ per share. To the extent outstanding options to purchase shares of common stock are exercised, there will be further dilution. For further information on this calculation, see Dilution elsewhere in this prospectus.

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

Although we currently intend to use the net proceeds from this offering in the manner described in Use of Proceeds elsewhere in this prospectus, we will have broad discretion in the application of the net proceeds. Our failure to apply these funds effectively could affect our ability to continue to develop and sell our products and grow our business, which could cause the value of your investment 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.

We have never operated as a public company. As a public company, we will 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 Securities and Exchange Commission and The Nasdaq Stock Market, imposes 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 2009,

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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. We may not be able to remediate the material weakness in our internal control over financial reporting prior to the time of this testing. Our compliance with Section 404 will require that we incur substantial accounting expense and expend significant management time on compliance-related issues. We will need to hire additional accounting and financial staff with appropriate public company experience and technical accounting knowledge. Moreover, if we are not able to comply with the requirements of Section 404 in a timely manner, or if we are unable to remediate the material weakness in our internal control over financial reporting 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 effects on our business, reputation, results of operations, financial condition or liquidity.

We do not anticipate paying cash dividends, and accordingly, stockholders must rely on stock appreciation for any return on their investment.

We do not anticipate paying cash dividends in the future. As a result, only appreciation of the price of our common stock will provide a return to stockholders. Investors seeking cash dividends should not invest in our common stock.

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FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements that involve risks and uncertainties. The forward-looking statements are contained principally in the sections entitled Prospectus Summary, Risk Factors, Management s Discussion and Analysis of Financial Condition and Results of Operations and Business. These statements relate to future events or our future financial performance and involve known and unknown risks, uncertainties and other factors that could cause our actual results, levels of activity, performance or achievement to differ materially from those expressed or implied by these forward-looking statements. These risks and uncertainties are contained principally in the section entitled Risk Factors.

Forward-looking statements include all statements that are not historical facts. In some cases, you can identify forward-looking statements by terms such as may, will, should, could, would, expects, plans, anticipates, believes, estimates, projects, predicts, poten those terms, and similar expressions and comparable terminology intended to identify forward-looking statements. These statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements. These forward-looking statements represent our estimates and assumptions only as of the date of this prospectus and, except as required by law, we undertake no obligation to update or revise publicly any forward-looking statements, whether as a result of new information, future events or otherwise after the date of this prospectus.

This prospectus also contains estimates and other information concerning our current and target markets that are based on industry publications, surveys and forecasts, including those generated by IMS Health, Datamonitor and the U.S. Energy Information Association. This information involves a number of assumptions and limitations, and you are cautioned not to give undue weight to these estimates and information. These industry publications, surveys and forecasts generally indicate that their information has been obtained from sources believed to be reliable. The industry in which we operate is subject to a high degree of uncertainty and risk due to a variety of factors, including those described in Risk Factors. These and other factors could cause actual results to differ materially from those expressed in these publications, surveys and forecasts.

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USE OF PROCEEDS

We estimate that we will receive net proceeds of approximately $ million from the sale of shares of common stock offered in this offering, based on an assumed initial public offering price of $ per share (the mid-point of the price range set forth on the cover page of this prospectus) and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. A $1.00 increase (decrease) in the assumed initial public offering price of $ per share would increase (decrease) the net proceeds to us from this offering by $ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. If the underwriters over-allotment option is exercised in full, we estimate that our net proceeds will be approximately $ million.

We currently intend to use the net proceeds of this offering, together with existing cash and cash equivalents, to fund working capital and other general corporate expenditures, including the costs associated with being a public company and improving our internal control over financial reporting. We estimate that we will use approximately $1 million to $3 million to purchase and implement an enterprise resource planning software system and to hire additional personnel to improve our internal control over financial reporting. We may also use a portion of the net proceeds to acquire other businesses, products or technologies, including those that would enable us to seek new markets for our existing products, develop new products or increase our ability to manufacture and produce our biocatalysts. However, we do not have agreements or commitments for any specific acquisitions at this time.

The expected use of net proceeds of this offering represents our current intentions based upon our present plan and business conditions. As of the date of this prospectus, we cannot specify with certainty all of the particular uses for the net proceeds to be received upon the completion of this offering. Accordingly, we will have broad discretion in the application of the net proceeds, and investors will be relying on our judgment regarding the application of the proceeds of this offering.

