ACELRX PHARMACEUTICALS INC
Form 424B4
February 11, 2011
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Filed pursuant to Rule 424(b)(4)
Registration No. 333-170594

8,000,000 Shares

ACELRX PHARMACEUTICALS, INC.

Common Stock

$5.00 per share

AcelRx Pharmaceuticals, Inc. is offering 8,000,000 shares.

The initial public offering price is $5.00 per share.

This is our initial public offering and no public market currently exists for our shares.

Our common stock has been approved for listing on the NASDAQ Global Market under the symbol ACRX .

This investment involves risk. See Risk Factors beginning on page 11.

	Per Share	Total
Public offering price	$ 5.00	$ 40,000,000
Underwriting discount from shares offered to the public	$ 0.35	$ 1,120,000
Proceeds, before expenses, to AcelRx Pharmaceuticals, Inc. from shares offered to the public	$ 4.65	$ 14,880,000
Underwriting discount from shares offered to certain of our current stockholders	$ 0.25	$ 1,200,000
Proceeds, before expenses, to AcelRx Pharmaceuticals, Inc. from shares offered to certain of our current stockholders	$ 4.75	$ 22,800,000

The underwriters have a 30-day option to purchase up to 1,200,000 additional shares of common stock from us to cover over-allotments, if any.

Entities affiliated with certain of our current stockholders have agreed to purchase an aggregate of 4,800,000 shares of common stock in this offering at the price offered to the public.

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

Piper Jaffray

Cowen and Company **Canaccord Genuity** **JMP Securities**

The date of this prospectus is February 11, 2011

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This product candidate has not been approved by the FDA. We have not generated any revenue from the sale of any of our product candidates.

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You should rely only on the information contained in this prospectus or any related free writing prospectus we may authorize to be delivered to you. We have not, and the underwriters have not, authorized anyone to provide you with information different from, or in addition to, that contained in this prospectus or any related free writing prospectus. If anyone provides you with different or inconsistent information, you should not rely on it. We are offering to sell, and are seeking offers to buy, shares of common stock only in jurisdictions where offers and sales are permitted. The information contained in this prospectus or any related free writing prospectus is accurate only as of its date, regardless of its time of delivery, or of any sale of the common stock. Our business, financial condition, results of operations and prospects may have changed since that date.

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Until and including March 8, 2011 (25 days after the date of this prospectus), all dealers that buy, sell or trade our common stock, whether or not participating in this offering, may be required to deliver a prospectus. This delivery requirement is in addition to the obligation of dealers to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

For investors outside of the United States: neither we nor any of the underwriters have done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. You are required to inform yourselves about and to observe any restrictions relating to this offering and the distribution of this prospectus.

Unless the context indicates otherwise, as used in this prospectus, the terms AcelRx, AcelRx Pharmaceuticals, we, us and our refer to AcelRx Pharmaceuticals, Inc. The name ACELRX is our trademark. We have a trademark application pending for the term, NANOTAB and for our tagline, ACCELERATE, INNOVATE, ALLEVIATE in Class 5, in the United States. This prospectus also contains trademarks and trade names that are the property of their respective owners.

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PROSPECTUS SUMMARY

The items in the following summary are described in more detail later in this prospectus. This summary provides an overview of selected information and does not contain all the information you should consider. Before you decide to invest in our common stock, you should read the entire prospectus carefully, including the Risk Factors and the financial statements and related notes included in this prospectus.

Overview

We are a specialty pharmaceutical company focused on the development and commercialization of innovative therapies for the treatment of acute and breakthrough pain. We were founded to solve the problems associated with post-operative intravenous patient-controlled analgesia, or IV PCA. Although widely used, IV PCA has been shown to cause harm to patients following surgery because of the side effects of morphine, the invasive IV route of delivery and the inherent potential for programming and delivery errors associated with the complexity of infusion pumps. We are preparing to initiate two Phase 3 clinical trials for our lead product candidate, the Sufentanil NanoTab PCA System, or ARX-01. The system is designed to address these problems by utilizing:

- sufentanil, a high therapeutic index opioid;
- NanoTabs, our proprietary, non-invasive sublingual dosage form; and
- our novel handheld PCA device that enables simple patient-controlled delivery of NanoTabs in the hospital setting and eliminates the risk of programming errors.

