Filed Pursuant to Rule 424(b)(5)
Registration No. 333-169689

PROSPECTUS SUPPLEMENT
(To Prospectus dated October 15, 2010)

$15,000,000
Common Stock

We have entered into an At Market Issuance Sales Agreement with McNicoll, Lewis & Vlak LLC, or MLV, relating to shares of our common stock offered by this prospectus supplement and the accompanying prospectus. In accordance with the terms of the sales agreement, we may offer and sell shares of our common stock, $0.001 par value per share, having an aggregate offering price of up to $15 million from time to time through MLV.

Our common stock is listed on The NASDAQ Capital Market under the symbol "THLD." The last reported sale price of our common stock on The NASDAQ Capital Market on October 28, 2010 was $1.36 per share.

Sales of our common stock, if any, under this prospectus supplement and the accompanying prospectus may be made in sales deemed to be "at-the-market" equity offerings as defined in Rule 415 promulgated under the Securities Act of 1933, as amended, including without limitation sales made directly on The NASDAQ Capital Market, on any other existing trading market for our common stock or to or through a market maker. MLV may also sell our common stock by any other method permitted by law, including but not limited to in privately negotiated transactions, with our consent. MLV will act as sales agent on a commercially reasonable efforts basis consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of NASDAQ. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

MLV will be entitled to compensation at a fixed commission rate of 3% of the gross sales price per share sold. In connection with the sale of the common stock on our behalf, MLV may be deemed to be an "underwriter" within the meaning of the Securities Act of 1933, as amended, and the compensation of MLV may be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contribution to MLV against certain liabilities, including liabilities under the Securities Act of 1933, as amended.

As of September 29, 2010, the aggregate market value of our outstanding common stock held by non-affiliates was approximately $33,842,220, based on 33,702,242 shares of outstanding common stock, of which approximately 8,446,854 shares were held by affiliates, and a price of $1.34 per share, which was the last reported sale price of our common stock on The NASDAQ Capital Market on September 29, 2010. As of the date of this prospectus supplement, we have not offered any securities pursuant to General Instruction I.B.6. of Form S-3 during the prior 12 calendar month period that ends on, and includes, the date of this prospectus supplement.

Before buying shares of our common stock, you should carefully consider the risk factors described in "Risk Factors" beginning on page S-4 of this prospectus supplement.

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

The date of this prospectus supplement is October 29, 2010.

TABLE OF CONTENTS

PROSPECTUS SUPPLEMENT

PROSPECTUS

ABOUT THIS PROSPECTUS SUPPLEMENT

Unless expressly stated otherwise, all references in this prospectus supplement and the accompanying prospectus to "the Company," "Threshold," "we," "us," "our," or similar references mean Threshold Pharmaceuticals, Inc. and its subsidiary on a consolidated basis.

This document is in two parts. The first part is this prospectus supplement, which describes the terms of this offering of our common stock and supplements information contained in the accompanying prospectus and the documents incorporated by reference into the accompanying prospectus. The second part is the accompanying prospectus, which gives more general information about us and the shares of common stock we may offer from time to time under our shelf registration statement. To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in the accompanying prospectus or any document incorporated by reference therein, on the other hand, the information in this prospectus supplement shall control; provided, however, that if any statement in one of these documents is inconsistent with a statement in another document having a later date — for example, a document incorporated by reference in the accompanying prospectus — the statement in the document having the later date modifies or supersedes the earlier statement in accordance with Rule 412 under the Securities Act of 1933, as amended, or the Securities Act.

We have not authorized any dealer, salesperson or other person to give any information or to make any representation other than those contained or incorporated by reference in this prospectus supplement, the accompanying prospectus and any related free writing prospectus. You should not rely upon any information or representation not contained or incorporated by reference in this prospectus supplement, the accompanying prospectus or any free writing prospectus that we may authorize to be provided to you. This prospectus supplement, the accompanying prospectus and any related free writing prospectus do not constitute an offer to sell or the solicitation of an offer to buy common stock, nor do this prospectus supplement, the accompanying prospectus and any related free writing prospectus constitute an offer to sell or the solicitation of an offer to buy common stock in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. You should not assume that the information contained in this prospectus supplement, the accompanying prospectus and any related free writing prospectus is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus supplement, the accompanying prospectus and any related free writing prospectus is delivered or common stock is sold on a later date.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference into the accompanying prospectus were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

FORWARD-LOOKING STATEMENTS

The statements in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, which we refer to as the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, which we refer to as the Exchange Act. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the

forward-looking statements. All statements, other than statements of historical facts, are forward-looking statements for purposes of these provisions, including without limitation any statements relating to:

- the progress and timing of our clinical programs, including estimated milestones and results;
- potential benefits and uses of our product candidates, including TH-302;
- estimates of future performance, capital requirements, research and development expenses and needs for and the form and impact of financing;
- uncertainties associated with obtaining and enforcing patents and other intellectual property rights;
- the costs and timing of obtaining drug supply for our pre-clinical and clinical activities; and
- the efficacy or potential side effect of our products.

In some cases, you can identify forward-looking statements by terms such as “anticipates,” “believes,” “could,” “estimates,” “expects,” “intends,” “may,” “plans,” “potential,” “predicts,” “projects,” “should,” “will,” “would” and similar expressions intended to identify forward-looking statements. Discussions containing these forward-looking statements may be found, among other places, in the “Business” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” sections incorporated by reference from our most recent Annual Report on Form 10-K, Quarterly Report on Form 10-Q, as well as any amendments thereto reflected in subsequent filings with the SEC, and in Current Reports on Form 8-K filed with the SEC. Forward-looking statements reflect our current views with respect to future events, are based on assumptions and are subject to risks, uncertainties and other important factors. We discuss many of these risks, uncertainties and other important factors in greater detail under the heading “Risk Factors” in this prospectus supplement. Given these risks, uncertainties and other important factors, you should not place undue reliance on these forward-looking statements. Also, these forward-looking statements represent our estimates and assumptions only as of the date such forward-looking statements are made. You should carefully read this prospectus supplement and the accompanying prospectus, together with the information incorporated by reference, completely and with the understanding that our actual future results may be materially different from what we expect. We can give no assurances that any of the events anticipated by the forward-looking statements will occur or, if any of them do, what impact they will have on our business, results of operations and financial condition.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information contained elsewhere or incorporated by reference in this prospectus supplement and the accompanying prospectus. The summary may not contain all the information that you should consider before investing in our common stock. you should read the entire prospectus supplement and the accompanying prospectus carefully, including "Risk Factors" contained in this prospectus supplement and the documents incorporated by reference in the accompanying prospectus, before making an investment decision. This prospectus supplement may add to, update or change information in the accompanying prospectus.

Overview

We are a biotechnology company focused on the discovery and development of drugs targeting the microenvironment of solid tumors as novel treatments for patients living with cancer. The microenvironment of solid tumors is characterized by, among other things, hypoxia or lack of oxygen, disordered blood vessel growth, and the upregulation of glucose transport. This hypoxic environment is known to be resistant to standard chemotherapy and radiation. It is thought to be responsible for the poor prognosis of many solid tumors and treating the hypoxic environment is currently believed to be a significant unmet medical need. Our product candidates are designed to selectively target the hypoxic microenvironment of tumors either by selective toxin activation in the case of our hypoxia activated prodrug (HAP) program, including TH-302, or potentially utilizing the consequences of increased uptake of glucose in cancer cells relative to most normal cells. Our product candidate glufosfamide, which we licensed to Eleison Pharmaceuticals, Inc. in October 2009, shares certain structural characteristics with glucose but acts instead as a chemotherapeutic toxin when taken up by a cell.

Other Information

We were incorporated in Delaware on October 17, 2001. Our principal executive offices are located at 1300 Seaport Boulevard, Suite 500 Redwood City, California, 94063. Our telephone number is (650) 474-8200. Our website is located at www.thresholdpharm.com. Information contained on, or that can be accessed through, our website is not part of this prospectus supplement.

THE OFFERING

Common stock offered by us pursuant to this prospectus supplement	Shares having an aggregate offering price of up to $15 million.
Manner of offering	"At-the-market" offering that may be made from time to time through our agent, McNicoll Lewis & Vlak LLC. See "Plan of Distribution" on page S-23.
Use of proceeds	We intend to use the net proceeds from this offering for working capital and other general corporate purposes. See "Use of Proceeds" on page S-21.
NASDAQ Capital Market symbol	THLD
Risk factors	This investment involves a high degree of risk. See "Risk Factors" beginning on page S-4 of this prospectus supplement as well as the other information included in or incorporated by reference in this prospectus supplement and the accompanying prospectus for a discussion of risks you should consider carefully before making an investment decision.

RISK FACTORS

Before making an investment decision, you should carefully consider the risks described in this prospectus supplement, together with all of the other information incorporated by reference into this prospectus supplement and the accompanying prospectus, including from our most recent Annual Report on Form 10-K and subsequent Quarterly Reports on Form 10-Q. The following risks are presented as of the date of this prospectus supplement and we expect that these will be updated from time to time in our periodic and current reports filed with the SEC, which will be incorporated herein by reference. Please refer to these subsequent reports for additional information relating to the risks associated with investing in our common stock.

Our business, financial condition or results of operations could be materially adversely affected by any of these risks. The trading price of our securities could decline due to any of these risks, and you may lose part or all of your investment. This prospectus supplement, the accompanying prospectus and the incorporated documents also contain forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks mentioned below. Forward-looking statements included in this prospectus supplement are based on information available to us on the date hereof, and all forward-looking statements in documents incorporated by reference are based on information available to us as of the date of such documents. We disclaim any intent to update any forward-looking statements.

RISKS RELATED TO OUR BUSINESS

Risks Related to Drug Discovery, Development and Commercialization

We are substantially dependent upon the success of TH-302. Clinical trials may not demonstrate efficacy or lead to regulatory approval and preliminary results may not be confirmed.

We will not be able to commercialize our drug candidates until we obtain FDA approval in the United States or approval by comparable regulatory agencies in Europe and other countries. To satisfy FDA or foreign regulatory approval standards for the commercial sale of our product candidates, we must demonstrate in adequate and controlled clinical trials that our product candidates are safe and effective. Success in preclinical testing and early clinical trials does not ensure that later clinical trials will be successful. Our initial results from clinical trials of TH-302 in a limited number of patients may not be confirmed by later analysis or subsequent larger clinical trials. A number of companies in the pharmaceutical industry, including us, have suffered significant setbacks in advanced clinical trials, even after obtaining promising results in earlier clinical trials.

Our product candidates must undergo rigorous clinical testing, the results of which are uncertain and could substantially delay or prevent us from bringing them to market.

Before we can obtain regulatory approval for a product candidate, we must undertake extensive clinical testing in humans to demonstrate safety and efficacy to the satisfaction of the FDA or other regulatory agencies. Clinical trials of new drug candidates sufficient to obtain regulatory marketing approval are expensive and take years to complete.

We cannot be certain of successfully completing clinical testing within the time frame we have planned, or at all. We may experience numerous unforeseen events during, or as a result of, the clinical trial process that could delay or prevent us from receiving regulatory approval or commercializing our product candidates, including the following:

- our clinical trials may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional clinical and/or preclinical testing or to abandon programs;
- the results obtained in earlier stage clinical testing may not be indicative of results in future clinical trials;

- clinical trial results may not meet the level of statistical significance required by the FDA or other regulatory agencies;
- enrollment in our clinical trials for our product candidates may be slower than we anticipate, resulting in significant delays;
- we, or regulators, may suspend or terminate our clinical trials if the participating patients are being exposed to unacceptable health risks; and
- the effects of our product candidates on patients may not be the desired effects or may include undesirable side effects or other characteristics that may delay or preclude regulatory approval or limit their commercial use, if approved.

Completion of clinical trials depends, among other things, on our ability to enroll a sufficient number of patients, which is a function of many factors, including:

- the therapeutic endpoints chosen for evaluation;
- the eligibility criteria defined in the protocol;
- the perceived benefit of the investigational drug under study;
- the size of the patient population required for analysis of the clinical trial's therapeutic endpoints;
- our ability to recruit clinical trial investigators and sites with the appropriate competencies and experience;
- our ability to obtain and maintain patient consents; and
- competition for patients by clinical trial programs for other treatments.

We may experience difficulties in enrolling patients in our clinical trials, which could increase the costs or affect the timing or outcome of these clinical trials. This is particularly true with respect to diseases with relatively small patient populations.

Pre-clinical studies of our product candidates may not predict the results of their human clinical trials.

Pre-clinical studies, including studies of our product candidates in animal models of disease, may not accurately predict the result of human clinical trials of those product candidates. In particular, promising animal studies suggesting the efficacy of TH-302 for the treatment of different types of cancer may not accurately predict the ability of TH-302 to treat cancer effectively in humans. TH-302 may be found not to be efficacious in treating cancer, alone or in combination with other agents, when studied in human clinical trials.

We are subject to significant regulatory approval requirements, which could delay, prevent or limit our ability to market our product candidates.

Our research and development activities, preclinical studies, clinical trials and the anticipated manufacturing and marketing of our product candidates are subject to extensive regulation by the FDA and other regulatory agencies in the United States and by comparable authorities in Europe and elsewhere. We require the approval of the relevant regulatory authorities before we may commence commercial sales of our product candidates in a given market. The regulatory approval process is expensive and time-consuming, and the timing of receipt of regulatory approval is difficult to predict. Our product candidates could require a significantly longer time to gain regulatory approval than expected, or may never gain approval. We cannot be certain that, even after expending substantial time and financial resources, we will obtain regulatory approval for any of our product candidates. A delay or denial of regulatory approval could delay or prevent our ability to generate product revenues and to achieve profitability.

Changes in regulatory approval policies during the development period of any of our product candidates, changes in, or the enactment of, additional regulations or statutes, or changes in regulatory review practices for a submitted product application may cause a delay in obtaining approval or result in the rejection of an application for regulatory approval.

Regulatory approval, if obtained, may be made subject to limitations on the indicated uses for which we may market a product. These limitations could adversely affect our potential product revenues. Regulatory approval may also require costly post-marketing follow-up studies. In addition, the labeling, packaging, adverse event reporting, storage, advertising, promotion and record-keeping related to the product will be subject to extensive ongoing regulatory requirements. Furthermore, for any marketed product, its manufacturer and its manufacturing facilities will be subject to continual review and periodic inspections by the FDA or other regulatory authorities. Failure to comply with applicable regulatory requirements may, among other things, result in fines, suspensions of regulatory approvals, product recalls, product seizures, operating restrictions and criminal prosecution.

Our product candidates are based on targeting the microenvironment of solid tumors, which currently is an unproven approach to therapeutic intervention.

Our product candidates are designed to target the microenvironment of solid tumors by, in the case of TH-302, harnessing hypoxia for selective toxin activation or by potentially exploiting the increased uptake of glucose in cancer cells relative to most normal cells. Our product candidate 2DG shares certain structural characteristics with glucose but acts instead as poison when taken up by a cancer cell. We have not, nor to our knowledge has any other company, received regulatory approval for a drug based on either of these approaches. We cannot be certain that our approaches will lead to the development of approvable or marketable drugs.

In addition, the FDA or other regulatory agencies may lack experience in evaluating the safety and efficacy of drugs based on these targeting approaches, which could lengthen the regulatory review process, increase our development costs and delay or prevent commercialization of our product candidates.

Our product candidates may have undesirable side effects that prevent or delay their regulatory approval or limit their use if approved.

Certain anti-tumor drugs being developed by us, such as TH-302 and 2DG, are expected to have undesirable side effects. For example, in clinical trials of TH-302, some patients have exhibited skin and/or mucosal toxicities that have in some cases caused patients to stop or delay therapy. The extent, severity and clinical significance of these or other undesirable side effects may not be apparent initially and may be discovered or become more significant during drug development or even post-approval. These expected side effects or other side effects identified in the course of our clinical trials or that may otherwise be associated with our product candidates may outweigh the benefits of our product candidates. Side effects may prevent or delay regulatory approval or limit market acceptance if our products are approved.

Delays in clinical testing could result in increased costs to us and delay our ability to obtain regulatory approval and commercialize our product candidates.