Until we use the net proceeds of this offering, we intend to invest the net proceeds in short-term, interest-bearing, investment-grade securities. We cannot predict whether the proceeds invested will yield a favorable return.

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. In addition, in certain circumstances, we are prohibited by various borrowing arrangements from paying cash dividends without the prior written consent of the lenders. Subject to the foregoing, 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.

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CAPITALIZATION

The following table sets forth our cash, cash equivalents and short-term investments and our capitalization as of March 31, 2008:

- on an actual basis;
- on a pro forma basis to reflect:
  - the filing of a restated certificate of incorporation to authorize shares of common stock and shares of undesignated preferred stock;
  - the conversion of all of our outstanding shares of preferred stock into 32,330,100 shares of common stock and the related conversion of all outstanding preferred stock warrants to common stock warrants;
  - the reclassification of the preferred stock warrant liability to stockholders equity upon the completion of this offering; and
- on a pro forma as adjusted basis to reflect the pro forma adjustments described above and our receipt of the estimated net proceeds from this offering, based on an assumed initial public offering of shares at a price of $ per share (the mid-point of the price range set forth on the cover page of this prospectus) and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The pro forma and pro forma as adjusted information below is illustrative only and our capitalization following the completion of this offering will be adjusted based on the actual initial public offering price and other terms of this offering determined at pricing. You should read this table together with Management s Discussion and Analysis of Financial Condition and Results of Operations and our consolidated financial statements and the related notes appearing elsewhere in this prospectus.

	Actual	Pro Forma	Pro Forma As Adjusted
		(unaudited)	
	(in thousands, except share data)		
Cash, cash equivalents and marketable securities	$ 64,912	$ 64,912	$
Long-term debt, net of current portion	$ 11,726	$ 11,726	$
Redeemable convertible preferred stock warrant liabilities	2,260		
Redeemable convertible preferred stock, $0.0001 par value; 33,204,886 shares authorized, 32,269,494 shares issued and outstanding, actual; no shares authorized, no shares issued and outstanding, pro forma; no shares authorized, no shares issued and outstanding, pro forma as adjusted	132,746		
Stockholders equity (deficit):			
Common stock, $0.0001 par value; 62,000,000 shares authorized; 3,475,620 issued and outstanding, actual; 35,805,720 shares issued and outstanding, pro forma shares issued and outstanding, pro forma as adjusted		4	
Additional paid-in-capital	7,025	142,027	
Accumulated other comprehensive income	937	937	

Accumulated deficit	(108,101)	(108,101)	
Total stockholders equity deficit	(100,139)	34,867	
Total capitalization	$ 46,593	$ 46,593	$

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Each $1.00 increase or decrease in the assumed initial public offering price of $ per share (the mid-point of the price range set forth on the cover page of this prospectus) would increase or decrease, as applicable, our cash, cash equivalents and marketable securities, working capital, total assets and stockholders deficit by approximately $ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The number of shares of common stock shown as issued and outstanding in the table is based on the number of shares of our common stock outstanding as of March 31, 2008 and excludes:

- 9,820,074 shares of common stock issuable upon the exercise of options outstanding as of March 31, 2008 at a weighted average exercise price of $2.49 per share;

- 491,513 shares of common stock issuable upon the exercise of warrants outstanding as of March 31, 2008 at a weighted average exercise price of $3.95 per share; and

- shares of our common stock reserved for future issuance under our 2008 Incentive Award Plan, which will become effective in connection with the consummation of this offering (including 1,569,360 shares of common stock reserved for future grant or issuance under our 2002 Stock Plan, which shares will be added to the shares to be reserved under our 2008 Incentive Award Plan upon the effectiveness of the 2008 Incentive Award Plan).

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DILUTION

If you invest in our common stock, your interest will be diluted to the extent of the difference between the public offering price per share of our common stock and the pro forma as adjusted net tangible book value per share of our common stock after this offering.