We have completed Phase 2 clinical development for two additional product candidates, the Sufentanil NanoTab BTP Management System, or ARX-02, for the treatment of cancer breakthrough pain, or BTP, and the Sufentanil/Triazolam NanoTab, or ARX-03, designed to provide mild sedation, anxiety reduction and pain relief for patients undergoing painful procedures in a physician s office.

Sufentanil NanoTabs

All of our product candidates utilize sufentanil in our proprietary, non-invasive NanoTab sublingual dosage form.

Sufentanil has many pharmacological advantages over other opioids. Sufentanil has a high therapeutic index, or the ratio of the toxic dose to the therapeutic dose of a drug, which is used as a measure of the relative safety of a drug for a particular treatment. Published studies demonstrate that sufentanil produces less respiratory depressive effects relative to its analgesic effects compared to other opioids, which correlates well with preclinical studies demonstrating sufentanil s high therapeutic index. The molecular attributes of sufentanil allow rapid cell membrane penetration and onset of action, which we believe make sufentanil an attractive opioid for the treatment of both acute and breakthrough pain. Although the analgesic efficacy and tolerability of sufentanil has been well established, its use has been limited due to a short duration of action when delivered intravenously and low gastrointestinal uptake when delivered orally.

We have demonstrated that sublingual delivery of sufentanil avoids the high peak plasma levels and short duration of action of IV administration, enabling potential for broader use. Our proprietary NanoTab dosage form is a very small disc-shaped tablet with a bioadhesive excipient, or inactive ingredient, that enables the NanoTab to adhere to mucosal tissues. This allows sublingual delivery of sufentanil from the NanoTab by adherence to the sublingual mucosa, or tissues under the tongue. The NanoTab adheres within seconds after administration and full disintegration occurs within minutes. The small size of the NanoTab is designed to minimize the saliva response and amount of sufentanil swallowed, resulting in high oral transmucosal uptake, whereby a majority of the drug is absorbed through the oral tissues directly into the bloodstream, and consistent pharmacokinetics.

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Our portfolio of product candidates leverages the inherent advantages of sufentanil that are underutilized in medical practice. We believe our non-invasive, proprietary NanoTab sublingual dosage form overcomes the limitations of the current treatment options available for both acute and breakthrough pain.

We have established and continue to build proprietary positions for our product candidates in the United States and internationally. We seek patent protection for compositions of matter related to NanoTabs, our formulations, our devices, the combination of our drugs and devices, and methods of treatment using these compositions. We have filed patent applications in the United States and internationally and have one issued patent in Europe. Our issued European patent, though granted, may be opposed by third parties during a nine-month opposition period that ends on April 21, 2011. If issued, we expect our patents will expire between 2027 and 2030.

Our Product Candidates

The following table summarizes key information about our existing product candidates. We currently hold worldwide commercialization rights to all of our product candidates.

Product Candidate	Description	Target Indication	Development Status
ARX-01	Sufentanil NanoTab PCA System	Acute post-operative pain	Three Phase 2 clinical trials and End of Phase 2 meeting successfully completed
			Two efficacy trials and one open label safety trial planned in Phase 3; the first efficacy trial and the open label safety trial are anticipated to begin in the second half of 2011
ARX-02	Sufentanil NanoTab BTP Management System	Cancer breakthrough pain	Phase 2 clinical trial and End of Phase 2 meeting successfully completed
			One efficacy trial and two open label safety trials planned in Phase 3
ARX-03	Sufentanil/Triazolam NanoTab	Mild sedation for painful procedures in a physician s office	Phase 2 clinical trial and End of Phase 2 meeting successfully completed
			Two efficacy trials planned in Phase 3

The Market Opportunity for Our Product Candidates

Acute Post-Operative Pain

The post-operative pain market in the United States, Europe and Japan is growing steadily and is expected to reach $6.5 billion by 2018. Despite its size, this market remains underserved. Studies report that up to 75% of patients experience inadequate pain relief after surgery. Inadequate pain relief can lead to decreased mobility, which increases the risks of other medical complications, including deep vein thrombosis and partial lung collapse, and can result in extended hospital stays.

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In the post-operative environment, the most common method for the treatment of acute pain is through IV PCA, in which patients self-dose by pushing a button to administer morphine via a programmable intravenous pump. Despite the common use of IV PCA, there are many deficiencies associated with this treatment that create a significant unmet medical need, including:

Drug-Related Side Effects. Morphine, the most commonly used opioid for post-operative pain control, can produce many side effects, such as excessive somnolence, delirium, oxygen desaturation and respiratory depression. Morphine has active metabolites, the compounds that are produced when the body breaks down, or metabolizes, morphine, which amplify these side effects.