Significant delays in clinical testing could materially impact our product development costs and delay regulatory approval of our product candidates. We do not know whether planned clinical trials will need to be redesigned or will be completed on schedule, if at all. Clinical trials can be delayed for a variety of reasons, including adverse safety events experienced during our clinical trials and delays in:

- obtaining regulatory approval to commence a clinical trial;
- obtaining clinical materials;
- reaching agreement on acceptable clinical trial agreement terms with prospective sites;

- obtaining institutional review board approval to conduct a clinical trial at a prospective site; and
- recruiting patients to participate in a clinical trial.

Orphan drug exclusivity affords us limited protection, and if another party obtains orphan drug exclusivity for the drugs and indications we are targeting, we may be precluded from commercializing our product candidates in those indications.

For those drugs that meet the eligible requirements, we intend to seek orphan drug designation for the cancer indications that our drug candidates are intended to treat. Under the Orphan Drug Act, the FDA may grant orphan drug designation to drugs intended to treat a rare disease or condition, which is defined by the FDA as a disease or condition that affects fewer than 200,000 individuals in the United States. The company that obtains the first FDA approval for a designated orphan drug indication receives marketing exclusivity for use of that drug for that indication for a period of seven years. Orphan drug exclusive marketing rights may be lost if the FDA later determines that the request for designation was materially defective, or if the manufacturer is unable to assure sufficient quantity of the drug. Orphan drug designation does not shorten the development or regulatory review time of a drug.

Orphan drug exclusivity may not prevent other market entrants. A different drug, or, under limited circumstances, the same drug may be approved by the FDA for the same orphan indication. The limited circumstances include an inability to supply the drug in sufficient quantities or where a new formulation of the drug has shown superior safety or efficacy. As a result, if our product is approved and receives orphan drug status, the FDA can still approve other drugs for use in treating the same indication covered by our product, which could create a more competitive market for us.

Moreover, due to the uncertainties associated with developing pharmaceutical products, we may not be the first to obtain marketing approval for any orphan drug indication. Even if we obtain orphan drug designation, if a competitor obtains regulatory approval for TH-302 or 2DG for the same indication we are targeting before we do, we would be blocked from obtaining approval for that indication for seven years, unless our product is a new formulation of the drug that has shown superior safety or efficacy, or the competitor is unable to supply sufficient quantities.

Even if we obtain regulatory approval, our marketed drugs will be subject to ongoing regulatory review. If we fail to comply with continuing United States and foreign regulations, we could lose our approvals to market drugs and our business would be seriously harmed.

Following initial regulatory approval of any drugs we may develop, we will be subject to continuing regulatory review, including review of adverse drug experiences and clinical results that are reported after our drug products become commercially available. This would include results from any post-marketing tests or vigilance required as a condition of approval. The manufacturer and manufacturing facilities we use to make any of our drug candidates will also be subject to periodic review and inspection by the FDA. If a previously unknown problem or problems with a product or a manufacturing and laboratory facility used by us is discovered, the FDA or foreign regulatory agency may impose restrictions on that product or on the manufacturing facility, including requiring us to withdraw the product from the market. Any changes to an approved product, including the way it is manufactured or promoted, often require FDA approval before the product, as modified, can be marketed. We and our contract manufacturers will be subject to ongoing FDA requirements for submission of safety and other post-market information. If we and our contract manufacturers fail to comply with applicable regulatory requirements, a regulatory agency may:

- issue warning letters;
- impose civil or criminal penalties;
- suspend or withdraw our regulatory approval;

- suspend or terminate any of our ongoing clinical trials;
- refuse to approve pending applications or supplements to approved applications filed by us;
- impose restrictions on our operations;
- close the facilities of our contract manufacturers; or
- seize or detain products or require a product recall.

The FDA and foreign regulatory authorities may impose significant restrictions on the indicated uses and marketing of pharmaceutical products.

FDA rules for pharmaceutical promotion require that a company not promote an unapproved drug or an approved drug for an unapproved use. In addition to FDA requirements, regulatory and law enforcement agencies, such as the United States Department of Health and Human Services' Office of Inspector General and the United States Department of Justice, monitor and investigate pharmaceutical sales, marketing and other practices. For example, sales, marketing and scientific/educational grant programs must comply with the Medicare-Medicaid Anti-Fraud and Abuse Act, as amended, the False Claims Act, as amended, and similar state laws. In recent years, actions by companies' sales forces and marketing departments have been scrutinized intensely to ensure, among other things, that actions by such groups do not qualify as "kickbacks" to healthcare professionals. A "kickback" refers to the provision of any item of value to a healthcare professional or other person in exchange for purchasing, recommending, or referring an individual for an item or service reimbursable by a federal healthcare program. These kickbacks increase the expenses of the federal healthcare program and may result in civil penalties, criminal prosecutions, and exclusion from participation in government programs, any of which would adversely affect our financial condition and business operations. In addition, even if we are not determined to have violated these laws, government investigations into these issues typically require the expenditure of significant resources and generate negative publicity, which would also harm our financial condition. Comparable laws also exist at the state level.

We are, and in the future may be, subject to new federal and state requirements to submit information on our open and completed clinical trials to public registries and databases.

In 1997, a public registry of open clinical trials involving drugs intended to treat serious or life-threatening diseases or conditions was established under the Food and Drug Administration Modernization Act, or FDMA, in order to promote public awareness of and access to these clinical trials. Under FDMA, pharmaceutical manufacturers and other clinical trial sponsors are required to post the general purpose of these clinical trials, as well as the eligibility criteria, location and contact information of the clinical trials. Since the establishment of this registry, there has been significant public debate focused on broadening the types of clinical trials included in this or other registries, as well as providing for public access to clinical trial results. A voluntary coalition of medical journal editors has adopted a resolution to publish results only from those clinical trials that have been registered with a no-cost, publicly accessible database, such as http://www.clinicaltrials.gov. The Pharmaceuticals and Research Manufacturers of America has also issued voluntary principles for its members to make results from certain clinical trials publicly available and has established a website for this purpose. Other groups have adopted or are considering similar proposals for clinical trial registration and the posting of clinical trial results. The state of Maine has enacted legislation, with penalty provisions, requiring the disclosure of results from clinical trials involving drugs marketed in the state, and similar legislation has been introduced in other states. Federal legislation was introduced in the fall of 2004 to expand http://www.clinicaltrials.gov and to require the inclusion of clinical trial results in this registry. In some states, such as New York, prosecutors have alleged that a lack of disclosure of clinical trial information constitutes fraud, and these allegations have resulted in settlements with pharmaceutical companies that include agreements to post clinical trial results. Our failure to comply with any clinical trial posting requirements could expose us to negative publicity, fines, and other penalties, all of which could materially harm our business.

Risks Related to Our Financial Performance and Operations

We have incurred losses since our inception and anticipate that we will continue to incur significant losses for the foreseeable future, and our future profitability is uncertain.

We are a development stage company with a limited operating history and no current source of revenue from the sale of our product candidates. We have incurred losses in each year since our inception in 2001, and we expect to incur losses for the foreseeable future. We have devoted, and will continue to devote for the foreseeable future, substantially all of our resources to research and development of our product candidates. For the six months ended June 30, 2010, we had a net loss of $6.2 million and our cumulative net loss since our inception through June 30, 2010 was $214.0 million. Clinical trials are costly. We do not expect to generate any revenue from the sale of our product candidates in the near term, and we expect to continue to have significant losses for the foreseeable future.

To attain profitability, we will need to develop products successfully and market and sell them effectively. We cannot predict when we will become profitable, if at all. We have never generated revenue from the sale of our product candidates, and there is no guarantee that we will be able to do so in the future. If we fail to become profitable, or if we are unable to fund our continuing losses, we would be unable to continue our research and development programs.

We are likely to require substantial additional funding and may be unable to raise capital when needed, which could force us to delay, reduce or eliminate our drug discovery, product development and commercialization activities.

Developing drugs, conducting clinical trials, and commercializing products is expensive. Our future funding requirements will depend on many factors, including:

- the terms and timing of any collaborative, licensing, acquisition or other arrangements that we may establish;
- the progress and cost of our clinical trials and other research and development activities;
- the costs and timing of obtaining regulatory approvals;
- the costs of filing, prosecuting, defending and enforcing any patent applications, claims, patents and other intellectual property rights;
- the cost and timing of securing manufacturing capabilities for our clinical product candidates and commercial products, if any; and
- the costs of lawsuits involving us or our product candidates.

We believe that our existing cash, cash equivalents and marketable securities as of June 30, 2010 will be sufficient to fund our projected operating requirements through the second quarter of 2011, including prosecuting our current clinical trials, conducting research and discovery efforts towards additional product candidates, working capital and general corporate purposes. We expect that we will need to raise additional capital to complete any new clinical trials that we started in 2010. Additional funds will also be required to in-license or otherwise acquire and develop additional products or programs. We expect to seek funds through arrangements with collaborators or others that may require us to relinquish rights to certain products candidates that we might otherwise seek to develop or commercialize independently. We cannot be certain that we will be able to enter into any such arrangements on reasonable terms, if at all.

We expect to need to raise additional capital or incur indebtedness to continue to fund our future operations. We may seek to raise capital through a variety of sources, including:

- the public equity market;
- private equity financing;

- collaborative arrangements;
- licensing arrangements; and/or
- public or private debt.

Our ability to raise additional funds will depend, in part on our clinical and regulatory events, our ability to identify promising in-licensing opportunities, enter into a collaboration or license agreement with others and factors related to financial, economic and market conditions, many of which are beyond our control. We cannot be certain that sufficient funds will be available to us when required or on satisfactory terms, if at all. If adequate funds are not available, we may be required to significantly reduce or refocus our operations or to obtain funds through arrangements that may require us to relinquish rights to certain of our products, technologies or potential markets, any of which could delay or require that we curtail or eliminate some or all of our development programs or otherwise have a material adverse effect on our business, financial condition and results of operations. In addition, the Company may have to delay, reduce the scope of or eliminate some of its research and development, which could delay the time to market for any of its product candidates, if adequate funds are not available.

If we are unable to secure additional financing on a timely basis or on terms favorable to us, we may be required to cease or reduce certain research and development projects, to sell some or all of our technology or assets or to merge all or a portion of our business with another entity. Insufficient funds may require us to delay, scale back, or eliminate some or all of our activities, and if we are unable to obtain additional funding, there is uncertainty regarding our continued existence.

Our success depends in part on retaining and motivating key personnel and, if we fail to do so, it may be more difficult for us to execute our business strategy. As a small organization we are dependent on key employees and may need to hire additional personnel to execute our business strategy successfully.

Our success depends on our continued ability to attract, retain and motivate highly qualified management, clinical and scientific personnel and on our ability to develop and maintain important relationships with leading academic institutions, clinicians and scientists. We are highly dependent upon our senior management and scientific staff, particularly our Chief Executive Officer, Dr. Harold E. Selick, President and Chief Medical Officer, Dr. John M. Curd and Senior Vice President of Discovery Research, Dr. Mark G. Matteucci. We do not have employment agreements with Drs. Selick, Curd or Matteucci. The loss of the services of Drs. Selick, Curd or Matteucci or one or more of our other key employees could delay or have an impact on the successful completion of our clinical trials or the development of additional product candidates.

As of June 30, 2010, we had 37 employees. Our success will depend on our ability to retain and motivate remaining personnel and hire additional qualified personnel when required. Competition for qualified personnel in the biotechnology field is intense. We face competition for personnel from other biotechnology and pharmaceutical companies, universities, public and private research institutions and other organizations. We may not be able to attract and retain qualified personnel on acceptable terms given the competition for such personnel. If we are unsuccessful in our retention, motivation and recruitment efforts, we may be unable to execute our business strategy.

Our facilities in California are located near an earthquake fault, and an earthquake or other natural disaster or resource shortage could disrupt our operations.

Important documents and records, such as hard copies of our laboratory books and records for our product candidates, are located in our corporate headquarters at a single location in Redwood City, California, near active earthquake zones. In the event of a natural disaster, such as an earthquake, drought or flood, or localized extended outages of critical utilities or transportation systems, we do not have a formal business continuity or disaster recovery plan, and could therefore experience a significant business interruption. In addition, California

from time to time has experienced shortages of water, electric power and natural gas. Future shortages and conservation measures could disrupt our operations and could result in additional expense. Although we maintain business interruption insurance coverage, the policy specifically excludes coverage for earthquake and flood.

Risks Related to Our Dependence on Third Parties

We rely on third parties to manufacture TH-302. If these parties do not manufacture the active pharmaceutical ingredients or finished drug products of satisfactory quality, in a timely manner, in sufficient quantities or at an acceptable cost, clinical development and commercialization of our product candidates could be delayed.

We do not currently own or operate manufacturing facilities; consequently, we rely and expect to continue to rely on third parties for the production of clinical and commercial quantities of our product candidates. We have not yet entered into any long term manufacturing or supply agreement for any of our product candidates. Our current and anticipated future dependence upon others for the manufacture of our product candidates may adversely affect our ability to develop and commercialize any product candidates on a timely and competitive basis.

Our contract manufacturers have produced sufficient TH-302 API and drug product to meet the clinical supply demands of our ongoing clinical trials. Additional clinical trial material continues to be manufactured as required. We have ordered additional API and drug product, however we will need to obtain additional supplies of TH-302 API and drug product to complete any other additional trials. The need for additional supplies may require manufacturing process improvements in TH-302 API and drug product. If we are not successful in procuring sufficient TH-302 clinical trial material, we may experience a significant delay in our TH-302 clinical program.

We will need to enter into additional agreements for additional supplies of each of our product candidates to complete clinical development and/or commercialize them. We cannot be certain that we can do so on favorable terms, if at all. The products will need to satisfy all cGMP manufacturing requirements, including passing specifications. Our inability to satisfy these requirements could delay our clinical programs.

If any of our product candidates is approved by the FDA or other regulatory agencies for commercial sale, we will need to have it manufactured in commercial quantities. We may not be able to increase the manufacturing capacity for any of our product candidates in a timely or economic manner successfully or at all. Significant scale-up of manufacturing may require additional validation studies, which the FDA and other regulatory agencies must review and approve. If we are unable to successfully increase the manufacturing capacity for a product candidate, the regulatory approval or commercial launch of that product candidate may be delayed, or there may be a shortage of supply which could limit our sales.

In addition, if the facility or the equipment in the facility that produces our product candidates is significantly damaged or destroyed, or if the facility is located in another country and trade or commerce with such country is interrupted, we may be unable to replace the manufacturing capacity quickly or inexpensively. The inability to obtain manufacturing agreements, the damage or destruction of a facility on which we rely for manufacturing or any other delays in obtaining supply would delay or prevent us from completing our clinical trials and commercializing our current product candidates.

We have no control over our manufacturers' and suppliers' compliance with manufacturing regulations, and their failure to comply could result in an interruption in the supply of our product candidates.

The facilities used by our contract manufacturers must undergo an inspection by the FDA for compliance with current good manufacturing practice, or cGMP regulations, before the respective product candidates can be approved. In the event these facilities do not receive a satisfactory cGMP inspection for the manufacture of our product candidates, we may need to fund additional modifications to our manufacturing process, conduct

additional validation studies, or find alternative manufacturing facilities, any of which would result in significant cost to us as well as a delay of up to several years in obtaining approval for such product candidate. In addition, our contract manufacturers, and any alternative contract manufacturer we may utilize, will be subject to ongoing periodic inspection by the FDA and corresponding state and foreign agencies for compliance with cGMP regulations, similar foreign regulations and other regulatory standards. We do not have control over our contract manufacturers' compliance with these regulations and standards. Any failure by our third-party manufacturers or suppliers to comply with applicable regulations could result in sanctions being imposed on them (including fines, injunctions and civil penalties), failure of regulatory authorities to grant marketing approval of our product candidates, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of product candidates or products, operating restrictions and criminal prosecution.

We rely on third parties to conduct some of our clinical trials, and their failure to perform their obligations in a timely or competent manner may delay development and commercialization of our product candidates.