Our pro forma net tangible book value at March 31, 2008 was $28.5 million, or $0.75 per share of common stock. Pro forma net tangible book value per share represents total tangible assets less total liabilities (which includes the reclassification of preferred stock warrant liability into additional paid-in capital upon the conversion to common stock of preferred stock underlying warrants), divided by the number of outstanding shares of common stock on March 31, 2008, after giving effect to the conversion of all outstanding shares of preferred stock into shares of common stock as if the conversion occurred on March 31, 2008, and assuming the exercise of options to purchase up to 1,840,845 shares of common stock which our officers, directors and beneficial owners of more than 5% of our outstanding common stock have a right to acquire within 60 days of March 31, 2008, at a weighted average exercise price of $1.13. Our pro forma as adjusted net tangible book value at March 31, 2008, after giving effect to the sale of shares of common stock in this offering at an assumed initial public offering price of $ per share and after deducting the estimated underwriting discounts and commissions and estimated offering expenses, would have been approximately $ million, or $ per share. This represents an immediate increase in pro forma as adjusted net tangible book value of $ per share to existing stockholders and an immediate dilution of $ per share to new investors, or approximately % of the assumed initial public offering price of $ per share. The following table illustrates this per share dilution:

Assumed initial public offering price per share		$
Pro forma net tangible book value per share at March 31, 2008	$ 0.75	
Increase in pro forma net tangible book value per share attributable to this offering		
Pro forma as adjusted net tangible book value per share after this offering		
Dilution per share to new investors		$

A $1.00 increase (decrease) in the assumed initial public offering price of $ per share would increase (decrease) our pro forma as adjusted net tangible book value by $ million, the pro forma as adjusted net tangible book value per share by $ per share and the dilution in the pro forma net tangible book value to new investors in this offering by $ per share, assuming the number of shares offered by us, as set forth on the cover pages of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The following table shows, as of March 31, 2008, the number of shares of common stock purchased from us, the total consideration paid to us and the average price paid per share by existing stockholders and by new investors purchasing common stock in this offering at an assumed initial public offering price of $ per share, before deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

	Shares Purchased		Total Consideration		Average Price Per Share
	Number	Percent	Amount	Percent	
Existing stockholders		%	$	%	$
New investors					
Total		100.0%	$	100.0%	$

A $1.00 increase (decrease) in the assumed initial public offering price of $ per share would increase (decrease) total consideration paid by new investors, total consideration paid by all stockholders and the average price per share paid by all stockholders by $, $ and $, respectively,

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assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the underwriting discount and estimated offering expenses payable by us.

The discussion and tables in this section regarding dilution are based on 37,646,565 shares of common stock issued and outstanding as of March 31, 2008 which reflects (i) the automatic conversion of all of our preferred stock into an aggregate of 32,330,100 shares of our common stock, (ii) includes the 1,840,845 shares of common stock which our officers, directors and beneficial owners of more than 5% of our outstanding common stock have a right to acquire within 60 days of March 31, 2008 and (iii) excludes:

- shares of common stock issuable upon the exercise of 7,979,229 options outstanding at a weighted average exercise price of $2.80 per share;
- shares of common stock issuable upon exercise of 491,513 warrants outstanding at a weighted average exercise price of $3.95 per share; and
- shares of common stock reserved for issuance under our 2008 Incentive Award Plan, which will become effective upon the completion of this offering (plus an additional 1,569,360 shares of common stock reserved for future grant or issuance under our 2002 Stock Plan as of March 31, 2008, which shares will be added to the shares to be reserved under our 2008 Incentive Award Plan upon the effectiveness of the 2008 Incentive Award Plan).

If the underwriters exercise their over-allotment option in full, the following will occur:

- the number of shares of our common stock held by existing stockholders would decrease to approximately % of the total number of shares of our common stock outstanding after this offering; and
- the number of shares of our common stock held by new investors would increase to approximately % of the total number of shares of our common stock outstanding after this offering.

To the extent that outstanding options or warrants are exercised, you will experience further dilution. If all of our outstanding options and warrants were exercised, our pro forma net tangible book value as of March 31, 2008 would have been $52.8 million, or $1.14 per share, and the pro forma, as adjusted net tangible book value after this offering would have been $ million, or $ per share, causing dilution to new investors of $ per share.