Complications Associated with IV Delivery. IV PCA poses infection risk and creates opportunities for analgesic gaps due to dislodged catheters. Peripheral venous catheters have been associated with phlebitis and bacteremia. Catheter tubing tethering the patient to the PCA pump also hinders early post-operative mobility that can lead to increased post-operative complications.

Medication Delivery Errors. The complexity associated with ordering, dispensing, preparing, programming and administering the IV PCA pump results in many analgesia related errors. Human factors, such as programming the PCA pump, or administering the wrong dose, are among the most common and serious type of errors. According to published literature, the estimated annual error rate is 407 errors per 10,000 people treated with IV PCA in the United States. Published analysis of a national medication error-reporting program, or Medmarx, from 2000 to 2005 reveals that IV PCA errors represent a four-fold higher relative risk of harm compared to all other medication errors. The most recent published analysis of the FDA Manufacturer and User Facility Device Experience, or MAUDE, database reports that 5% of IV PCA operator errors reported during a two-year index period, from 2002 to 2003, resulted in patient deaths. Recently, the risks associated with the use of infusion pumps, such as those used in IV PCA, have been the subject of scrutiny by the FDA, resulting in a new initiative to address the safety problems associated with infusion pumps and the underreporting of errors.

Cancer Breakthrough Pain

Breakthrough pain is a common component of chronic pain and is characterized by its rapid onset, intensity and relatively short duration, which breaks through the analgesic effect of chronic pain medication. According to published data, in 2006 more than 700,000 cancer patients in the United States experienced breakthrough pain. Fentanyl-based products are the only medications indicated to treat cancer breakthrough pain and account for less than 20,000 prescriptions per month. We believe this demonstrates a need for additional and improved cancer breakthrough pain medications.

Currently available fentanyl-based cancer breakthrough pain products have limited ability to provide effective and focused pain relief because their average half-lives extend to 6 to 14 hours, which is significantly longer than the average 15 to 60 minute duration of a cancer breakthrough pain episode. Oral transmucosal fentanyl, unlike sufentanil, is swallowed and absorbed extensively through the gastrointestinal tract in addition to the oral mucosal tissue, leading to erratic and delayed timing to peak plasma levels, ranging from 20 to 240 minutes. In addition, we believe none of the currently approved cancer breakthrough pain products have effective deterrent features to address the problem of abuse and misuse of pain medication.

Mild Sedation for Painful Procedures in a Physician s Office

Each year in the United States, more than 100 million procedures take place in a physician s office. A substantial subset of these procedures are painful and anxiety inducing. Many practitioners do not

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provide any sedation or analgesic medications to their patients prior to or during short duration procedures, and instead rely solely on local anesthetic injections, which are often insufficient to provide effective pain relief and do not address patient anxiety.

ARX-01 Sufentanil NanoTab PCA System

ARX-01 is designed to avoid many of the limitations of IV PCA by delivering sufentanil, a high therapeutic index opioid, using our proprietary NanoTab sublingual tablet via a non-invasive, pre-programmed, handheld PCA device.

Sufentanil has one of the highest therapeutic indices of all commercially available opioids, making it an attractive candidate for the management of post-operative pain. Formulated in our proprietary sublingual NanoTab dosage form, sufentanil has relatively high bioavailability, with lower peak drug levels and a longer duration of action compared to IV delivery. Our novel handheld PCA device enables simple patient-controlled delivery of NanoTabs in the hospital setting. ARX-01 has the potential to address many of the key disadvantages of IV PCA by:

- reducing the incidence of drug related side effects;
- eliminating the risk of IV PCA related infections, reducing analgesic gaps and enhancing mobility; and
- eliminating the risk of programming errors.

We believe that ARX-01 will provide a favorable safety, efficacy and tolerability profile, enabling ARX-01 to become the new standard of care for patient-controlled analgesia.

We have completed three successful Phase 2 clinical trials of sufentanil NanoTabs in 212 patients in the post-operative setting and have completed an End of Phase 2 meeting with the FDA. Our Phase 2 studies for ARX-01 demonstrated analgesic efficacy, a low adverse event profile and excellent device functionality. Across all studies, the average time interval between doses was approximately 80 minutes, which compares favorably to typical redosing intervals for IV PCA, which have an average period between dosing of 20 to 40 minutes. The FDA stated that the demonstration of efficacy versus placebo in two Phase 3 studies with a total safety database of at least 600 patients exposed to the active drug, should suffice to support a new drug application, or NDA, for the treatment of acute post-operative pain.