We may use clinical research organizations to assist in conduct of our clinical trials. There are numerous alternative sources to provide these services. However, we may face delays outside of our control if these parties do not perform their obligations in a timely or competent fashion or if we are forced to change service providers. This risk is heightened for clinical trials conducted outside of the United States, where it may be more difficult to ensure that clinical trials are conducted in compliance with FDA requirements. Any third-party that we hire to conduct clinical trials may also provide services to our competitors, which could compromise the performance of their obligations to us. If we experience significant delays in the progress of our clinical trials and in our plans to file NDAs, the commercial prospects for product candidates could be harmed and our ability to generate product revenue would be delayed or prevented.

We are dependent on Eleison to develop and commercialize glufosfamide

We are dependent upon Eleison Pharmaceuticals, Inc., to whom we exclusively licensed glufosfamide in October 2009, to develop and commercialize glufosfamide. Any profit sharing or other payments to us under the Eleison license depend almost entirely upon the efforts of Eleison, which may not be able to raise sufficient funds to commence clinical development activities with glufosfamide. Even if Eleison is successful at raising initial funding, it may not be successful in developing and commercializing glufosfamide or raising sufficient funds for development and commercialization. We may also be asked to provide technical assistance related to the development of glufosfamide, which may divert our resources from other activities. If the Eleison license terminates in such a way that glufosfamide reverts to us and we seek alternative arrangements with one or more other parties to develop and commercialize glufosfamide, we may not be able to enter into such an agreement with another suitable third party or third parties on acceptable terms or at all.

Risks Related to Our Intellectual Property

Hypoxia activated prodrug technology is not a platform technology broadly protected by patents, and others may be able to develop competitive drugs using this approach.

Although we have one issued patent that covers a category of hypoxia-activated prodrugs, including TH-302, we have no issued patents or pending patent applications that would prevent others from taking advantage of hypoxia activated prodrug technology generally to discover and develop new therapies for cancer or other diseases. Consequently, our competitors may seek to discover and develop potential therapeutics that operate by mechanisms of action that are the same or similar to the mechanisms of action of our hypoxia activated prodrug product candidates.

2DG is a known compound that is not protected by patents on the composition of the molecule.

2DG is a known compound that is no longer eligible for patent protection on the composition of the molecule. A patent of this nature, known as a compound per se patent, excludes others from making, using or

selling the patented compound, regardless of how or for what purpose the compound is formulated or intended to be used. Consequently, this compound and certain of its uses are in the public domain.

We have an issued U.S. patent for the use of orally administered 2DG for the treatment of cancer at certain doses and administration schedules, and we have in-licensed three issued U.S. patents that cover the treatment of certain cancers with 2DG in combination with other specific anti-cancer agents.

Others may develop and market 2DG for the treatment of cancer, however, if they develop treatments using dosing and administration schedules or combination therapies outside the scope of our patents or in contravention of our patent rights.

Targeting the increased uptake of glucose and the increased reliance on glycolysis as an energy source in cancer cells is not protected by patents, and others may be able to develop competitive drugs using this approach.

We have not issued patents or pending patent applications that would prevent others from taking advantage of targeting the increased uptake of glucose and the increased reliance of glycolysis as an energy source in solid tumors to discover and develop new therapies for cancer or other diseases. Consequently, our competitors may seek to discover and develop potential therapeutics that operate by mechanisms of action that are the same or similar to the mechanisms of action of our product candidates.

We are dependent on patents and proprietary technology, both our own and those licensed from others. If we or our licensors fail to adequately protect this intellectual property or if we otherwise do not have exclusivity for the marketing of our products, our ability to commercialize products could suffer.

Our commercial success will depend in part on our ability and the ability of our licensors to obtain and maintain patent protection sufficient to prevent others from marketing our product candidates, as well as to defend and enforce these patents against infringement and to operate without infringing the proprietary rights of others. We will only be able to protect our product candidates from unauthorized use by third parties to the extent that valid and enforceable patents cover our product candidates or their manufacture or use if they are effectively protected by trade secrets. If our patent applications do not result in issued patents, or if our patents, or those patents we have licensed, are found to be invalid, we will lose the ability to exclude others from making, using or selling the inventions claimed therein. We have a limited number of patents and pending patent applications.

The patent positions of pharmaceutical and biotechnology companies can be highly uncertain and involve complex legal and factual questions. No consistent policy regarding the breadth of claims allowed in biotechnology patents has emerged to date in the United States. The laws of many countries may not protect intellectual property rights to the same extent as United States laws, and those countries may lack adequate rules and procedures for defending our intellectual property rights. Changes in either patent laws or in interpretations of patent laws in the United States and other countries may diminish the value of our intellectual property. We do not know whether any of our patent applications will result in the issuance of any patents and we cannot predict the breadth of claims that may be allowed in our patent applications or in the patent applications we license from others.

The degree of future protection for our proprietary rights is uncertain because legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep our competitive advantage. For example:

- we or our licensors might not have been the first to make the inventions covered by each of our or our licensors' pending patent applications and issued patents, and we may have to participate in expensive and protracted interference proceedings to determine priority of invention;
- we or our licensors might not have been the first to file patent applications for these inventions;

- others may independently develop similar or alternative product candidates or duplicate any of our or our licensors' product candidates;
- our or our licensors' pending patent applications may not result in issued patents;
- our or our licensors' issued patents may not provide a basis for commercially viable products or may not provide us with any competitive advantages or may be challenged by third parties;
- others may design around our or our licensors' patent claims to produce competitive products that fall outside the scope of our or our licensors' patents;
- we may not develop or in-license additional patentable proprietary technologies related to our product candidates; or
- the patents of others may prevent us from marketing one or more of our product candidates for one or more indications that may be valuable to our business strategy.

Moreover, an issued patent does not guarantee us the right to practice the patented technology or commercialize the patented product. Third parties may have blocking patents that could be used to prevent us from commercializing our patented products and practicing our patented technology. Our issued patents and those that may be issued in the future may be challenged, invalidated or circumvented, which could limit our ability to prevent competitors from marketing the same or related product candidates or could limit the length of the term of patent protection of our product candidates. In addition, the rights granted under any issued patents may not provide us with proprietary protection or competitive advantages against competitors with similar technology. Furthermore, our competitors may independently develop similar technologies. Moreover, because of the extensive time required for development, testing and regulatory review of a potential product, it is possible that, before any of our product candidates can be commercialized, any related patent may expire or remain in force for only a short period following commercialization, thereby reducing any advantage of the patent. Patent term extensions may not be available for these patents.

We rely on trade secrets and other forms of non-patent intellectual property protection. If we are unable to protect our trade secrets, other companies may be able to compete more effectively against us.

We rely on trade secrets to protect certain aspects of our technology, especially where we do not believe patent protection is appropriate or obtainable. However, trade secrets are difficult to protect, especially in the pharmaceutical industry, where much of the information about a product must be made public during the regulatory approval process. Although we use reasonable efforts to protect our trade secrets, our employees, consultants, contractors, outside scientific collaborators and other advisors may unintentionally or willfully disclose our information to competitors. Enforcing a claim that a third party illegally obtained and is using our trade secret information is expensive and time consuming, and the outcome is unpredictable. In addition, courts outside the United States may be less willing to or may not protect trade secrets. Moreover, our competitors may independently develop equivalent knowledge, methods and know-how.

If we are sued for infringing intellectual property rights of third parties or if we are forced to engage in an interference proceeding, it will be costly and time consuming, and an unfavorable outcome in that litigation or interference would have a material adverse effect on our business.

Our ability to commercialize our product candidates depends on our ability to develop, manufacture, market and sell our product candidates without infringing the proprietary rights of third parties. Numerous United States and foreign issued patents and pending patent applications, which are owned by third parties, exist in the general field of cancer therapies or in fields that otherwise may relate to our product candidates. We are also aware of a patent that claims certain agents, including 2DG, to inhibit the import of glucose-6-phosphate into the endoplasmic reticulum of a cell. We do not know whether administration of 2DG for our intended uses inhibits such import. If it does, we would be required to license the patent or risk that a claim of infringement could be

made. If we are shown to infringe, we could be enjoined from use or sale of the claimed invention if we are unable to prove that the patent is invalid. In addition, because patent applications can take many years to issue, there may be currently pending applications, unknown to us, which may later result in issued patents that our product candidates or any other compound that we may develop, may infringe, or which may trigger an interference proceeding regarding one of our owned or licensed patents or applications. There could also be existing patents of which we are not aware that our product candidates may inadvertently infringe or which may become involved in an interference proceeding.

The biotechnology and biopharmaceutical industries are characterized by the existence of a large number of patents and frequent litigation based on allegations of patent infringement. For so long as our product candidates are in clinical trials, we believe our clinical activities fall within the scope of the exemptions provided by 35 U.S.C. Section 271(e) in the United States, which exempts from patent infringement liability activities reasonably related to the development and submission of information to the FDA. As our clinical investigational drugs progress toward commercialization, the possibility of a patent infringement claim against us increases. While we attempt to ensure that our active clinical investigational drugs and the methods we employ to manufacture them, as well as the methods for their use we intend to promote, do not infringe other parties' patents and other proprietary rights, we cannot be certain they do not, and competitors or other parties may assert that we infringe their proprietary rights in any event.

We may be exposed to future litigation based on claims that our product candidates, or the methods we employ to manufacture them, or the uses for which we intend to promote them, infringe the intellectual property rights of others. Our ability to manufacture and commercialize our product candidates may depend on our ability to demonstrate that the manufacturing processes we employ and the use of our product candidates do not infringe third-party patents. If third-party patents were found to cover our product candidates or their use or manufacture, we could be required to pay damages or be enjoined and therefore unable to commercialize our product candidates, unless we obtained a license. A license may not be available to us on acceptable terms, if at all.

Risks Related To Our Industry

If our competitors are able to develop and market products that are more effective, safer or more affordable than ours, or obtain marketing approval before we do, our commercial opportunities may be limited.

Competition in the biotechnology and pharmaceutical industries is intense and continues to increase, particularly in the area of cancer treatment. Most major pharmaceutical companies and many biotechnology companies are aggressively pursuing oncology development programs, including traditional therapies and therapies with novel mechanisms of action. Our cancer product candidates face competition from established biotechnology and pharmaceutical companies, including sanofi-aventis, AstraZeneca PLC, Genentech, Inc., Bayer Corporation, Eli Lilly and Company and Pfizer, Inc. and from generic pharmaceutical manufacturers. In particular, our drug candidates for pancreatic cancer will compete with Gemzar, marketed by Eli Lilly and Company, doxorubicin, cisplatin, paclitaxel, ifosfamide, and 5-flurouracil, or 5-FU, a generic product which is sold by many manufacturers. In addition, several drugs marketed for different indications, such as Camptosar®, marketed by Pfizer, Inc., Erbitux®, marketed by Imclone Systems Inc. and Bristol-Myers Squibb Company, Taxotere®, marketed by sanofi-aventis, DTIC-Dome®, marketed by Bayer Pharmaceuticals Corporation, Xeloda®, marketed by Hoffmann-LaRoche, Inc., Avastin®, marketed by Genentech, Inc., Nexavar®, marketed by Onyx Pharmaceuticals, Inc. and Bayer AG, and Alimta®, marketed by Eli Lilly and Company, are under investigation or have completed investigation as combination therapies or monotherapy for pancreatic, prostate, ovarian, non small cell lung and small cell lung cancers, melanoma and soft tissue sarcoma. Additionally OSI Pharmaceuticals, Inc. and Genentech, Inc. market Tarceva® as a combination therapy with gemcitabine for the first-line treatment of pancreatic cancer. In addition, Proacta Inc. has a compound under clinical investigation that targets the hypoxic zones of tumors, as our TH-302 clinical product candidate is intended to do. Novacea has conducted studies on AQ4N and sanofi-aventis recently completed a Phase 3 clinical trial on Tirapazamine, a hypoxically activated prodrug, and while Novacea has stopped current clinical development of AQ4N and

sanofi-aventis has released rights to the compound to the innovator SRI, another company may pursue further clinical development of either compound. Abraxis Bioscience Inc. is conducting clinical trials of Abraxene® as a combination therapy for first-line treatment of pancreatic cancer. ZIOPHARM Oncology Inc. is conducting clinical trials of a compound as a combination therapy for first-line treatment of advanced soft tissue sarcoma.

We also face potential competition from academic institutions, government agencies and private and public research institutions engaged in the discovery and development of drugs and therapies. Many of our competitors have significantly greater financial resources and expertise in research and development, preclinical testing, conducting clinical trials, obtaining regulatory approvals, manufacturing, sales and marketing than we do. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established pharmaceutical companies.

Our competitors may succeed in developing products that are more effective, have fewer side effects and are safer or more affordable than our product candidates, which would render our product candidates less competitive or noncompetitive. These competitors also compete with us to recruit and retain qualified scientific and management personnel, establish clinical trial sites and patient registration for clinical trials, as well as to acquire technologies and technology licenses complementary to our programs or advantageous to our business. Moreover, competitors that are able to achieve patent protection obtain regulatory approvals and commence commercial sales of their products before we do, and competitors that have already done so, may enjoy a significant competitive advantage.

There is a substantial risk of product liability claims in our business. If we do not obtain sufficient liability insurance, a product liability claim could result in substantial liabilities.

Our business exposes us to significant potential product liability risks that are inherent in the development, manufacturing and marketing of human therapeutic products. Regardless of merit or eventual outcome, product liability claims may result in:

- delay or failure to complete our clinical trials;
- withdrawal of clinical trial participants;
- decreased demand for our product candidates;
- injury to our reputation;
- litigation costs;
- substantial monetary awards against us; and
- diversion of management or other resources from key aspects of our operations.

If we succeed in marketing products, product liability claims could result in an FDA investigation of the safety or efficacy of our products, our manufacturing processes and facilities or our marketing programs. An FDA investigation could also potentially lead to a recall of our products or more serious enforcement actions, or limitations on the indications, for which they may be used, or suspension or withdrawal of approval.

We have product liability insurance that covers our clinical trials up to a $5 million annual aggregate limit. We intend to expand our insurance coverage to include the sale of commercial products if marketing approval is obtained for our product candidates or any other compound that we may develop. However, insurance coverage is expensive and we may not be able to maintain insurance coverage at a reasonable cost or at all, and the insurance coverage that we obtain may not be adequate to cover potential claims or losses.

Even if we receive regulatory approval to market our product candidates, the market may not be receptive to our product candidates upon their commercial introduction, which would negatively affect our ability to achieve profitability.

Our product candidates may not gain market acceptance among physicians, patients, healthcare payors and the medical community. The degree of market acceptance of any approved products will depend on a number of factors, including:

- the effectiveness of the product;
- the prevalence and severity of any side effects;
- potential advantages or disadvantages over alternative treatments;
- relative convenience and ease of administration;
- the strength of marketing and distribution support;
- the price of the product, both in absolute terms and relative to alternative treatments; and
- sufficient third-party coverage or reimbursement.

If our product candidates receive regulatory approval but do not achieve an adequate level of acceptance by physicians, healthcare payors and patients, we may not generate product revenues sufficient to attain profitability.

If third-party payors do not adequately reimburse patients for any of our product candidates, if approved for marketing, we may not be successful in selling them.

Our ability to commercialize any products successfully will depend in part on the extent to which reimbursement will be available from governmental and other third-party payors, both in the United States and in foreign markets. Even if we succeed in bringing one or more products to the market, the amount reimbursed for our products may be insufficient to allow us to compete effectively and could adversely affect our profitability.

Reimbursement by a governmental and other third-party payor may depend upon a number of factors, including a governmental or other third-party payor's determination that use of a product is:

- a covered benefit under its health plan;
- safe, effective and medically necessary;
- appropriate for the specific patient;
- cost-effective; and
- neither experimental nor investigational.

Obtaining reimbursement approval for a product from each third-party and governmental payor is a time-consuming and costly process that could require us to provide supporting scientific, clinical and cost-effectiveness data for the use of our products to each payor. We may not be able to provide data sufficient to obtain reimbursement.