In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

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SELECTED CONSOLIDATED 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 prospectus. 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 statements of operations data for 2005, 2006 and 2007 and the balance sheet data as of December 31, 2006 and 2007 from our audited consolidated financial statements appearing elsewhere in this prospectus. The statement of operations data for 2003 and 2004 and the balance sheet data as of December 31, 2003, 2004 and 2005 have been derived from our audited consolidated financial statements not included in this prospectus. The statements of operations data for the three months ended March 31, 2007 and 2008 and the balance sheet data as of March 31, 2008 is derived from our unaudited consolidated financial statements appearing elsewhere in this prospectus.

	Years Ended December 31,					Three Months Ended March 31,	
	2003	2004	2005	2006	2007	2007	2008
						(unaudited)	
	(in thousands, except per share data)						
Consolidated Statements of Operations Data:							
Revenues:							
Product	$	$	$ 2,265	$ 2,544	$ 11,418	$ 1,456	$ 3,545
Related party collaborative research and development				863	8,481	1,289	3,881
Collaborative research and development	8,442	4,873	9,363	8,403	4,733	1,882	865
Government grants			156	317	701	77	83
Total revenues	8,442	4,873	11,784	12,127	25,333	4,704	8,374
Cost and operating expenses:							
Cost of product revenues			2,233	1,806	8,319	1,351	2,887
Research and development	12,658	12,891	12,839	17,257	35,644	4,763	9,855
Selling, general and administrative	3,053	5,187	7,891	11,880	19,713	4,036	8,738
Total cost and operating expenses	15,711	18,078	22,963	30,943	63,676	10,150	21,480
Loss from operations	(7,269)	(13,205)	(11,179)	(18,816)	(38,343)	(5,446)	(13,106)
Interest income	301	240	245	742	1,491	368	761
Interest expense and other		(128)	(413)	(724)	(2,533)	32	(1,466)
Loss before provision (benefit) for income taxes	(6,968)	(13,093)	(11,347)	(18,798)	(39,385)	(5,046)	(13,811)
Provision (benefit) for income taxes			243	(127)	(408)	50	98
Net loss	(6,968)	(13,093)	(11,590)	(18,671)	(38,977)	(5,096)	(13,909)
Accretion of redeemable convertible preferred stock(1)	(1,250)	(1,250)					
Net loss attributable to common stockholders	$ (8,218)	$ (14,343)	$ (11,590)	$ (18,671)	$ (38,977)	$ (5,096)	$ (13,909)
Net loss attributable to common stockholders per share of common stock, basic and diluted(2)	$ (8.22)	$ (13.38)	$ (7.69)	$ (10.99)	$ (15.53)	$ (2.72)	$ (4.10)
Shares used in computing net loss per share of common stock, basic and diluted(2)	1,000	1,072	1,508	1,699	2,510	1,873	3,395
Pro forma net loss per share of common stock, basic and diluted (unaudited)(2)					$ (1.29)		$ (0.37)

Shares used in computing pro forma net loss per share of common stock, basic and diluted (unaudited)(2)	29,116	35,725

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(1) During 2003 and 2004, we recorded accretion to increase the preferred stock to its redemption value due to the voting majority held by a certain stockholder which could effect a liquidation of the preferred stock, pursuant to EITF Topic D-98. In 2005, the probability of the liquidation of the preferred stock was reduced and accordingly we no longer recorded the related accretion subsequent to December 31, 2004.

(2) Please see Note 2 of our consolidated financial statements appearing elsewhere in this prospectus for an explanation of the method used to calculate basic and diluted net loss per share of common stock, the pro forma basic and diluted net loss per share of common stock and the number of shares used in the computation of the per share amounts.

			December 31,			March 31,
	2003	2004	2005	2006	2007	2008
			(in thousands)			
Consolidated Balance Sheet Data:						
Cash, cash equivalents and marketable securities	$ 11,380	$ 16,734	$ 7,005	$ 32,246	$ 84,070	$ 64,912
Working capital	10,682	12,837	2,781	22,722	58,919	42,404
Total assets	20,298	23,276	21,380	46,659	113,541	95,197
Current and long-term financing obligations		2,306	4,017	4,073	17,407	16,889
Redeemable convertible preferred stock	26,529	27,779	37,750	77,513	132,746	132,746
Total stockholders deficit	(8,665)	(12,984)	(34,774)	(52,766)	(87,468)	(100,139)

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MANAGEMENT S DISCUSSION AND ANALYSIS OF

FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes that appear elsewhere in this prospectus. In addition to historical financial information, the following discussion contains forward-looking statements that involve risks and uncertainties. Our actual results may differ materially from those discussed below. Factors that could cause or contribute to these differences include those discussed below and elsewhere in this prospectus, particularly in Risk Factors.