We plan to conduct one Phase 3 trial to evaluate the efficacy of ARX-01 and one Phase 3 open-label active comparator study. Manufacturing scale up activities and Phase 3 clinical trial planning are ongoing to enable initiation and patient enrollment in our first two Phase 3 trials in the second half of 2011. We expect to receive top-line data from these two trials in the first half of 2012. Contingent on our ability to secure additional funding, we plan to begin a second Phase 3 efficacy study in the second half of 2012 and submit an NDA in 2013 if the results from these studies are positive.

ARX-02 Sufentanil NanoTab BTP Management System

ARX-02 is a potential new treatment option for cancer patients who suffer from breakthrough pain. ARX-02 is designed to avoid many of the limitations of currently available cancer breakthrough pain medications by combining the rapid onset and appropriate offset of sufentanil with abuse-deterrent packaging. The ARX-02 system consists of a magazine containing 30 single dose applicators. Each single dose applicator includes a sufentanil NanoTab that a patient can self-administer under their tongue for rapid transmucosal absorption.

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We have completed a Phase 2 study of the analgesic efficacy of the sufentanil NanoTab in adult cancer patients who are opioid tolerant and suffering from breakthrough pain events and have completed an End of Phase 2 meeting with the FDA. Our Phase 2 study for ARX-02 demonstrated analgesic efficacy versus placebo and a low adverse event profile. The FDA stated that the demonstration of efficacy versus placebo in a single Phase 3 study with a total safety database of 300 to 500 patients exposed to the active drug, with at least 100 patients treated for a minimum of three months, may support an indication for the treatment of breakthrough pain in cancer patients with underlying chronic pain.

Based on the availability of additional financial resources subsequent to this offering, we plan to conduct one Phase 3 efficacy study for ARX-02 and two open-label studies to demonstrate long term safety.

ARX-03 Sufentanil/Triazolam NanoTab

ARX-03 is a single, fixed-dose sublingual product candidate designed to provide non-invasive sedation, anxiety reduction and pain relief for patients prior to a painful procedure in a physician s office. ARX-03 is designed to eliminate the need for specialized personnel and requires only minimal monitoring equipment. We have completed a successful Phase 2 clinical trial of ARX-03 demonstrating rapid onset of mild sedation and reduction in anxiety in 15 to 30 minutes. We have preliminary guidance as to a clinical development path for this product as a result of completion of an End of Phase 2 meeting with the FDA.

Further development of ARX-03 will depend on the identification of a partner to support this effort.

Our Strategy

Our strategy is to develop and commercialize a portfolio of sufentanil NanoTab-based products in specialty markets. We have designed and are developing product candidates which have clearly defined clinical development programs, target large commercial market opportunities, and require modest commercial organizations in the United States. We selectively utilize third party contractors in order to maximize the capital efficiency of our development and commercialization efforts. We plan to enter into partnerships to market our product candidates outside the United States.

We intend to advance ARX-01 into two Phase 3 trials, and contingent on our ability to secure additional funding, we plan to complete the third ARX-01 Phase 3 clinical trial, submit an NDA and, if approved, to commercialize ARX-01 ourselves in the United States. Based on the availability of additional financial resources, we plan to advance ARX-02 into Phase 3 trials, submit an NDA and, if approved, commercialize ARX-02 ourselves or with a partner in the United States. Further development of ARX-03 will depend on the identification of a partner to support this effort.

Risks Associated with Our Business

Our business is subject to numerous risks, as more fully described in the section entitled Risk Factors immediately following this prospectus summary, beginning on page 11. You should read these risks before you invest in our common stock. We may be unable, for many reasons, including those that are beyond our control, to implement our business strategy. In particular, our risks include:

- We have incurred significant losses since our inception and anticipate that we will continue to incur significant losses for the foreseeable future.
- We have never generated any revenue and may never be profitable.
- If we fail to obtain additional financing, we would be forced to delay, reduce or eliminate our product development programs.

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We depend substantially on the success of our product candidate ARX-01, which is still under clinical development and may not receive regulatory approval or be successfully commercialized.