Eligibility for coverage does not imply that any drug product will be reimbursed in all cases or at a rate that allows us to make a profit. Interim payments for new products, if applicable, may also not be sufficient to cover our costs and may not become permanent. Reimbursement rates may vary according to the use of the drug and the clinical setting in which it is used, may be based on payments allowed for lower-cost drugs that are already reimbursed, may be incorporated into existing payments for other products or services and may reflect budgetary constraints and/or Medicare or Medicaid data used to calculate these rates. Net prices for products also may be

reduced by mandatory discounts or rebates required by government health care programs or by any future relaxation of laws that restrict imports of certain medical products from countries where they may be sold at lower prices than in the United States.

The health care industry is experiencing a trend toward containing or reducing costs through various means, including lowering reimbursement rates, limiting therapeutic class coverage and negotiating reduced payment schedules with service providers for drug products. The Medicare Prescription Drug, Improvement and Modernization Act of 2003, or MMA, became law in November 2003 and created a broader prescription drug benefit for Medicare beneficiaries. The MMA also contains provisions intended to reduce or eliminate delays in the introduction of generic drug competition at the end of patent or nonpatent market exclusivity. The impact of the MMA on drug prices and new drug utilization over the next several years is unknown. The MMA also made adjustments to the physician fee schedule and the measure by which prescription drugs are presently paid, changing from Average Wholesale Price to Average Sales Price. The effects of these changes are unknown but may include decreased utilization of new medicines in physician prescribing patterns, and further pressure on drug company sponsors to provide discount programs and reimbursement support programs. There have been, and we expect that there will continue to be, federal and state proposals to constrain expenditures for medical products and services, which may affect reimbursement levels for our future products. In addition, the Centers for Medicare & Medicaid Services frequently change product descriptors, coverage policies, product and service codes, payment methodologies and reimbursement values. Third-party payors often follow Medicare coverage policy and payment limitations in setting their own reimbursement rates and may have sufficient market power to demand significant price reductions.

Foreign governments tend to impose strict price controls, which may adversely affect our future profitability.

In some foreign countries, particularly in the European Union, prescription drug pricing is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a product. To obtain reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of our product candidate to other available therapies. If reimbursement of our products is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our profitability will be negatively affected.

We may incur significant costs complying with environmental laws and regulations, and failure to comply with these laws and regulations could expose us to significant liabilities.

Our research and development activities use biological and hazardous materials that are dangerous to human health and safety or the environment. We are subject to a variety of federal, state and local laws and regulations governing the use, generation, manufacture, storage, handling and disposal of these materials and wastes resulting from these materials. We are also subject to regulation by the Occupational Safety and Health Administration, or OSHA, the California and federal environmental protection agencies and to regulation under the Toxic Substances Control Act. OSHA or the California or federal Environmental Protection Agency, or EPA, may adopt regulations that may affect our research and development programs. We are unable to predict whether any agency will adopt any regulations that could have a material adverse effect on our operations. We have incurred, and will continue to incur, capital and operating expenditures and other costs in the ordinary course of our business in complying with these laws and regulations.

Although we believe our safety procedures for handling and disposing of these materials comply with federal, state and local laws and regulations, we cannot entirely eliminate the risk of accidental injury or contamination from the use, storage, handling or disposal of hazardous materials. In the event of contamination or injury, we could be held liable for any resulting damages, and any liability could significantly exceed our insurance coverage.

We may not be able to conduct, or contract with others to conduct, animal testing in the future, which could harm our research and development activities.

Certain laws and regulations relating to drug development require us to test our product candidates on animals before initiating clinical trials involving humans. Animal testing activities have been the subject of controversy and adverse publicity. Animal rights groups and other organizations and individuals have attempted to stop animal testing activities by pressing for legislation and regulation in these areas and by disrupting these activities through protests and other means. To the extent the activities of these groups are successful, our research and development activities may be interrupted or delayed.

Risks Related To This Offering and Ownership of Our Common Stock

We may not maintain the listing of our common stock on the NASDAQ Capital Market.

Our ability to raise additional capital may be dependent upon our stock being quoted on the NASDAQ Capital Market. Previously, we had fallen out of compliance with continued listing requirements because our common stock did not comply with the $1.00 minimum bid price requirement for continued listing set forth in NASDAQ Marketplace Rule 5450(a)(1) (formerly Rule 4450(a)(5)). To regain compliance, effective August 20, 2008, we implemented a 1-for-6 reverse stock split of our common stock. After that date, our common stock traded above the minimum $1.00 bid price for at least ten consecutive business days and on September 5, 2008, the NASDAQ Stock Market notified us that we had regained compliance with the minimum bid price requirements. Even though we regained compliance with the minimum bid price, we cannot assure you that we will be able to maintain compliance with the minimum bid price requirement or other listing requirements in the future, and our failure to do so could result in the delisting of our shares from the NASDAQ Capital Market.

A significant number of shares of our common stock are subject to issuance upon exercise of outstanding warrants, which upon such exercise would result in dilution to our security holders.

On October 5, 2009, we issued outstanding warrants to purchase an aggregate of 7,329,819 shares of our common stock, at an exercise price of $2.23 per share. In addition, on August 29, 2008, we issued outstanding warrants to purchase an aggregate of 3,588,221 shares of our common stock, at an exercise price of $2.34 per share, which exercise price was subsequently reduced to $1.86 per share on October 5, 2009 under the anti-dilution provisions of the warrants as a result of our October 2009 private placement. The exercise price and/or the number of shares of common stock issuable upon exercise of the warrants may be adjusted in certain circumstances, including certain issuances of securities at a price equal to less than the then current exercise price, subdivisions and stock splits, stock dividends, combinations, reorganizations, reclassifications, consolidations, mergers or sales of properties and assets and upon the issuance of certain assets or securities to holders of our common stock, as applicable. Although we cannot determine at this time which of these warrants will ultimately be exercised, it is reasonable to assume that such warrants will be exercised only if the exercise price is below the market price of our common stock. To the extent the warrants are exercised, additional shares of our common stock will be issued that will be eligible for resale in the public market, which will result in dilution to our security holders. The issuance of additional securities could also have an adverse effect on the market price of our common stock.

The price of our common stock has been and may continue to be volatile.

The stock markets in general, the markets for biotechnology stocks and, in particular, the stock price of our common stock, have experienced extreme volatility.

Price declines in our common stock could result from general market and economic conditions and a variety of other factors, including:

- adverse results or delays in our clinical trials;
- announcements of FDA non-approval of our product candidates, or delays in the FDA or other foreign regulatory agency review process;

- adverse actions taken by regulatory agencies with respect to our product candidates, clinical trials, manufacturing processes or sales and marketing activities;
- announcements of technological innovations, patents or new products by our competitors;
- regulatory developments in the United States and foreign countries;
- any lawsuit involving us or our product candidates;
- announcements concerning our competitors, or the biotechnology or pharmaceutical industries in general;
- developments concerning any strategic alliances or acquisitions we may enter into;
- actual or anticipated variations in our operating results;
- changes in recommendations by securities analysts or lack of analyst coverage;
- deviations in our operating results from the estimates of analysts;
- sales of our common stock by our executive officers, directors and five percent stockholders or sales of substantial amounts of common stock; and
- loss of any of our key scientific or management personnel.

In the past, following periods of volatility in the market price of a particular company's securities, litigation has often been brought against that company. Any such lawsuit could consume resources and management time and attention, which could adversely affect our business.

If our officers, directors and largest stockholders choose to act together, they may be able to control our management and operations, acting in their best interests and not necessarily those of other stockholders.

As of September 30, 2010, our officers, directors and other affiliates beneficially owned in excess of 25.0% of our common stock. As a result, these stockholders, acting together, will be able to significantly influence all matters requiring approval by our stockholders, including the election of directors and the approval of mergers or other business combination transactions. The interests of this group of stockholders may not always coincide with the interests of other stockholders, and they may act in a manner that advances their best interests and not necessarily those of other stockholders.

Our certificate of incorporation, our bylaws and Delaware law contain provisions that could discourage another company from acquiring us and may prevent attempts by our stockholders to replace or remove our current management.

Provisions of Delaware law, where we are incorporated, our certificate of incorporation and bylaws may discourage, delay or prevent a merger or acquisition that stockholders may consider favorable, including transactions in which you might otherwise receive a premium for your shares. In addition, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace or remove our board of directors. These provisions include:

- authorizing the issuance of "blank check" preferred stock without any need for action by stockholders;
- providing for a classified board of directors with staggered terms;
- requiring supermajority stockholder voting to effect certain amendments to our certificate of incorporation and bylaws;
- eliminating the ability of stockholders to call special meetings of stockholders;
- prohibiting stockholder action by written consent; and

- establishing advance notice requirements for nominations for election to our board of directors or for proposing matters that can be acted on by stockholders at stockholder meetings.

In addition, in August 2006, our board of directors adopted a preferred shares rights agreement, the provisions of which could make it more difficult for a potential acquirer to consummate a transaction without the approval of our board of directors.

We have never paid dividends on our common stock and we do not anticipate paying any cash dividends in the foreseeable future.

We have never declared or paid cash dividends on our common stock. We do not anticipate paying any cash dividends on our common stock in the foreseeable future. We currently intend to retain all available funds and any future earnings to fund the development and growth of our business. As a result, capital appreciation, if any, of our common stock will be our stockholders' sole source of gain for the foreseeable future.

Our management will have broad discretion over the use of the net proceeds from this offering.

We currently anticipate using the net proceeds from this offering for general corporate purposes, including working capital and other general and administrative purposes. We have not reserved or allocated specific amounts for these purposes and we cannot specify with certainty how we will use the net proceeds. Accordingly, our management will have considerable discretion in the application of the net proceeds and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. The net proceeds may be used for corporate purposes that do not increase our operating results or market value. Until the net proceeds are used, they may be placed in investments that do not produce income or that lose value.

If you purchase shares of common stock sold in this offering, you may experience substantial dilution as a result of this offering and future equity issuances.

The public offering price per share in this offering may be substantially higher than the pro forma net tangible book value per share of our common stock outstanding prior to this offering. As a result, investors purchasing common stock in this offering may experience immediate substantial dilution. In addition, we have issued options and warrants to acquire common stock at prices that may be below the public offering price. To the extent outstanding options and warrants are ultimately exercised, there may be further dilution to investors in this offering.

USE OF PROCEEDS

We currently intend to use the net proceeds from the sale of the securities offered by us hereunder for working capital and other general corporate purposes.

We have not determined the amounts we plan to spend on any of the areas indicated above or the timing of these expenditures. As a result, our management will have broad discretion to allocate the net proceeds from this offering. Pending application of the net proceeds as described above, we expect to invest the net proceeds in short-term, interest-bearing, investment-grade securities pursuant to our investment policy.

DESCRIPTION OF SECURITIES WE ARE OFFERING

Common Stock

The material terms and provisions of our common stock are described under the caption "Description of Capital Stock" beginning on page 5 of the accompanying prospectus.

DILUTION

Our net tangible book value as of June 30, 2010 was $16.8 million, or $ 0.50 per share of common stock, based on 33,702,242 shares of our common stock outstanding. Net tangible book value per share is calculated by subtracting our total liabilities from our total tangible assets, which is total assets less intangible assets, and dividing this amount by the number of shares of common stock outstanding. After giving effect to the sale of our common stock in the aggregate amount of $15 million at an assumed offering price of $1.34 per share, the last reported sale price of our common stock on The NASDAQ Capital Market on October 25, 2010, and after deducting estimated offering commissions and expenses payable by us, our net tangible book value as of June 30, 2010 would have been $31.3 million, or $0.70 per share of common stock. This represents an immediate increase in the net tangible book value of $0.20 per share to our existing stockholders and an immediate and substantial dilution in net tangible book value of $0.64 per share to new investors. The following table illustrates this per share dilution:

Assumed offering price per share		$1.34
Net tangible book value per share as of June 30, 2010	$0.50	
Increase per share attributable to new investors	$0.20	
As-adjusted net tangible book value per share after this offering		$0.70
Net dilution per share to new investors		$0.64

The table above assumes for illustrative purposes that an aggregate of 11,194,030 shares of our common stock are sold at a price of $1.34 per share, the last reported sale price of our common stock on The NASDAQ Capital Market on October 25, 2010, for aggregate gross proceeds of $15 million. The shares sold in this offering, if any, will be sold from time to time at various prices. An increase of $0.10 per share in the price at which the shares are sold from the assumed offering price of $1.34 per share shown in the table above, assuming all of our common stock in the aggregate amount of $15 million is sold at that price, would increase our adjusted net tangible book value per share after the offering to $0.71 per share and would increase the dilution in net tangible book value per share to new investors in this offering to $0.73 per share, after deducting commissions and estimated aggregate offering expenses payable by us. A decrease of $0.10 per share in the price at which the shares are sold from the assumed offering price of $1.34 per share shown in the table above, assuming all of our common stock in the aggregate amount of $15 million is sold at that price, would decrease our adjusted net tangible book value per share after the offering to $0.68 per share and would decrease the dilution in net tangible book value per share to new investors in this offering to $0.56 per share, after deducting commissions and estimated aggregate offering expenses payable by us. This information is supplied for illustrative purposes only.

The calculations above are based upon 33,702,242 shares of common stock outstanding and exclude:

- Options representing the right to purchase a total of 2,755,160 shares of common stock at a weighted average exercise price of $1.36 per share;
- 1,140,736 shares of common stock which were reserved for future equity awards that may be granted in the future under our equity incentive plans;
- Warrants representing the right to purchase 3,588,221 and 7,329,819 shares of common stock at exercise prices of $1.86 and $2.23 per share, respectively.

PRICE RANGE OF COMMON STOCK

Our common stock has been traded on the NASDAQ Capital Market under the symbol "THLD" since August 20, 2008 and the NASDAQ Global Market from February 4, 2005 to August 19, 2008. Prior to that time there was no public market for our stock. The following table lists quarterly information on the price range of our common stock based on the high and low reported sale prices for our common stock as reported by the NASDAQ Capital Market and the NASDAQ Global Market for the periods indicated below, respectively. These prices do not include retail markups, markdowns or commissions. In August 2008, our Board of Directors approved a 1-for-6 reverse split of its common stock, effective August 20, 2008. Accordingly, the prices of our common stock have been retroactively adjusted to reflect the reverse split.

	High	Low
Year Ended December 31, 2008:		
First Quarter	$4.56	$2.10
Second Quarter	$2.76	$1.86
Third Quarter	$2.66	$1.25
Fourth Quarter	$1.37	$0.21
Year Ended December 31, 2009:		
First Quarter	$1.54	$0.53
Second Quarter	$2.57	$1.17
Third Quarter	$2.08	$1.10
Fourth Quarter	$3.87	$1.70
Year Ended December 31, 2010:		
First Quarter	$2.43	$1.65
Second Quarter	$2.15	$1.20
Third Quarter	$1.83	$0.98
Fourth Quarter (through October 28, 2010)	$1.38	$1.18

We estimate that there were approximately 111 holders of record of our common stock as of September 30, 2010.

DIVIDEND POLICY

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

PLAN OF DISTRIBUTION

We have entered into an At Market Issuance Sales Agreement with McNicoll, Lewis & Vlak LLC, or MLV, under which we may issue and sell our common stock having aggregate sales proceeds of up to $15 million from time to time through MLV acting as agent and/or principal. The form of the sales agreement will be filed as an exhibit to a report filed under the Exchange Act and incorporated by reference in this prospectus supplement. The sales of our common stock, if any, under the sales agreement will be made in sales deemed to be "at-the-market" equity offerings as defined in Rule 415 promulgated under the Securities Act of 1933, as amended, including without limitation sales made directly on The NASDAQ Capital Market, on any other existing trading market for our common stock or to or through a market maker. MLV may also sell our common stock by any other method

permitted by law, including but not limited to in privately negotiated transactions, with our consent. We may instruct MLV not to sell common stock if the sales cannot be effected at or above the price designated by us from time to time. We or MLV may suspend the offering of common stock upon notice and subject to other conditions. As an agent, MLV will not engage in any transactions that stabilize the price of our common stock.