Overview

We are a leading developer of proprietary biocatalysts that we believe have the potential to revolutionize chemistry-based manufacturing processes across a variety of industries. Our proprietary biocatalysts include existing biocatalysts that we have optimized and new biocatalysts that we have developed using our technology platform. Biocatalysts are enzymes or microbes that initiate or accelerate chemical reactions. This process, known as biocatalysis, can enable the production of products used in everyday life. Our proprietary technology platform allows us to rapidly evolve and optimize biocatalysts to perform specific and desired chemical reactions for commercial scale industrial applications. We believe we can use our technology platform to improve industrially relevant characteristics of any biocatalyst, enabling manufacturing processes that are faster, less complex, less capital intensive and lower cost than conventional chemistry-based processes. In addition, we believe that our technology platform can enable the production of products that are currently impossible to produce economically at commercial scale.

We were incorporated in Delaware in January 2002 as a wholly-owned subsidiary of Maxygen, Inc. In March 2002, we licensed from Maxygen our core enabling technology, which comprises advanced biotechnology methods, bioinformatics and years of accumulated know-how which we use to significantly expedite the process of developing customized enzymes and microbes. In March 2002, we also commenced operations, and from 2002 until 2005, our operations focused on organizing and staffing our company and developing our technology platform. During this period, we funded our activities principally from the proceeds of a venture capital equity financing in 2002 and a strategic equity investment by our collaborator Pfizer, Inc. in 2004. We also relied on borrowings under our financing arrangements and revenues from numerous research and development collaborations, including those with Bristol-Myers Squibb Company, Cargill, Inc., Chevron Corporation, Eli Lilly and Company, Hercules, Inc., Lonza AG, Matrix Pharmaceuticals Inc., Merck & Co., Inc., Novozymes A/S, Pfizer, Rio Tinto Group, Royal DSM N.V., Sandoz International GmbH, and Schering-Plough Corporation. In 2005, we recognized our first revenue from the sales of products. Since 2005, we have continued to generate revenue, to enter into collaborations in the pharmaceuticals market, and began our research collaboration with Equilon Enterprises LLC dba Shell Oil Products US, or Shell, in the biofuels market.

To date, we have generated revenues primarily from collaborative research and development funding, sales of our products and government grants. Our total revenue has grown significantly, rising five-fold over the last four years, and more than doubling over the last two years, from $12.1 million in 2006 to $25.3 million in 2007. In the three months ended March 31, 2008, our total revenue grew to $8.4 million from $4.7 million for the comparable period in 2007, which represents a 78% increase. Most of our revenue since inception has been derived from collaborative research and development arrangements, which accounted for 80%, 76% and 52% of our revenues in 2005, 2006 and 2007, respectively, and 67% and 57% of our revenues in the three months ended March 31, 2007 and 2008, respectively. Our product sales have grown over five-fold over the last three years, from $2.3 million in 2005 to $11.4 million in 2007. Notwithstanding our revenue growth, we have continued to experience significant losses as we have invested heavily in our own product pipeline, research and development capacity for our collaborations, and administrative infrastructure in connection with growth in our business. As of March 31, 2008, we had

an accumulated deficit of $108.1 million. We incurred net losses of $11.6 million, $18.7 million and $39.0 million in 2005, 2006 and 2007, respectively, and net losses of $5.1 million and $13.9 million in the three months ended March 31, 2007 and 2008, respectively. 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 and the related expense, such that we do not expect to achieve profitability prior to 2010.

We initially 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 innovators in connection with their drug development efforts. In these collaborations, we typically receive 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 and Codex Biocatalyst Panels. 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 active pharmaceutical ingredients, or 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. Codex Biocatalyst Panels are plates embedded with genetically diverse variants of our proprietary biocatalysts, which allow our customers to screen our biocatalysts at their facilities and evaluate whether a biocatalyst produces a desired activity that is applicable to a particular pharmaceutical manufacturing process. We view 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, and we plan to increase our efforts to expand Codex Biocatalyst Panels sales.

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 biocatalysts produce detectible activity. We use our optimization services to optimize desired biocatalysts identified through our screening services and our customers use of Codex Biocatalyst Panels. These services, in turn, can lead to sales of biocatalysts to our pharmaceutical customers.

We provide our biocatalysts, Codex Biocatalyst Panels, screening and optimization services and intermediates to our innovator customers and provide intermediates to our generics customers. We plan to launch several new intermediates and APIs in non-regulated markets for purchase by manufacturers of generic forms of drugs and intend to sell these same intermediates and APIs for use in the regulated markets when the patent protection for each product expires. We sell our products primarily to generics manufacturers through our small direct sales and business development force in the United States, United Kingdom and Germany.

In the biofuels market, we entered into a research agreement with Shell in 2006. The goal of this initial research collaboration was to develop biocatalysts to break down sustainable non-food cellulosic biomass. In connection with this collaboration, we received up-front payments, research and development service payments and a milestone payment.

Based on the success of this initial collaboration, in 2007, we entered into a new, expanded multiyear research collaboration with Shell. 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 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. We are eligible for milestone payments upon the achievement of certain technical goals beginning in 2009, as well as additional milestones in each of the subsequent years of the agreement. We will also be eligible for royalty payments if Shell produces fuel products at commercial scale that are manufactured using our intellectual property or intellectual property that was developed by us and Shell under the research collaboration.

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Under the terms of our license agreement with Maxygen, we are obligated to pay Maxygen a significant portion of certain types of consideration we receive in connection with our biofuels research collaboration with Shell. The actual fees payable to Maxygen will depend on the amount, timing and type of consideration we receive, including payments from the sale of our equity securities and payments in connection with the research and development and/or sale of fuel products made with a biocatalyst developed using the licensed technology. In the case of consideration received from the sale of our equity securities to Shell, we are obligated to pay Maxygen a significant portion of any excess paid above $3.97 per share, the price per share of our Series D preferred stock. With regard to FTE funding, we are only obligated to pay Maxygen to the extent the consideration received exceeds specified amounts which were based on historical FTE rates we charged to our pharmaceutical collaborators. In connection with all consideration received from Shell relating to our biofuels research collaboration, we were obligated to pay Maxygen $0.6 million and $7.8 million in 2006 and 2007, respectively, and $0.1 million in the three months ended March 31, 2008. During 2007, amounts owed to Maxygen in connection with Shell s FTE funding were less than 5% of the total FTE payments we received from Shell.

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 rely heavily on contract manufacturing organizations, or CMOs, to manufacture our biocatalysts and intermediates at commercial scale. Arch Pharmalabs Limited, or Arch, of Mumbai, India manufactures all of our commercialized drug products for sale to generic API manufacturers. Historically, we have relied upon CPC Biotech, srl, or CPC, of Naples, Italy to provide all of our commercial scale enzyme production for use by our innovator collaborators in their internal manufacturing as well as by us for the manufacture of our own intermediates. We are in the process of qualifying other contract manufacturers, but we do not have agreements or commitments with such contract manufacturers at this time. We have recently established a subsidiary in Hungary to manufacture certain microbes at commercial scale, but that capability will not be fully operational until 2009, at the earliest.

We intend to maintain a capital-efficient business model, so we actively seek CMOs 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 CMOs. 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. We believe that, if our collaborators choose to utilize our technology to commercialize new products, this capital-efficient business model will allow us to expand into new markets without having to finance or operate large industrial facilities.

In addition to our organic growth, we have expanded through the acquisition of technologies and of businesses. In February 2005, we acquired Jülich Fine Chemicals GmbH in Jülich, Germany, and have operated it as a wholly-owned subsidiary since then. In July 2007, we acquired BioCatalytics, Inc. in Pasadena, California. Prior to our acquisition of these businesses, both had been engaged in the sale of research enzymes and services for the pharmaceutical and fine chemical industries.

Revenue, Cost of Product Revenues

Revenue

Our revenues comprise collaborative research and development revenues, product revenues and government grants.

Collaborative research and development revenues include license, access and exclusivity fees, FTE payments, milestones, royalties, and optimization and screening fees. We report our collaborative

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research and development revenues under two categories, the first consisting of revenues from related parties who own more than 10% of our outstanding capital stock and the second from all other collaborators. Related party collaborative research and development revenues consisted of revenues from Shell in 2006 and 2007, and for the three months ended March 31, 2008.