We will pay MLV commissions for its services in acting as agent in the sale of common stock. MLV will be entitled to compensation at a fixed commission rate of 3% of the gross sales price per share sold. We estimate that the total expenses for the offering, excluding compensation payable to MLV under the terms of the sales agreement, will be approximately $100,000.

Settlement for sales of common stock will occur on the third business day following the date on which any sales are made, or on some other date that is agreed upon by us and MLV in connection with a particular transaction, in return for payment of the net proceeds to us. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

MLV will act as sales agent on a commercially reasonable efforts basis consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of NASDAQ. In connection with the sale of the common stock on our behalf, MLV may, and will with respect to sales effected in an "at the market offering," be deemed to be an "underwriter" within the meaning of the Securities Act and the compensation of MLV may be deemed to be underwriting commissions or discounts. We have agreed to provide indemnification and contribution to MLV against certain civil liabilities, including liabilities under the Securities Act. We have also agreed to reimburse MLV for certain other specified expenses not to exceed $25,000.

Under the terms of the sales agreement, we may also sell our common stock to MLV, as principal for its own account, at a price negotiated at the time of sale. If we sell shares to MLV in this manner, we will enter into a separate agreement setting forth the terms of such transaction, and we will describe the agreement in a separate prospectus supplement or pricing supplement.

The offering pursuant to the sales agreement will terminate upon the earlier of (i) the sale of all shares of common stock subject to the agreement, or (ii) termination of the sales agreement as permitted therein.

MLV and its affiliates may in the future provide various investment banking and other financial services for us and our affiliates, for which services they may in the future receive customary fees. To the extent required by Regulation M, MLV will not engage in any market making activities involving our common stock while the offering is ongoing under this prospectus supplement.

LEGAL MATTERS

The validity of the shares of common stock being offered has been passed upon for us by Morrison & Foerster LLP, Palo Alto, California. MLV is being represented in connection with this offering by DLA Piper LLP (US), New York, New York.

EXPERTS

The consolidated financial statements incorporated into this prospectus supplement by reference to the Annual Report on Form 10-K for the year ended December 31, 2009 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

This prospectus supplement is part of a registration statement on Form S-3 that we filed with the SEC. The registration statement that contains this prospectus supplement, including the exhibits to the registration statement, contains additional information about us and the securities offered by this prospectus supplement. We file annual, quarterly and special reports, proxy statements and other information with the SEC. You may read and copy any document we file with the SEC at the SEC's Public Reference Room For further information with respect to us and the securities covered by this prospectus supplement and the accompanying prospectus, please see the registration statement and the exhibits filed with the registration statement. A copy of the registration statement and the exhibits filed with the registration statement may be inspected without charge at the Public Reference Room maintained by the SEC, located at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for furthermore information about the operation of the Public Reference Room. The SEC also maintains an Internet website that contains reports, proxy and information statements, and other information regarding registrants that file electronically with the SEC, including Threshold Pharmaceuticals, Inc. The SEC's Internet site can be found at. The address of the website is http://www.sec.gov.

We file annual, quarterly and special reports, proxy statements and other information with the SEC. You may read and copy any document we file with the SEC at the Public Reference Room and website of the SEC referred to above. We maintain a website at http://www.thresholdpharm.com. You may access our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed pursuant to Sections 13(a) or 15(d) of the Exchange Act with the SEC free of charge at our website as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. Our website and the information contained on that site, or connected to that site, are not incorporated into and are not a part of this prospectus supplement or the accompanying prospectus.

Table of Contents

PROSPECTUS

$50,000,000

Common Stock
Preferred Stock
Debt Securities
Warrants
Rights
Units

From time to time, we may offer up to $50,000,000 of our common stock; preferred stock; debt securities; warrants or rights to purchase common stock, preferred stock or debt securities or any combination of these securities; and units consisting of common stock, preferred stock, debt securities or warrants or any combination of these securities, in one or more transactions. We may also offer common stock or preferred stock upon conversion of debt securities; and common stock upon conversion of preferred stock.

We will provide specific terms of these offerings and securities in one or more supplements to this prospectus. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings. The prospectus supplement, and any documents incorporated by reference, may also add, update or change information contained in this prospectus. You should read this prospectus, the applicable prospectus supplement, any documents incorporated by reference and any related free writing prospectus carefully before buying any of the securities being offered.

We may offer and sell these securities to or through one or more underwriters, dealers and agents, or directly to purchasers, on a continuous or delayed basis.

Our common stock trades on the NASDAQ Capital Market under the symbol “THLD.” The applicable prospectus supplement will contain information, where applicable, as to any other listing, if any, of the securities covered by the applicable prospectus supplement. As of September 29, 2010, the aggregate market value of our outstanding common stock held by non-affiliates was approximately $33,842,220 based on 33,702,242 shares of outstanding common stock, of which 8,446,854 shares are held by affiliates, and a price of $1.34 per share, which was the last reported sale price of our common stock as quoted on the NASDAQ Capital Market on September 29, 2010. We have not offered any securities pursuant to General Instruction I.B.6 of Form S-3 during the prior 12 calendar month period that ends on, and includes, the date of this prospectus.

INVESTING IN OUR SECURITIES INVOLVES RISKS. YOU SHOULD REVIEW CAREFULLY THE RISKS AND UNCERTAINTIES DESCRIBED UNDER THE HEADING “RISK FACTORS” CONTAINED IN THE APPLICABLE PROSPECTUS SUPPLEMENT AND ANY RELATED FREE WRITING PROSPECTUS, AND UNDER SIMILAR HEADINGS IN THE OTHER DOCUMENTS THAT ARE INCORPORATED BY REFERENCE INTO THIS PROSPECTUS.

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.

The date of this prospectus is October 15, 2010.

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS

This document is called a prospectus and is part of a registration statement that we have filed with the Securities and Exchange Commission ("SEC"), using a "shelf" registration process. Under this shelf registration process, we may, from time to time, offer shares of our common stock and preferred stock, various series of debt securities or warrants or rights to purchase any of such securities, either individually or in units, in one or more offerings, in amounts we will determine from time to time, up to a total dollar amount of $50,000,000.

This prospectus provides you with a general description of the securities we may offer. Each time we offer a type or series of securities described in this prospectus, we will provide a prospectus supplement, or information that is incorporated by reference into this prospectus, containing more specific information about the terms of the securities that we are offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings and securities. This prospectus, together with applicable prospectus supplements, any information incorporated by reference and any related free writing prospectuses, includes all material information relating to these offerings and securities. We may also add, update or change in the prospectus supplement any of the information contained in this prospectus or in the documents that we have incorporated by reference into this prospectus, including without limitation, a discussion of any risk factors or other special considerations that apply to these offerings or securities or the specific plan of distribution. If there is any inconsistency between the information in this prospectus and a prospectus supplement or information incorporated by reference having a later date, you should rely on the information in that prospectus supplement or incorporated information having a later date. We urge you to read carefully this prospectus, any applicable prospectus supplement and any related free writing prospectus, together with the information incorporated herein by reference as described under the heading "Where You Can Find More Information," before buying any of the securities being offered.

You should rely only on the information we have provided or incorporated by reference in this prospectus, any applicable prospectus supplement and any related free writing prospectus. We have not authorized anyone to provide you with different information. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus.

Neither the delivery of this prospectus nor any sale made under it implies that there has been no change in our affairs or that the information in this prospectus is correct as of any date after the date of this prospectus. You should assume that the information in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate only as of the date on the front of the document and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any related free writing prospectus, or any sale of a security.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under "Where You Can Find More Information."

Market data and certain industry forecasts used in this prospectus and the documents included in this prospectus were obtained from market research, publicly available information and industry publications. We believe that these sources are generally reliable, but the accuracy and completeness of such information is not guaranteed. We have not independently verified this information, and we do not make any representation as to the accuracy of such information.

In this prospectus, unless the context otherwise requires, references to "we," "us," "our" or similar terms, as well as references to "Threshold Pharmaceuticals" or the "Company," refer to Threshold Pharmaceuticals, Inc., either alone or together with our subsidiaries.

The name Threshold Pharmaceuticals, Inc. is our trademark. Other trademarks, product names and company names appearing in this prospectus and documents included in this prospectus or incorporated by reference in this prospectus are the property of their respective owners.

ABOUT THRESHOLD PHARMACEUTICALS

We are a biotechnology company focused on the discovery and development of drugs targeting the microenvironment of solid tumors as novel treatments for patients living with cancer. The microenvironment of solid tumors is characterized by, among other things, hypoxia or lack of oxygen, disordered blood vessel growth, and the upregulation of glucose transport. This hypoxic environment is known to be resistant to standard chemotherapy and radiation. It is thought to be responsible for the poor prognosis of many solid tumors and treating the hypoxic environment is currently believed to be a significant unmet medical need. Our product candidates are designed to selectively target the hypoxic microenvironment of tumors either by selective toxin activation in the case of our hypoxia activated prodrug (HAP) program, including TH-302, or potentially utilizing the consequences of increased uptake of glucose in cancer cells relative to most normal cells. Our product candidate glufosfamide, which we licensed to Eleison Pharmaceuticals, Inc. in October 2009, shares certain structural characteristics with glucose but acts instead as a chemotherapeutic toxin when taken up by a cell.

We were incorporated in Delaware on October 17, 2001. Our principal executive offices are located at 1300 Seaport Boulevard, Suite 500 Redwood City, California, 94063. Our telephone number is (650) 474-8200. Our website is located at www.thresholdpharm.com. Information contained on, or that can be accessed through, our website is not part of this prospectus.

INCORPORATION OF INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" the information we file with it, which means that we can disclose important information to you by referring you to those documents. The information we incorporate by reference is an important part of this prospectus, and certain information that we will later file with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below as well as any future filings made with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act from the date of the initial registration statement and prior to the effectiveness of this registration statement, and any filings made after the date of this prospectus until we sell all of the securities under this prospectus, except that we do not incorporate any document or portion of a document that was furnished and deemed by the rules of the SEC not to have been filed:

- Our Annual Report on Form 10-K for the fiscal year ended December 31, 2009, filed with the SEC on March 8, 2010;
- The portions of our definitive Proxy Statement on Schedule 14A for our 2010 Annual Meeting of Stockholders, filed with the SEC on April 5, 2010, that are incorporated by reference into our Annual Report on Form 10-K for the fiscal year ended December 31, 2009;
- Our Quarterly Report on Form 10-Q for the quarter ended March 31, 2010, filed with the SEC on May 6, 2010;
- Our Quarterly Report on Form 10-Q for the quarter ended June 30, 2010, filed with the SEC on August 5, 2010;

- Our Current Reports on Form 8-K filed with the SEC on March 31, 2010, May 12, 2010, May 20, 2010, June 1, 2010, June 8, 2010, June 29, 2010 and July 1, 2010;
- The description of our capital stock contained in our Registration Statement on Form 8-A, as amended, filed with the SEC on January 28, 2005, including any amendment or report filed for the purpose of updating such description (including an amendment thereto dated as of February 4, 2005); and
- The description of our Series A participating preferred stock contained in our Registration Statement on Form 8-A filed with the SEC on August 9, 2006, including any amendment or report filed for the purpose of updating such description.

Additionally, all reports and other documents subsequently filed by us pursuant to Sections 13(a), 13(c), 14, and 15(d) of the Exchange Act after (i) the date of the initial registration statement and prior to effectiveness of the registration statement; and (ii) the date of this prospectus and prior to the termination or completion of this offering, shall be deemed to be incorporated by reference in this prospectus and to be part hereof from the date of filing of such reports and other documents. Any information that we subsequently file with the SEC that is incorporated by reference as described above will automatically update and supersede any previous information that is part of this prospectus.

We hereby undertake to provide without charge to each person, including any beneficial owner, to whom a copy of this prospectus is delivered, upon written or oral request of any such person, a copy of any and all of the information that has been or may be incorporated by reference in this prospectus, other than exhibits to such documents. Requests for such copies should be directed to our Investor Relations Department at 1300 Seaport Boulevard, Suite 500, Redwood City, California 94063, Telephone (650) 474-8200.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act of 1933, as amended ("Securities Act"), with respect to the securities covered by this prospectus. This prospectus, which is a part of the registration statement, does not contain all of the information set forth in the registration statement or the exhibits and schedules filed therewith. For further information with respect to us and the securities covered by this prospectus, please see the registration statement and the exhibits filed with the registration statement. A copy of the registration statement and the exhibits filed with the registration statement may be inspected without charge at the Public Reference Room maintained by the SEC, located at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the Public Reference Room. The SEC also maintains an Internet website that contains reports, proxy and information statements and other information regarding registrants that file electronically with the SEC. The address of the website is http://www.sec.gov.

We are subject to the information and periodic reporting requirements of the Securities Exchange Act of 1934, as amended ("Exchange Act"), and, in accordance therewith, we file periodic reports, proxy statements and other information with the SEC. Such periodic reports, proxy statements and other information are available for inspection and copying at the Public Reference Room and website of the SEC referred to above. We maintain a website at http://www.thresholdpharm.com. You may access our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed pursuant to Sections 13(a) or 15(d) of the Exchange Act with the SEC free of charge at our website as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. Our website and the information contained on that site, or connected to that site, are not incorporated into and are not a part of this prospectus.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents we incorporate by reference in this prospectus contains forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. We may, in some cases, use words such as "project," "believe," "anticipate," "plan," "expect," "estimate," "intend," "should," "would," "could," "potentially," "will," or "may," or other words that convey uncertainty of future events or outcomes to identify these forward-looking statements. Forward-looking statements may include statements about:

- our ability to enroll and complete clinical trials for our TH-302 development program;
- the success of any clinical trials that we commence;
- the timing of results of our clinical trials;
- whether our product candidates, including TH-302, produce unwanted or unanticipated side effects;
- the costs and timing of obtaining drug supply for our pre-clinical and clinical activities;
- our receipt of regulatory approvals;
- our ability to establish and maintain intellectual property rights in our product candidates;
- uncertainties associated with obtaining and enforcing patents and other intellectual property rights;
- whether any product candidates that we are able to commercialize are safer or more effective than other marketed products, treatments or therapies;
- our research and development activities, including development of new product candidates, and projected expenditures;
- our ability to complete preclinical and clinical testing successfully for new product candidates that we may develop or license;
- our ability to have manufactured sufficient supplies of active pharmaceutical ingredient, or API, and drug product for clinical testing and commercialization;
- our ability to retain and hire necessary employees and appropriately staff our development programs;
- our cash needs; and
- our financial performance.

There are a number of important factors that could cause actual results to differ materially from the results anticipated by these forward-looking statements. These important factors include those that we discuss under the heading "Risk Factors" and in other sections of our Quarterly Report on Form 10-Q for the quarter ended June 30, 2010, as well as in our other reports filed from time to time with the SEC that are incorporated by reference into this prospectus. You should read these factors and the other cautionary statements made in this prospectus and in the documents we incorporate by reference into this prospectus as being applicable to all related forward-looking statements wherever they appear in this prospectus or the documents we incorporate by reference into this prospectus. If one or more of these factors materialize, or if any underlying assumptions prove incorrect, our actual results, performance or achievements may vary materially from any future results, performance or achievements expressed or implied by these forward-looking statements. We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

RISK FACTORS

Investing in our securities involves significant risks. You should review carefully the risks and uncertainties described under the heading "Risk Factors" contained in, or incorporated into, the applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference herein or therein. Each of the referenced risks and uncertainties could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our securities. Additional risks not known to us or that we believe are immaterial may also adversely affect our business, operating results and financial condition and the value of an investment in our securities.

DESCRIPTION OF SECURITIES WE MAY OFFER

We may offer, from time to time, shares of our common stock and preferred stock, various series of debt securities or warrants or rights to purchase any of such securities, either individually or in units, in amounts we will determine from time to time, under this prospectus at prices and on terms to be determined by market conditions at the time of offering. This prospectus provides you with a general description of the securities we may offer. See "Description of Capital Stock," "Description of Debt Securities," Description of Warrants," "Description of Rights," and "Description of Units" below. Each time we offer a type or series of securities, we will provide a prospectus supplement that will describe the specific amounts, prices and other important terms of the securities, including, to the extent applicable:

- designation or classification;
- aggregate principal amount or aggregate offering price;
- maturity, if applicable;
- rates and times of payment of interest or dividends, if any;
- redemption, conversion or sinking fund terms, if any;
- voting or other rights, if any;
- conversion prices, if any; and
- important federal income tax considerations.

The prospectus supplement and any related free writing prospectus also may supplement, or, as applicable, add, update or change information contained in this prospectus or in documents we have incorporated by reference. However, no prospectus supplement or free writing prospectus will offer a security that is not registered and described in this prospectus at the time of the effectiveness of the registration statement of which this prospectus is a part.

The terms of any particular offering, the initial offering price and the net proceeds to us will be contained in the prospectus supplement, information incorporated by reference or free writing prospectus relating to such offering.

DESCRIPTION OF CAPITAL STOCK

The description below of our capital stock and provisions of our amended and restated certificate of incorporation and amended and restated bylaws are summaries and are qualified by reference to the amended and restated certificate of incorporation and the amended and restated bylaws. These documents are filed as exhibits to the registration statement of which this prospectus is a part.

Our amended and restated certificate of incorporation authorizes the issuance of up to 150,000,000 shares of common stock, par value $0.001 per share, and 2,000,000 shares of preferred stock, par value $0.001 per share. The rights and preferences of the preferred stock may be established from time to time by our board of directors.

Common Stock

Each holder of common stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, except matters that relate only to one or more of the series of preferred stock, and each holder does not have cumulative voting rights. Accordingly, the holders of a majority of the shares of common stock entitled to vote in any election of directors can elect all of the directors standing for election, if they so choose.

Subject to preferences that may be applicable to any then outstanding preferred stock, holders of common stock are entitled to receive ratably those dividends, if any, as may be declared from time to time by the board of directors out of legally available funds. In the event of our liquidation, dissolution or winding up, holders of common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any outstanding shares of preferred stock.

Holders of common stock have no preemptive or conversion rights or other subscription rights, and there are no redemption or sinking fund provisions applicable to the common stock. All outstanding shares of common stock are, and the shares of common stock offered by us in this offering, when issued and paid for, will be fully paid and nonassessable. The rights, preferences and privileges of the holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock which we may designate in the future.

Preferred Stock

Our board of directors is authorized, subject to any limitations prescribed by law, without stockholder approval, to issue up to an aggregate of 2,000,000 shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions granted to or imposed upon the preferred stock, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences. The rights of the holders of common stock will be subject to, and may be adversely affected by, the rights of holders of any preferred stock that may be issued in the future. Issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could have the effect of delaying, deferring or preventing a change in control of us. We have no present plans to issue any shares of preferred stock, but 200,000 shares of preferred stock have been designated as “Series A Participating Preferred Stock” to satisfy our obligations with respect to the Rights described below.

Warrants

As of September 29, 2010, we had outstanding warrants to purchase an aggregate of 3,588,221 shares of our common stock with an exercise price of $1.86 per share, and warrants to purchase an aggregate of 7,329,819 shares of our common stock with an exercise price of $2.23 per share. The exercise price and/or the number of shares of common stock issuable upon exercise of the warrants may be adjusted in certain circumstances, including certain issuances of securities at a price equal to less than the then current exercise price, subdivisions and stock splits, stock dividends, combinations, reorganizations, reclassifications, consolidations, mergers or sales of properties and assets and upon the issuance of certain assets or securities to holders of our common stock, as applicable.

Rights Agreement

In August 2006, our board of directors declared a dividend of one preferred stock purchase right, a Right, for each share of common stock outstanding as of the close of business on August 23, 2006. The Rights currently

trade with, and are inseparable from, the common stock. The Rights will become exercisable only if a person or group (i) acquires beneficial ownership of 15% or more of our outstanding common stock or (ii) commences a tender or exchange offer that would result in that person or group becoming a beneficial owner of 15% or more of our outstanding common stock. Each Right allows its holder to purchase from us one one-thousandth of a share of Series A Participating Preferred Stock at a purchase price of $25.00 per one-thousandth of a preferred share, subject to adjustment. The Rights expire on August 8, 2016, unless we extend the expiration date, redeem or exchange the Rights on an earlier date or the Rights expire upon consummation of certain mergers, consolidations or sales of assets. Effective July 10, 2008 and September 29, 2009, we amended the terms of the Rights to ensure that they would not become exercisable solely by virtue of our private placements of securities completed on August 29, 2008 and October 5, 2009, respectively.

Effect of Certain Provisions of our Amended and Restated Certificate of Incorporation and Bylaws and the Delaware Anti-Takeover Statute

Amended and Restated Certificate of Incorporation and Bylaws

Some provisions of Delaware law and our amended and restated certificate of incorporation and bylaws contain provisions that could make the following transactions more difficult:

- acquisition of us by means of a tender offer;
- acquisition of us by means of a proxy contest or otherwise; or
- removal of our incumbent officers and directors.

These provisions, summarized below, are expected to discourage coercive takeover practices and inadequate takeover bids and to promote stability in our management. These provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with our board of directors.

- *Undesignated Preferred Stock.* The ability to authorize undesignated preferred stock makes it possible for our board of directors to issue one or more series of preferred stock with voting or other rights or preferences that could impede the success of any attempt to change control of us. These and other provisions may have the effect of deferring hostile takeovers or delaying changes in control or management of our company.
- *Stockholder Meetings*. Our charter documents provide that a special meeting of stockholders may be called only by the chairman of our board of directors or by our president, or by a resolution adopted by a majority of our board of directors.
- *Requirements for Advance Notification of Stockholder Nominations and Proposals.* Our bylaws establish advance notice procedures with respect to stockholder proposals and the nomination of candidates for election as directors, other than nominations made by or at the direction of our board of directors or a committee of the board of directors.
- *Elimination of Stockholder Action by Written Consent.* Our amended and restated certificate of incorporation eliminates the right of stockholders to act by written consent without a meeting.
- *Amendment of Bylaws.* Any amendment of our bylaws by our stockholders requires approval by holders of at least 66$^{2}/_{3}$% of our then outstanding common stock, voting together as a single class.
- *Staggered Board of Directors.* Our amended and restated certificate of incorporation provide for the division of our board of directors into three classes, as nearly equal in size as possible, with staggered three-year terms. Under our amended and restated certificate of incorporation and amended and restated bylaws, any vacancy on the board of directors, including a vacancy resulting from an enlargement of the board of directors, may only be filled by vote of a majority of the directors then in office. The classification of the board of directors and the limitations on the removal of directors and filling of vacancies would have the effect of making it more difficult for a third party to acquire control of us, or of discouraging a third party from acquiring control of us.

Delaware Anti-Takeover Statute

We are subject to Section 203 of the General Corporation Law of the State of Delaware. This law prohibits a publicly held Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years following the date that the stockholder became an interested stockholder unless:

- prior to the date of the transaction, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding those shares owned by persons who are directors and also officers and by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or subsequent to the date of the transaction, the business combination is approved by the board of directors and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

Section 203 defines "business combination" to include:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of our assets involving the interested stockholder;
- in general, any transaction that results in the issuance or transfer by us of any of our stock to the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an "interested stockholder" as an entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by the entity or person.

Limitation of Liability

The Delaware General Corporation Law ("DGCL") permits Delaware corporations to eliminate or limit the monetary liability of directors for breach of their fiduciary duty of care, subject to limitations. Our certificate of incorporation provides that our directors are not liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director, except for liability for: (i) any breach of the director's duty of loyalty to us or our stockholders; (ii) acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law; (iii) under Section 174 of the DGCL; or (iv) any transaction from which a director derived an improper personal benefit.

The DGCL provides for indemnification of directors, officers, employees and agents, subject to limitations. Our bylaws and the appendix thereto provide for the indemnification of our directors, officers, employees and agents to the extent permitted by Delaware law. Our directors and officers also are insured against certain liabilities for actions taken in such capacities, including liabilities under the Securities Act.

Section 145(a) of the DGCL provides that a Delaware corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding,

whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation) by reason of the fact that such person is or was a director, officer, employee or agent of the corporation or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or enterprise, against expenses, judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, if such person had no cause to believe the conduct was unlawful.

Section 145(b) of the DGCL provides that a Delaware corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that such person acted in any of the capacities set forth above, against expenses actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit if such person acted under similar standards to those set forth above, except that no indemnification may be made in respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the court in which such action or suit was brought shall determine that despite the adjudication of liability, but in view of all the circumstances of the case, such person is fairly and reasonably entitled to be indemnified for such expenses which the court shall deem proper.

Section 145 of the DGCL further provides that to the extent a director or officer of a corporation has been successful in the defense of any action, suit or proceeding referred to in subsection (a) and (b) or in the defense of any claim, issue or matter therein, such person shall be indemnified against expenses actually and reasonably incurred by such person in connection therewith; that indemnification provided for by Section 145 shall not be deemed exclusive of any other rights to which the indemnified party may be entitled; and that the corporation may purchase and maintain insurance on behalf of a director or officer of the corporation against any liability asserted against such officer or director and incurred by such person in any such capacity or arising out of such person's status as such, whether or not the corporation would have the power to indemnify such person against such liabilities under Section 145.

As permitted by Section 102(b)(7) of the DGCL, our certificate of incorporation provides that none or our directors shall be liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director. However, this provision does not eliminate or limit the liability of a director for acts or omissions not in good faith or for breaching such person's duty of loyalty, engaging in intentional misconduct or knowingly violating the law, paying a dividend or approving a stock repurchase which was illegal, or obtaining an improper personal benefit. A provision of this type has no effect on the availability of equitable remedies, such as injunction or rescission, for breach of fiduciary duty.

We have a policy of directors' liability insurance that insures the directors and officers against the cost of defense, settlement or payment of a judgment under certain circumstances.

We believe that the foregoing policies and provisions of our certificate of incorporation and bylaws are necessary to attract and retain qualified officers and directors. Insofar as indemnification for liabilities arising under the Securities Act may be permitted with respect to our directors, officers or persons controlling the registrant pursuant to the foregoing provisions, the registrant has been informed that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Listing

Our common stock trades on the NASDAQ Capital Market under the symbol "THLD."

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is BNY Mellon Shareowner Services, P.O Box 358016, Pittsburgh, PA 15252-8016.

DESCRIPTION OF DEBT SECURITIES

The following sets forth certain general terms and provisions of the base indenture, to be entered into between us and an entity, identified in the applicable prospectus supplement, as trustee, under which the debt securities are to be issued from time to time. We have filed a form of the base indenture as an exhibit to the registration statement of which this prospectus is a part. When the debt securities are offered in the future, the applicable offering material will explain the particular terms of those securities and the extent to which the general provisions may apply. The base indenture, as it may be supplemented, amended or modified from time to time, is referred to in this prospectus as the "indenture." Wherever particular sections or defined terms of the indenture are referred to, it is intended that such sections or defined terms shall be incorporated herein by reference. In this section of this prospectus, the term "the Company" refers only to Threshold Pharamaceuticals, Inc. and not to any of its subsidiaries.

This summary and any description of the indenture and any debt securities in the applicable prospectus supplement, information incorporated by reference or free writing prospectus is subject to and is qualified in its entirety by reference to all the provisions of the indenture, any indenture supplement and the terms of the debt securities, including, in each case, the definitions therein of certain terms. We will file each of these documents, as applicable, with the SEC and incorporate them by reference as an exhibit to the registration statement of which this prospectus is a part on or before the time we issue a series of debt securities. See "Where You Can Find More Information" and "Incorporation of Certain Documents by Reference" above for information on how to obtain a copy of a document when it is filed. The specific terms of the debt securities as described in a prospectus supplement, information incorporated by reference, or free writing prospectus will supplement and, if applicable, may modify or replace the general terms described in this section.

The debt securities will represent unsecured general obligations of the Company, unless otherwise provided in the applicable offering material. As indicated in the applicable offering material, the debt securities will either be senior debt or subordinated debt.

General

The indenture does not limit the amount of debt securities that may be issued thereunder. The applicable prospectus supplement, documents incorporated by reference, or free writing prospectus with respect to any debt securities will set forth the following terms of the debt securities offered pursuant thereto:

- the title and series of such debt securities;
- any limit upon the aggregate principal amount of such debt securities of such series;
- whether such debt securities will be in global or other form;
- the date or dates and method or methods by which principal and any premium on such debt securities is payable;
- the interest rate or rates (or method by which such rate will be determined), if any;
- the dates on which any such interest will be payable and the method of payment;
- whether and under what circumstances any additional amounts are payable with respect to such debt securities;

- the notice, if any, to holders of such debt securities regarding the determination of interest on a floating rate debt security;
- the basis upon which interest on such debt securities shall be calculated, if other than that of a 360 day year of twelve 30-day months;
- the place or places where the principal of and interest or additional amounts, if any, on such debt securities will be payable;
- any redemption or sinking fund provisions, or the terms of any repurchase at the option of the holder of the debt securities;
- the denominations of such debt securities, if other than $1,000 and integral multiples thereof;
- any rights of the holders of such debt securities to convert the debt securities into, or exchange the debt securities for, other securities or property;
- the terms, if any, on which payment of principal or any premium, interest or additional amounts on such debt securities will be payable in a currency other than U.S. dollars;
- the terms, if any, by which the amount of payments of principal or any premium, interest or additional amounts on such debt securities may be determined by reference to an index, formula, financial or economic measure or other methods;
- if other than the principal amount hereof, the portion of the principal amount of such debt securities that will be payable upon declaration of acceleration of the maturity thereof or provable in bankruptcy;
- any events of default or covenants in addition to or in lieu of those described herein and remedies therefor;
- whether such debt securities will be subject to defeasance or covenant defeasance;
- the terms, if any, upon which such debt securities are to be issuable upon the exercise of warrants, units or rights;
- any trustees and any authenticating or paying agents, transfer agents or registrars or any other agents with respect to such debt securities;
- the terms, if any, on which such debt securities will be subordinate to other debt of the Company;
- whether such debt securities will be guaranteed and the terms thereof;
- whether such debt securities will be secured by collateral and the terms of such security; and
- any other specific terms of such debt securities and any other deletions from or additions to or modifications of the indenture with respect to such debt securities.

Debt securities may be presented for exchange, conversion or transfer in the manner, at the places and subject to the restrictions set forth in the debt securities and the applicable offering material. Such services will be provided without charge, other than any tax or other governmental charge payable in connection therewith, but subject to the limitations provided in the indenture.

The indenture does not contain any covenant or other specific provision affording protection to holders of the debt securities in the event of a highly leveraged transaction or a change in control of the Company, except to the limited extent described below under "— Consolidation, Merger and Sale of Assets."

Modification and Waiver

The indenture provides that supplements to the indenture and the applicable supplemental indentures may be made by the Company and the trustee for the purpose of adding any provisions to or changing in any manner or

eliminating any of the provisions of the indenture or of modifying in any manner the rights of the holders of debt securities of a series under the indenture or the debt securities of such series, with the consent of the holders of a majority (or such greater amount as is provided for any series of debt securities) in principal amount of the outstanding debt securities issued under such indenture that are affected by the supplemental indenture, voting as a single class; provided that no such supplemental indenture may, without the consent of the holder of each such debt security affected thereby, among other things:

(a) change the stated maturity of the principal of, or any premium, interest or additional amounts on, such debt securities, or reduce the principal amount thereof, or reduce the rate or extend the time of payment of interest or any additional amounts thereon, or reduce any premium payable on redemption thereof or otherwise, or reduce the amount of the principal of debt securities issued with original issue discount that would be due and payable upon an acceleration of the maturity thereof or the amount thereof provable in bankruptcy, or change the redemption provisions or adversely affect the right of repayment at the option of the holder, or change the place of payment or currency in which the principal of, or any premium, interest or additional amounts with respect to any debt security is payable, or impair or affect the right of any holder of debt securities to institute suit for the payment after such payment is due (except a rescission and annulment of acceleration with respect to a series of debt securities by the holders of at least a majority in aggregate principal amount of the then outstanding debt securities of such series and a waiver of the payment default that resulted from such acceleration);

(b) reduce the percentage of outstanding debt securities of any series, the consent of the holders of which is required for any such supplemental indenture, or the consent of whose holders is required for any waiver or reduce the quorum required for voting;

(c) modify any of the provisions of the sections of such indenture relating to supplemental indentures with the consent of the holders, waivers of past defaults or securities redeemed in part, except to increase any such percentage or to provide that certain other provisions of such indenture cannot be modified or waived without the consent of each holder affected thereby; or

(d) make any change that adversely affects the right to convert or exchange any security into or for common stock or other securities, cash or other property in accordance with the terms of the applicable debt security.