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

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 and the United States and expect to receive additional grants from other governments in the future.

Cost of Product Revenue

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 payable to Maxygen 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 payable to Maxygen may fluctuate depending on the timing and type of consideration received from Shell in connection with our biofuels research 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 significantly in 2007 as compared to 2006, from 31 projects in 2006 to 46 in 2007. 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.

As more fully described in Note 2 of the accompanying financial statements, we do not track fully burdened research and development costs by project. Fully burdened research and development costs include all costs noted above as research and development expenses plus an allocation of certain overhead expenses that were incurred to support the research and development project, such as project accounting and administration. We do not believe that measurement of fully burdened research and development costs would provide meaningful data to our management that would affect operational decisions, so the cost of tracking such data would outweigh any potential benefit.

However, we do estimate, based on FTE efforts, the percentage of research and development efforts (as measured in hours incurred, which approximates costs) undertaken for projects funded by our collaborative partners and government grants and projects funded by us. To approximate research and development expenses by funded category, the number of hours expended in each category has been divided by the total number of hours expended on all categories of research and development with the resulting fractions then multiplied by the total cost of research and development effort, with the products then added to project-specific external costs. In the case where a collaborative partner is sharing the research and development costs, the expenses for that project are allocated proportionately between the collaborative projects funded by third parties and internal projects. We do not have any obligation to repay research and development funds provided by our collaborative partners under any circumstances, including

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in connection with failures to meet milestones or occurrences of negative research outcomes. We believe that presenting our research and development expenses in these categories will provide our investors with meaningful information on how our resources are being used.

The following table presents our approximate research and development expenses by funding category (in thousands):

	Years Ended December 31,			Three Months Ended March 31,	
	2005	2006	2007	2007	2008
				(unaudited)	
Collaborative research and development(1)	$ 5,610	$ 4,150	$ 10,920	$ 740	$ 1,749
Grants	88	25	384	32	4
Internal projects	7,141	13,082	24,340	3,991	8,102
Total research and development expenses	$ 12,839	$ 17,257	$ 35,644	$ 4,763	$ 9,855

(1) Research and development expenses related to collaborative projects funded by third parties are less than the reported revenues due to the amortization of non-refundable up-front payments.

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 expense and travel and relocation expenses.

Critical Accounting Policies and Estimates

Our consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles. 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.

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

We follow the revenue recognition criteria outlined in the Securities and Exchange Commission, or SEC, Staff Accounting Bulletin, or SAB, No. 104, *Revenue Recognition in Financial Statements*, and Emerging Issues Task Force, or EITF, Issue No. 00-21, *Revenue Arrangements with Multiple Deliverables*, or EITF 00-21. When evaluating multiple element arrangements, we consider whether the components of each arrangement represent separate units of accounting as defined in EITF 00-21. 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.

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Revenue is 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 payments received in connection with collaborative research and development agreements, including license fees and exclusivity fees, are deferred upon receipt and recognized as revenue over the periods specified in the agreement.

Revenue related to FTE services is recognized as research services are performed over the related performance periods for each contract. Under these agreements, we are required to perform research and development activities. The payments received under each agreement 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.

Revenues related to milestones that are determined to be substantive and at risk are generally recognized upon achievement of the incentive milestone event and when collectibility 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 included in a separate unit of accounting within the arrangement, or if the EITF 00-21 criteria to account for each element have not been met, to the single unit of accounting within the arrangement.

Revenues related to royalties based on product sales or cost savings of our customers are recorded as revenue as reported to us by the customer and when collectible. Royalties are generally reported in the quarter following the underlying sales or cost savings realized.

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 been met.

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.

Stock-Based Compensation

Prior to January 1, 2006, we accounted for stock-based employee compensation arrangements using the intrinsic value method prescribed by Accounting Principles Board Opinion No. 25, *Accounting for Stock Issued to Employees*, or APB 25, and related interpretations, and complied with the disclosure-only provisions of Statement of Financial Accounting Standard, or SFAS, No. 123, *Accounting for Stock-Based*

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Compensation, or SFAS 123, as amended by SFAS No. 148, *Accounting for Stock-Based Compensation, Transition and Disclosure, an amendment to SFAS Statement No. 123*, or SFAS 148. Under APB 25, 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. Accordingly, no stock-based employee compensation expense was recorded under APB 25 during 2005.

Effective January 1, 2006, we adopted SFAS No. 123(R), *Share-Based Payment*, or SFAS 123(R), which requires compensation expense related to share-based transactions, including the awarding of employee stock options, to be measured and recognized in the financial statements based on the estimated fair value of the awards granted. SFAS 123(R) revises SFAS 123, as amended, and supersedes APB 25. We adopted SFAS 123(R) 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 by SFAS 123. 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 in accordance with APB 25. All awards granted, modified or settled after the SFAS 123(R) adoption date have been accounted for using the measurement, recognition and attribution provisions of SFAS 123(R).

The adoption of SFAS 123(R) increased loss before provision for income taxes and net loss for the year ended December 31, 2006 by approximately $32,000 each, and increased net loss per share of common stock by $0.02. We are using the straight-line method to allocate stock-based compensation expense to reporting periods subsequent to the adoption of SFAS 123(R).

We account for stock options issued to non-employees in accordance with the provisions of SFAS 123(R) and EITF Issue No. 96-18, *Accounting for Equity Instruments That Are Issued to Other Than Employees for Acquiring, or in Conjunction with Selling, Goods or Services*, or EITF 96-18. In accordance with SFAS 123(R) and EITF 96-18, stock options issued to non-employees are accounted for at 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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In connection with determining the fair value of warrants to purchase our preferred stock under the provisions of the Financial Accounting Standards Board, or FASB, Staff Position FAS No. 150-5, *Issuer s Accounting under Statement No. 150 for Freestanding Warrants and Other Similar Instruments on Shares that are Redeemable*, or FSP 150-5, we reassessed the fair value of the common stock with respect to options granted between January 1, 2007 through July 17, 2007. Based upon the reassessed fair value of our common stock, we determined the intrinsic value of our stock options and the related stock compensation expense under SFAS 123(R), and determined that at each option grant date during this period, the fair value of our common stock was less than the relevant exercise prices of the stock options granted. The following table summarizes the options granted from January 1, 2007 through the date of this prospectus with their exercise prices, the reassessed fair values for purposes of SFAS 123(R) compensation expense, and the intrinsic value per share:

Date of Issuance	Number of Shares Subject to Options Granted	Exercise Price per Share	Reassessed Fair Value of Common Stock per Share	Intrinsic Value
January 26, 2007	1,719,800	$ 1.63	$ 1.41	$ (0.22)
February 26, 2007	5,000	1.63	1.41	(0.22)
April 16, 2007	40,000	1.63	1.46	(0.17)
April 19, 2007	415,600	1.63	1.46	(0.17)
June 19, 2007	652,100	1.63	1.30	(0.33)
July 17, 2007	133,000	1.63	1.27	(0.36)
August 28, 2007	1,263,175	4.47	4.47	
September 24, 2007	10,000	4.47	4.47	
October 25, 2007	864,550	4.57	4.57	
December 11, 2007	183,600	5.79	5.79	
January 29, 2008	1,095,550	7.00	6.25	(0.75)
May 22, 2008	250,000	7.90	7.90	
	6,632,375			

Significant Factors, Assumptions and Methodologies Used in Determining Fair Value

Under SFAS No. 123(R), we estimated the fair value of our stock option grants on or after January 1, 2006 using the Black-Scholes option-pricing model. The estimated expected term, as well as the estimated volatility rate, were calculated based on selected companies in similar markets, due to a lack of historical information regarding the volatility of our stock price and expected term of the options. We will continue to analyze the historical stock price volatility and expected term assumptions as more historical data for our common stock becomes available. 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 fair value of the stock options granted was based on the following assumptions:

	Years ended December 31,		Three months ended March 31,	
	2006	2007	2007	2008
Weighted average expected term (years)	6.1	6.0	N/A	6.0
Weighted average expected volatility	65.0%	48.0%	N/A	57.0%
Range of risk-free rates	4.2%	4.3%	N/A	3.1%
Expected dividend yields	0.0%	0.0%	N/A	0.0%

As a result of our Black-Scholes fair value calculations and the allocation of value to the vesting periods using the straight-line vesting attribu