The indenture provides that a supplemental indenture that changes or eliminates any covenant or other provision of the indenture that has expressly been included solely for the benefit of one or more series of debt securities, or that modifies the rights of the holders of such series with respect to such covenant or other provision, shall be deemed not to affect the rights under the indenture of the holders of debt securities of any other series.

The indenture provides that the Company and the trustee may, without the consent of the holders of any series of debt securities issued thereunder, enter into additional supplemental indentures for one of the following purposes:

(a) to evidence the succession of another corporation to the Company and the assumption by any such successor of the covenants of the Company in such indenture and in the debt securities issued thereunder;

(b) to add to the covenants of the Company or to surrender any right or power conferred on the Company pursuant to the indenture;

(c) to establish the form and terms of debt securities issued thereunder;

(d) to evidence and provide for a successor trustee under such indenture with respect to one or more series of debt securities issued thereunder or to provide for or facilitate the administration of the trusts under such indenture by more than one trustee;

(e) to cure any ambiguity, to correct or supplement any provision in the indenture that may be defective or inconsistent with any other provision of the indenture or to make any other provisions with respect to

matters or questions arising under such indenture; provided that no such action pursuant to this clause (e) shall adversely affect the interests of the holders of any series of debt securities issued thereunder in any material respect;

(f) to add to, delete from or revise the conditions, limitations and restrictions on the authorized amount, terms or purposes of issue, authentication and delivery of securities under the indenture;

(g) to add any additional events of default with respect to all or any series of debt securities;

(h) to supplement any of the provisions of the indenture as may be necessary to permit or facilitate the defeasance and discharge of any series of debt securities, provided that such action does not adversely affect the interests of any holder of an outstanding debt security of such series or any other security in any material respect;

(i) to make provisions with respect to the conversion or exchange rights of holders of debt securities of any series;

(j) to pledge to the trustee as security for the debt securities of any series any property or assets;

(k) to add guarantees in respect of the debt securities of one or more series;

(l) to change or eliminate any of the provisions of the indenture, provided that any such change or elimination become effective only when there is no security of any series outstanding created prior to the execution of such supplemental indenture which is entitled to the benefit of such provision;

(m) to provide for certificated securities in addition to or in place of global securities;

(n) to qualify such indenture under the Trust Indenture Act of 1939, as amended;

(o) with respect to the debt securities of any series, to conform the text of the indenture or the debt securities of such series to any provision of the description thereof in the Company's offering memorandum or prospectus relating to the initial offering of such debt securities, to the extent that such provision, in the good faith judgment of the Company, was intended to be a verbatim recitation of a provision of the indenture or such securities; or

(p) to make any other change that does not adversely affect the rights of holders of any series of debt securities issued thereunder in any material respect.

Unless otherwise provided in any applicable prospectus supplement, documents incorporated by reference or free writing prospectus, the following will be events of default under the indenture with respect to each series of debt securities issued thereunder:

(a) default for 30 days in the payment when due of interest on, or any additional amount in respect of, any series of debt securities;

(b) default in the payment of principal or any premium on any series of the debt securities outstanding under the indenture when due;

(c) default in the payment, if any, of any sinking fund installment when and as due by the terms of any debt security of such series, subject to any cure period that may be specified in any debt security of such series;

(d) failure by the Company for 60 days after receipt by registered or certified mail of written notice from the trustee upon instruction from holders of at least 25% in principal amount of the then outstanding debt securities of such series to comply with any of the other agreements in the indenture and stating that such notice is a "Notice of Default" under the indenture; provided, that if such failure cannot be remedied within such 60-day period, such period shall be automatically extended by another 60 days so long as: (i) such failure is subject to cure; and (ii) the Company is using commercially reasonable efforts to cure such failure; and provided, further, that a failure to comply with any such other agreement in the indenture that results from a change in generally accepted accounting principles shall not be deemed to be an event of default;

(e) certain events of bankruptcy, insolvency or reorganization of the Company; and

(f) any other event of default provided in a supplemental indenture with respect to a particular series of debt securities, provided that any event of default that results from a change in generally accepted accounting principles shall not be deemed to be an event of default.

In case an event of default specified in clause (a) or (b) above shall occur and be continuing with respect to any series of debt securities, holders of at least 25% in aggregate principal amount of the debt securities of such series then outstanding may declare the principal (or, in the case of discounted debt securities, the amount specified in the terms thereof) of such series to be due and payable. In case an event of default specified in clause (c), (d) (other than as it relates to an event of default with respect to the Company's covenant to file reports with the SEC (see "— Certain Covenants — Reports" below)) or (f) above shall occur and be continuing with respect to any series of debt securities, holders of at least a majority in aggregate principal amount of the debt securities of such series then outstanding may declare the principal (or, in the case of discounted debt securities, the amount specified in the terms thereof) of such series to be due and payable. If an event of default described in (d) above shall occur with respect to the Company's covenant to file reports with the SEC (see "— Certain Covenants — Reports" below), then the sole remedy of holders in such case shall be to receive additional interest, if and to the extent required, by the terms of the particular series of debt securities. If an event of default described in (e) above shall occur and be continuing then the principal amount (or, in the case of discounted debt securities, the amount specified in the terms thereof) of all the debt securities outstanding shall be and become due and payable immediately, without notice or other action by any holder or the trustee, to the full extent permitted by law. Any past or existing default or event of default with respect to any series of debt securities under such indenture may be waived by the holders of a majority in aggregate principal amount of the outstanding debt securities of such series, except in each case a continuing default: (i) in the payment of the principal of, any premium or interest on, or any additional amounts with respect to, any debt security of such series; or (ii) in respect of a covenant or provision which cannot be modified or amended without the consent of each holder affected thereby.

The indenture provides that the trustee may withhold notice to the holders of any default with respect to any series of debt securities (except in payment of principal of or interest or premium on, or sinking fund payment in respect of, the debt securities) if the trustee considers it in the interest of holders to do so.

The indenture contains a provision entitling the trustee to be indemnified by the holders before proceeding to exercise any trust or power under the indenture at the request of such holders. The indenture provides that the holders of a majority in aggregate principal amount of the then outstanding debt securities of any series may direct the time, method and place of conducting any proceedings for any remedy available to the trustee or of exercising any trust or power conferred upon the trustee with respect to the debt securities of such series; provided, however, that the trustee may decline to follow any such direction if, among other reasons, the trustee determines in good faith that the actions or proceedings as directed may not lawfully be taken or would be unduly prejudicial to the holders of the debt securities of such series not joining in such direction. The right of a holder to institute a proceeding with respect to a series of debt securities will be subject to certain conditions precedent including, without limitation, that in case of an event of default specified in clause (a), (b) or (e) of the first paragraph above under "— Events of Default," holders of at least 25%, or in case of an event of default other than specified in clause (a), (b) or (e) of the first paragraph above under "— Events of Default", holders of at least a majority, in aggregate principal amount of the debt securities of such series then outstanding make a written request upon the trustee to exercise its powers under such indenture, indemnify the trustee and afford the trustee reasonable opportunity to act. Notwithstanding the foregoing, the holder has an absolute right to receipt of the principal of, premium, if any, and interest when due on the debt securities, to require conversion of debt securities if such indenture provides for convertibility at the option of the holder and to institute suit for the enforcement thereof.

Consolidation, Merger and Sale of Assets

The indenture provides that the Company may not directly or indirectly consolidate with or merge with or into, or sell, assign, transfer, lease, convey or otherwise dispose of all or substantially all of its assets and properties and the assets and properties of its subsidiaries (taken as a whole) to another person in one or more related transactions unless the successor person is a person organized under the laws of any domestic jurisdiction and assumes the Company's obligations on the debt securities issued thereunder, and under the indenture, and after giving effect thereto no event of default, and no event that, after notice or lapse of time or both, would become an event of default, shall have occurred and be continuing, and that certain other conditions are met.

Certain Covenants

Payment of Principal, any Premium, Interest or Additional Amounts. The Company will duly and punctually pay the principal of, and premium and interest on or any additional amounts payable with respect to, any debt securities of any series in accordance with their terms.

Maintenance of Office or Agency. The Company will be required to maintain an office or agency in each place of payment for each series of debt securities for notice and demand purposes and for the purposes of presenting or surrendering debt securities for payment, registration of transfer, or exchange.

Reports. So long as any debt securities of a particular series are outstanding under the indenture, the Company will file with the trustee, within 30 days after the Company has filed the same with the SEC, unless such reports are available on the SEC's EDGAR filing system (or any successor thereto), copies of the annual reports and of the information, documents and other reports (or copies of such portions of any of the foregoing as the SEC may from time to time by rules and regulations prescribe), which the Company may be required to file with the SEC pursuant to Section 13 or Section 15(d) of the Exchange Act; or, if the Company is not required to file information, documents or reports pursuant to either of said Sections, then it shall file with the trustee and the SEC, in accordance with rules and regulations prescribed from time to time by the SEC, such of the supplementary and periodic information, documents and reports which may be required pursuant to Section 13 of the Exchange Act in respect of a security listed and registered on a national securities exchange as may be prescribed from time to time in such rules and regulations.

Additional Covenants. Any additional covenants of the Company with respect to any series of debt securities will be set forth in the applicable prospectus supplement, documents incorporated by reference or free writing prospectus relating thereto.

Conversion Rights

The terms and conditions, if any, upon which the debt securities are convertible into common stock or preferred stock will be set forth in the applicable prospectus supplement, documents incorporated by reference or free writing prospectus relating thereto. Such terms will include the conversion price (or manner of calculation thereof), the conversion period, provisions as to whether conversion will be at the option of the holders or the Company, the events requiring an adjustment of the conversion price and provisions affecting conversion in the event of redemption of such debt securities and any restrictions on conversion.

Redemption; Repurchase at the Option of the Holder; Sinking Fund

The terms and conditions, if any, upon which: (i) the debt securities are redeemable at the option of the Company; (ii) the holder of debt securities may cause the Company to repurchase such debt securities; or (iii) the debt securities are subject to any sinking fund will be set forth in the applicable prospectus supplement, documents incorporated by reference or free writing prospectus relating thereto.

Repurchases on the Open Market

The Company or any affiliate of the Company may at any time or from time to time repurchase any debt security in the open market or otherwise. Such debt securities may, at the option of the Company or the relevant affiliate of the Company, be held, resold or surrendered to the trustee for cancellation.

Discharge, Defeasance and Covenant Defeasance

The indenture provides, with respect to each series of debt securities issued thereunder, that the Company may satisfy and discharge its obligations under such debt securities of a series and such indenture with respect to debt securities of such series if:

(a) all debt securities of such series previously authenticated and delivered, with certain exceptions, have been accepted by the trustee for cancellation; or

(b) (i) the debt securities of such series have become due and payable, or mature within one year, or all of them are to be called for redemption within one year under arrangements satisfactory to the trustee for giving the notice of redemption and the Company irrevocably deposits in trust with the trustee, as trust funds solely for the benefit of the holders of such debt securities, for that purpose, money or governmental obligations or a combination thereof sufficient (in the opinion of a nationally recognized independent registered public accounting firm expressed in a written certification thereof delivered to the trustee) to pay the entire indebtedness on the debt securities of such series to maturity or redemption, as the case may be, and pays all other sums payable by it under such indenture; and

(ii) the Company delivers to the trustee an officers' certificate and an opinion of counsel, in each case stating that all conditions precedent provided for in such indenture relating to the satisfaction and discharge of such indenture with respect to the debt securities of such series have been complied with.

Notwithstanding such satisfaction and discharge, the obligations of the Company to compensate and indemnify the trustee, to pay additional amounts, if any, in respect of debt securities in certain circumstances and to convert or exchange debt securities pursuant to the terms thereof and the obligations of the Company and the trustee to hold funds in trust and to apply such funds pursuant to the terms of the indenture, with respect to issuing temporary debt securities, with respect to the registration, transfer and exchange of debt securities, with respect to the replacement of mutilated, destroyed, lost or stolen debt securities and with respect to the maintenance of an office or agency for payment, shall in each case survive such satisfaction and discharge.

Unless inapplicable to debt securities of a series pursuant to the terms thereof, the indenture provides that: (i) the Company will be deemed to have paid and will be discharged from any and all obligations in respect of the debt securities issued thereunder of any series, and the provisions of such indenture will, except as noted below, no longer be in effect with respect to the debt securities of such series ("defeasance"); and (ii) (1) the Company may omit to comply with the covenant described above under "— Consolidation, Merger and Sale of Assets" and any other additional covenants established pursuant to the terms of such series, and such omission shall be deemed not to be an event of default under clause (d) or (f) of the first paragraph of "— Events of Default" above and (2) the occurrence of any event described in clause (f) of the first paragraph of "— Events of Default" above shall not be deemed to be an event of default, in each case with respect to the outstanding debt securities of such series ((1) and (2) of this clause (ii), "covenant defeasance"); provided that the following conditions shall have been satisfied with respect to such series:

(a) the Company has irrevocably deposited in trust with the trustee as trust funds solely for the benefit of the holders of the debt securities of such series, for payment of the principal of and interest of the debt securities of such series, money or government obligations or a combination thereof sufficient (in the opinion of a nationally recognized independent registered public accounting firm expressed in a written certification thereof delivered to the trustee) without consideration of any reinvestment to pay and discharge the principal of and accrued interest on the outstanding debt securities of such series to maturity or earlier redemption (irrevocably provided for under arrangements satisfactory to the trustee), as the case may be;

(b) such defeasance or covenant defeasance will not result in a breach or violation of, or constitute a default under, such indenture or any other material agreement or instrument to which the Company is a party or by which it is bound;

(c) no event of default or event which with notice or lapse of time would become an event of default with respect to such debt securities of such series shall have occurred and be continuing on the date of such deposit;

(d) the Company shall have delivered to the trustee an opinion of counsel as described in the indenture to the effect that the holders of the debt securities of such series will not recognize income, gain or loss for Federal income tax purposes as a result of the Company's exercise of its option under this provision of such indenture and will be subject to federal income tax on the same amount and in the same manner and at the same times as would have been the case if such deposit and defeasance or covenant defeasance had not occurred;

(e) the Company has delivered to the trustee an officers' certificate and an opinion of counsel, in each case stating that all conditions precedent provided for in such indenture relating to the defeasance contemplated have been complied with;

(f) if the debt securities are to be redeemed prior to their maturity, notice of such redemption shall have been duly given or in another manner satisfactory to the trustee; and

(g) any such defeasance or covenant defeasance shall comply with any additional or substitute terms provided for by the terms of such debt securities of such series.

Notwithstanding a defeasance or covenant defeasance, the Company's obligations with respect to the following in respect of debt securities of such series will survive with respect to such securities until otherwise terminated or discharged under the terms of the indenture or no debt securities of such series are outstanding:

(a) the rights of holders of outstanding debt securities of such series to receive payments in respect of the principal of, interest on or premium or additional amounts, if any, payable in respect of, such debt securities when such payments are due from the trust referred in clause (a) in the preceding paragraph;

(b) the issuance of temporary debt securities, the registration, transfer and exchange of debt securities, the replacement of mutilated, destroyed, lost or stolen debt securities and the maintenance of an office or agency for payment and holding payments in trust;

(c) the rights, powers, trusts, duties and immunities of the trustee, and the Company's obligations in connection therewith; and

(d) the defeasance or covenant defeasance provisions of the indenture.

Applicable Law

The indenture provides that the debt securities and the indenture will be governed by and construed in accordance with the laws of the State of New York.

DESCRIPTION OF WARRANTS

General

We may issue warrants to purchase debt securities, common stock, preferred stock or any combination of these securities. We may issue the warrants independently or together with any underlying securities, and the warrants may be attached or separate from the underlying securities. We may also issue a series of warrants under a separate warrant agreement to be entered into between us and a warrant agent. The warrant agent will act solely as our agent in connection with the warrants of such series and will not assume any obligation or relationship of agency for or with holders or beneficial owners of warrants.

The following description is a summary of selected provisions relating to the warrants that we may issue. The summary is not complete. When warrants are offered in the future, a prospectus supplement, information incorporated by reference or a free writing prospectus, as applicable, will explain the particular terms of those securities and the extent to which these general provisions may apply. The specific terms of the warrants as described in a prospectus supplement, information incorporated by reference, or free writing prospectus will supplement and, if applicable, may modify or replace the general terms described in this section.

This summary and any description of warrants in the applicable prospectus supplement, information incorporated by reference or free writing prospectus is subject to and is qualified in its entirety by reference to all the provisions of any specific warrant document or agreement. We will file each of these documents, as applicable, with the SEC and incorporate them by reference as an exhibit to the registration statement of which this prospectus is a part on or before the time we issue a series of warrants. See "Where You Can Find Additional Information" and "Incorporation of Information by Reference" above for information on how to obtain a copy of a warrant document when it is filed.

When we refer to a series of warrants, we mean all warrants issued as part of the same series under the applicable warrant agreement.

Terms

The applicable prospectus supplement, information incorporated by reference or free writing prospectus, may describe the terms of any warrants that we may offer, including but not limited to the following:

- the title of the warrants;
- the total number of warrants;
- the price or prices at which the warrants will be issued;
- the price or prices at which the warrants may be exercised;
- the currency or currencies that investors may use to pay for the warrants;
- the date on which the right to exercise the warrants will commence and the date on which the right will expire;
- whether the warrants will be issued in registered form or bearer form;
- information with respect to book-entry procedures, if any;
- if applicable, the minimum or maximum amount of warrants that may be exercised at any one time;
- if applicable, the designation and terms of the underlying securities with which the warrants are issued and the number of warrants issued with each underlying security;
- if applicable, the date on and after which the warrants and the related underlying securities will be separately transferable;
- if applicable, a discussion of material United States federal income tax considerations;
- if applicable, the terms of redemption of the warrants;
- the identity of the warrant agent, if any;
- the procedures and conditions relating to the exercise of the warrants; and
- any other terms of the warrants, including terms, procedures, and limitations relating to the exchange and exercise of the warrants.

Warrant Agreements

We may issue the warrants in one or more series under one or more warrant agreements, each to be entered into between us and a bank, trust company, or other financial institution as warrant agent. We may add, replace, or terminate warrant agents from time to time. We may also choose to act as our own warrant agent or may choose one of our subsidiaries to do so.

The warrant agent under a warrant agreement will act solely as our agent in connection with the warrants issued under that agreement. Any holder of warrants may, without the consent of any other person, enforce by appropriate legal action, on its own behalf, its right to exercise those warrants in accordance with their terms.

Form, Exchange and Transfer

We may issue the warrants in registered form or bearer form. Warrants issued in registered form, i.e., book-entry form, will be represented by a global security registered in the name of a depository, which will be the holder of all the warrants represented by the global security. Those investors who own beneficial interests in a global warrant will do so through participants in the depository's system, and the rights of these indirect owners will be governed solely by the applicable procedures of the depository and its participants. In addition, we may issue warrants in non-global form, i.e., bearer form. If any warrants are issued in non-global form, warrant certificates may be exchanged for new warrant certificates of different denominations, and holders may exchange, transfer, or exercise their warrants at the warrant agent's office or any other office indicated in the applicable prospectus supplement, information incorporated by reference or free writing prospectus.

Prior to the exercise of their warrants, holders of warrants exercisable for debt securities will not have any of the rights of holders of the debt securities purchasable upon such exercise and will not be entitled to payments of principal (or premium, if any) or interest, if any, on the debt securities purchasable upon such exercise. Prior to the exercise of their warrants, holders of warrants exercisable for shares of preferred stock or common stock will not have any rights of holders of the preferred stock or common stock purchasable upon such exercise and will not be entitled to dividend payments, if any, or voting rights of the preferred stock or common stock purchasable upon such exercise.

Exercise of Warrants

A warrant will entitle the holder to purchase for cash an amount of securities at an exercise price that will be stated in, or that will be determinable as described in, the applicable prospectus supplement, information incorporated by reference or free writing prospectus. Warrants may be exercised at any time up to the close of business on the expiration date set forth in the applicable offering material. After the close of business on the expiration date, unexercised warrants will become void. Warrants may be redeemed as set forth in the applicable offering material.

Warrants may be exercised as set forth in the applicable offering material. Upon receipt of payment and the warrant certificate properly completed and duly executed at the corporate trust office of the warrant agent or any other office indicated in the applicable offering material, we will forward, as soon as practicable, the securities purchasable upon such exercise. If less than all of the warrants represented by such warrant certificate are exercised, a new warrant certificate will be issued for the remaining warrants.

DESCRIPTION OF RIGHTS

We may issue rights to purchase our debt securities, common stock, preferred stock or other securities. These rights may be issued independently or together with any other security offered hereby and may or may not be transferable by the stockholder receiving the rights in such offering. In connection with any offering of such

rights, we may enter into a standby arrangement with one or more underwriters or other purchasers pursuant to which the underwriters or other purchasers may be required to purchase any securities remaining unsubscribed for after such offering.

Each series of rights will be issued under a separate rights agreement which we will enter into with a bank or trust company, as rights agent, all which will be set forth in the relevant offering material. The rights agent will act solely as our agent in connection with the certificates relating to the rights and will not assume any obligation or relationship of agency or trust with any holders of rights certificates or beneficial owners of rights.

The following description is a summary of selected provisions relating to rights that we may offer. The summary is not complete. When rights are offered in the future, a prospectus supplement, information incorporated by reference or a free writing prospectus, as applicable, will explain the particular terms of those securities and the extent to which these general provisions may apply. The specific terms of the rights as described in a prospectus supplement, information incorporated by reference, or free writing prospectus will supplement and, if applicable, may modify or replace the general terms described in this section.

This summary and any description of rights in the applicable prospectus supplement, information incorporated by reference or free writing prospectus is subject to and is qualified in its entirety by reference to the rights agreement and the rights certificates. We will file each of these documents, as applicable, with the SEC and incorporate them by reference as an exhibit to the registration statement of which this prospectus is a part on or before the time we issue a series of rights. See “Where You Can Find Additional Information” and “Incorporation of Information by Reference” above for information on how to obtain a copy of a document when it is filed.

The applicable prospectus supplement, information incorporated by reference or free writing prospectus may describe:

- In the case of a distribution of rights to our stockholders, the date of determining the stockholders entitled to the rights distribution;
- In the case of a distribution of rights to our stockholders, the number of rights issued or to be issued to each stockholder;
- the exercise price payable for the underlying debt securities, common stock, preferred stock or other securities upon the exercise of the rights;
- the number and terms of the underlying debt securities, common stock, preferred stock or other securities which may be purchased per each right;
- the extent to which the rights are transferable;
- the date on which the holder’s ability to exercise the rights shall commence, and the date on which the rights shall expire;
- the extent to which the rights may include an over-subscription privilege with respect to unsubscribed securities;
- if applicable, the material terms of any standby underwriting or purchase arrangement entered into by us in connection with the offering of such rights; and
- any other terms of the rights, including, but not limited to, the terms, procedures, conditions and limitations relating to the exchange and exercise of the rights.

The provisions described in this section, as well as those described under “— Description of Debt Securities” and “— Description of Capital Stock” above, will apply, as applicable, to any rights we offer.

DESCRIPTION OF UNITS

We may issue units composed of any combination of our debt securities, common stock, preferred stock and warrants. We will issue each unit so that the holder of the unit is also the holder of each security included in the unit. As a result, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately, at any time or at any time before a specified date.

The following description is a summary of selected provisions relating to units that we may offer. The summary is not complete. When units are offered in the future, a prospectus supplement, information incorporated by reference or a free writing prospectus, as applicable, will explain the particular terms of those securities and the extent to which these general provisions may apply. The specific terms of the units as described in a prospectus supplement, information incorporated by reference, or free writing prospectus will supplement and, if applicable, may modify or replace the general terms described in this section.

This summary and any description of units in the applicable prospectus supplement, information incorporated by reference or free writing prospectus is subject to and is qualified in its entirety by reference to the unit agreement, collateral arrangements and depositary arrangements, if applicable. We will file each of these documents, as applicable, with the SEC and incorporate them by reference as an exhibit to the registration statement of which this prospectus is a part on or before the time we issue a series of units. See “Where You Can Find Additional Information” and “Incorporation of Information by Reference” above for information on how to obtain a copy of a document when it is filed.

The applicable prospectus supplement, information incorporated by reference or free writing prospectus may describe:

- the designation and terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any provisions for the issuance, payment, settlement, transfer, or exchange of the units or of the securities composing the units;
- whether the units will be issued in fully registered or global form; and
- any other terms of the units.

The applicable provisions described in this section, as well as those described under “— Description of Debt Securities,” “— Description of Capital Stock” and “— Description of Warrants” above, will apply to each unit and to each security included in each unit, respectively.

USE OF PROCEEDS

Unless otherwise indicated in the applicable prospectus supplement, information incorporated by reference or free writing prospectus, we intend to use the net proceeds from the sale of securities for general corporate purposes.

PLAN OF DISTRIBUTION

We may sell the securities offered by this prospectus from time to time in one or more transactions, including without limitation:

- through agents;
- to or through underwriters;

- through broker-dealers (acting as agent or principal);
- directly by us to purchasers (including our affiliates and stockholders), through a specific bidding or auction process, a rights offering, or otherwise;
- through a combination of any such methods of sale; or
- through any other methods described in a prospectus supplement.

The distribution of securities may be effected, from time to time, in one or more transactions, including:

- block transactions (which may involve crosses) and transactions on The NASDAQ Capital Market or any other organized market where the securities may be traded;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its own account pursuant to a prospectus supplement;
- ordinary brokerage transactions and transactions in which a broker-dealer solicits purchasers;
- sales "at the market" to or through a market maker or into an existing trading market, on an exchange or otherwise; and
- sales in other ways not involving market makers or established trading markets, including direct sales to purchasers.

The securities may be sold at a fixed price or prices, which may be changed, or at market prices prevailing at the time of sale, at prices relating to the prevailing market prices or at negotiated prices. The consideration may be cash or another form negotiated by the parties. Agents, underwriters or broker-dealers may be paid compensation for offering and selling the securities. That compensation may be in the form of discounts, concessions or commissions to be received from us or from the purchasers of the securities. Dealers and agents participating in the distribution of the securities may be deemed to be underwriters, and compensation received by them on resale of the securities may be deemed to be underwriting discounts and commissions under the Securities Act. If such dealers or agents were deemed to be underwriters, they may be subject to statutory liabilities under the Securities Act.

We may also make direct sales through subscription rights distributed to our existing stockholders on a pro rata basis, which may or may not be transferable. In any distribution of subscription rights to our stockholders, if all of the underlying securities are not subscribed for, we may then sell the unsubscribed securities directly to third parties or may engage the services of one or more underwriters, dealers or agents, including standby underwriters, to sell the unsubscribed securities to third parties.

Some or all of the securities that we offer through this prospectus may be new issues of securities with no established trading market. Any underwriters to whom we sell our securities for public offering and sale may make a market in those securities, but they will not be obligated to do so and they may discontinue any market making at any time without notice. Accordingly, we cannot assure you of the liquidity of, or continued trading markets for, any securities that we offer.

Agents may, from time to time, solicit offers to purchase the securities. If required, we will name in the applicable prospectus supplement, document incorporated by reference or free writing prospectus, as applicable, any agent involved in the offer or sale of the securities and set forth any compensation payable to the agent. Unless otherwise indicated, any agent will be acting on a best efforts basis for the period of its appointment. Any agent selling the securities covered by this prospectus may be deemed to be an underwriter of the securities.

If underwriters are used in an offering, securities will be acquired by the underwriters for their own account and may be resold, from time to time, in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale, or under delayed delivery contracts or

other contractual commitments. Securities may be offered to the public either through underwriting syndicates represented by one or more managing underwriters or directly by one or more firms acting as underwriters. If an underwriter or underwriters are used in the sale of securities, an underwriting agreement will be executed with the underwriter or underwriters at the time an agreement for the sale is reached. The applicable prospectus supplement will set forth the managing underwriter or underwriters, as well as any other underwriter or underwriters, with respect to a particular underwritten offering of securities, and will set forth the terms of the transactions, including compensation of the underwriters and dealers and the public offering price, if applicable. This prospectus, the applicable prospectus supplement and any applicable free writing prospectus will be used by the underwriters to resell the securities.

If a dealer is used in the sale of the securities, we, or an underwriter, will sell the securities to the dealer, as principal. The dealer may then resell the securities to the public at varying prices to be determined by the dealer at the time of resale. To the extent required, we will set forth in the prospectus supplement, document incorporated by reference or free writing prospectus, as applicable, the name of the dealer and the terms of the transactions.

We may directly solicit offers to purchase the securities and may make sales of securities directly to institutional investors or others. These persons may be deemed to be underwriters with respect to any resale of the securities. To the extent required, the prospectus supplement, document incorporated by reference or free writing prospectus, as applicable, will describe the terms of any such sales, including the terms of any bidding or auction process, if used.

Agents, underwriters and dealers may be entitled under agreements which may be entered into with us to indemnification by us against specified liabilities, including liabilities incurred under the Securities Act, or to contribution by us to payments they may be required to make in respect of such liabilities. If required, the prospectus supplement, document incorporated by reference or free writing prospectus, as applicable, will describe the terms and conditions of such indemnification or contribution. Some of the agents, underwriters or dealers, or their affiliates may be customers of, engage in transactions with or perform services for us or our subsidiaries or affiliates in the ordinary course of business.

Under the securities laws of some states, the securities offered by this prospectus may be sold in those states only through registered or licensed brokers or dealers.

Any person participating in the distribution of common stock registered under the registration statement that includes this prospectus will be subject to applicable provisions of the Exchange Act, and the applicable SEC rules and regulations, including, among others, Regulation M, which may limit the timing of purchases and sales of any of our common stock by any such person. Furthermore, Regulation M may restrict the ability of any person engaged in the distribution of our common stock to engage in market-making activities with respect to our common stock. These restrictions may affect the marketability of our common stock and the ability of any person or entity to engage in market-making activities with respect to our common stock.

Certain persons participating in an offering may engage in over-allotment, stabilizing transactions, short-covering transactions and penalty bids in accordance with Regulation M under the Exchange Act that stabilize, maintain or otherwise affect the price of the offered securities. If any such activities will occur, they will be described in the applicable prospectus supplement.

In compliance with the guidelines of the Financial Industry Regulatory Authority (“FINRA”), the aggregate maximum discount, commission or agency fees or other items constituting underwriting compensation to be received by any FINRA member or independent broker-dealer will not exceed 8% of any offering pursuant to this prospectus and any applicable prospectus supplement, as the case may be.

If more than 10% of the net proceeds of any offering of securities made under this prospectus will be received by FINRA members participating in the offering or affiliates or associated persons of such FINRA members, the offering will be conducted in accordance with FINRA Conduct Rule 5110(h).

So long as the aggregate market value of our voting and non-voting common equity held by non-affiliates is less than $75,000,000 and so long as required by the rules of the SEC, the amount of securities we may offer hereunder will be limited such that the aggregate market value of securities sold by us during a period of 12 calendar months cannot exceed one-third of the aggregate market value of the voting and non-voting common equity held by non-affiliates.

To the extent required, this prospectus may be amended or supplemented from time to time to describe a specific plan of distribution.

LEGAL MATTERS

Our counsel, Morrison & Foerster LLP, Palo Alto, California, will pass upon the validity of the securities offered hereby.

EXPERTS

The consolidated financial statements incorporated into this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2009 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in accounting and auditing.