We depend substantially on the successful completion of Phase 3 clinical trials for our product candidates. The positive clinical results obtained for our product candidates in Phase 2 clinical studies may not be repeated in Phase 3.

Delays in clinical trials are common and have many causes, and any delay could result in increased costs to us and jeopardize or delay our ability to obtain regulatory approval and commence product sales.

Our product candidates may cause adverse effects or have other properties that could delay or prevent their regulatory approval or limit the scope of any approved label or market acceptance.

Our designs for the device components of our product candidates for Phase 3 clinical trials may not be fully functional or commercially viable.

The commercial success of ARX-01 and our other product candidates will depend upon the acceptance of these products by the medical community, including physicians, patients and health care payors.

We have numerous pending patent applications, but no issued patents in the United States, and the degree of future protection for our proprietary rights is uncertain.

Corporate Information

We were originally incorporated as SuRx, Inc. in Delaware on July 13, 2005. We subsequently changed our name to AcelRx Pharmaceuticals, Inc. on August 13, 2006. Our principal executive offices are located at 575 Chesapeake Drive, Redwood City, California 94063, and our telephone number is (650) 216-3500. Our website address is www.acelrx.com. The information contained in or that can be accessed through our website is not part of this prospectus.

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THE OFFERING

Common stock offered	8,000,000 shares
Over-allotment option	We have granted the underwriters an option for a period of 30 days to purchase up to 1,200,000 additional shares of common stock.
Common stock outstanding after the offering	19,371,750 shares
Use of proceeds	We intend to use the net proceeds from this offering of approximately $35.6 million, based on the initial public offering price of $5.00 per share, to fund two of our three planned ARX-01 Phase 3 clinical trials, and for working capital and other general corporate purposes. See Use of Proceeds on page 37.
NASDAQ Global Market symbol	ACRX
Risk factors	You should read the Risk Factors section of, and all of the other information set forth in, this prospectus for a discussion of factors to consider carefully before deciding to invest in shares of our common stock.

The number of shares of common stock outstanding immediately after this offering is based on 11,371,750 shares of common stock outstanding as of September 30, 2010. This number excludes:

- 1,892,860 shares of common stock issuable upon the exercise of stock options outstanding as of September 30, 2010 under our 2006 Stock Plan having a weighted average exercise price at September 30, 2010 of $1.88 per share (or $2.77 per share assuming that the December 2010 stock option modification described under Management s Discussion and Analysis of Financial Condition and Results of Operations Critical Accounting Policies and Estimates Stock-Based Compensation had occurred as of September 30, 2010);
- 167,630 shares of common stock reserved for future issuance under our 2006 Stock Plan as of September 30, 2010, which share reserve will become available for issuance under our 2011 Equity Incentive Plan upon the execution and delivery of the underwriting agreement for this offering;
- 231,678 shares of common stock issuable upon the exercise of warrants outstanding as of September 30, 2010 having a weighted average exercise price of $3.94 per share, which warrants are expected to remain outstanding upon completion of this offering;
- 1,875,000 shares of common stock (which will include the shares then reserved for issuance under our 2006 Stock Plan at the time of the execution and delivery of the underwriting agreement for this offering) reserved for future issuance under our 2011

Equity Incentive Plan, which will become effective immediately upon the execution and delivery of the underwriting agreement for this offering, as well as any future increases in the number of shares of common stock reserved for issuance under this plan; and

250,000 shares of common stock reserved for future issuance under our 2011 Employee Stock Purchase Plan, which will become effective immediately upon the execution and delivery of the underwriting agreement for this offering, as well as any future increases in the number of shares of common stock reserved for issuance under this plan.

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Unless otherwise indicated, all information in this prospectus assumes or gives effect to:

- a 1-for-4 reverse stock split of our common stock and preferred stock that became effective on January 28, 2011;
- the automatic conversion of all outstanding shares of our convertible preferred stock into an aggregate of 8,555,713 shares of common stock upon completion of this offering;
- the exercise, on a net issuance basis, of warrants outstanding as of September 30, 2010 that we issued in connection with a bridge loan financing in September 2010, or the 2010 warrants, which will be exercisable for shares of our Series C convertible preferred stock immediately prior to this offering, and the concomitant conversion of the shares of Series C convertible preferred stock acquired upon exercise into 107,246 shares of common stock upon completion of this offering, based on the initial public offering price of $5.00 per share;
- the automatic conversion of our remaining warrants to purchase convertible preferred stock, which warrants are expected to remain outstanding upon completion of this offering, into warrants to purchase an aggregate of 231,678 shares of common stock upon completion of this offering;
- the automatic conversion of the principal and accrued interest outstanding under our $8.0 million in aggregate principal amount of convertible promissory notes into 2,034,438 shares of common stock immediately prior to the closing of this offering at a conversion price equal to 80% of the initial public offering price, based on the initial public offering price of $5.00 per share and assuming the conversion occurs on February 16, 2011, the expected closing date of this offering;
- the filing of our amended and restated certificate of incorporation, which will occur immediately prior to the completion of this offering; and
- no exercise of the underwriters over-allotment option.

Because the number of shares that will be issued upon conversion of the 2010 notes depends upon the actual closing date of this offering, the actual number of shares issuable upon such conversion may differ from the number of shares set forth above.

Entities affiliated with Three Arch Partners, Skyline Venture Partners, Alta Partners and Kaiser Foundation Hospitals, each of which is a current stockholder, have agreed to purchase an aggregate of 4,800,000 shares of common stock in this offering, at the price offered to the public. The underwriters will receive an underwriting discount of $0.25 per share on sales of shares to these entities.

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SUMMARY FINANCIAL DATA

The following table summarizes our financial data. We have derived the following summary statement of operations data for the years ended December 31, 2007, 2008 and 2009 from our audited financial statements included elsewhere in this prospectus. The summary statement of operations data for the nine months ended September 30, 2009 and 2010 and the balance sheet data as of September 30, 2010 have been derived from our unaudited interim financial statements included elsewhere in this prospectus. The unaudited interim financial results have been prepared on the same basis as the audited financial statements and reflect all adjustments necessary to fairly reflect our financial position as of September 30, 2010 and results of operations for the nine months ended September 30, 2009 and 2010. Our historical results are not necessarily indicative of the results that may be expected in the future. The following summary financial data should be read in conjunction with Management s Discussion and Analysis of Financial Condition and Results of Operations and our financial statements and related notes included elsewhere in this prospectus.

	Year Ended December 31,			Nine Months Ended September 30,	
	2007	2008	2009	2009	2010
				(Unaudited)	
	(in thousands, except share and per share data)				
Statement of Operations Data:					
Operating Expenses:					
Research and development	$ 8,209	$ 18,325	$ 15,502	$ 13,180	$ 6,309
General and administrative	2,082	2,365	3,529	2,510	3,033
Total operating expenses	10,291	20,690	19,031	15,690	9,342
Loss from operations	(10,291)	(20,690)	(19,031)	(15,690)	(9,342)
Interest income	687	484	33	37	2
Interest expense	(25)	(404)	(1,242)	(965)	(656)
Other income (expense), net	(1)	(52)	121	196	(825)
Loss before provision for income taxes	(9,630)	(20,662)	(20,119)	(16,422)	(10,821)
Provision for income taxes					
Net loss	$ (9,630)	$ (20,662)	$ (20,119)	$ (16,422)	$ (10,821)
Net loss per share of common stock, basic and diluted	$ (26.45)	$ (43.69)	$ (34.93)	$ (29.09)	$ (16.63)
Shares used in computing net loss per share of common stock, basic and diluted	364,039	472,914	576,021	564,571	650,774
Pro forma net loss per share of common stock, basic and diluted (unaudited)[1]			$ (3.51)		$ (1.09)
Shares used in computing pro forma net loss per share of common stock, basic and diluted (unaudited)[1]			5,746,372		9,204,999

[1] See Note 11 of the audited financial statements included elsewhere in this prospectus for a discussion regarding the calculations for the net loss per share and the pro forma net loss per share and the shares used in these calculations.

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	As of September 30, 2010		
	Actual	Pro Forma (Unaudited) (in thousands)	Pro Forma as Adjusted
Balance Sheet Data:			
Cash, cash equivalents and short-term investments	$8,082	$ 8,082	$ 43,722
Working capital (deficit)	(1,894)	2,709	38,349
Total assets	9,786	9,786	45,426
Total debt, including convertible notes	10,985	6,382	6,382
Convertible preferred stock warrant liability	2,219		
Convertible preferred stock	55,941		
Total stockholders equity (deficit)	(60,986)	2,253	37,893

The pro forma column in the balance sheet data above gives effect to the following transactions and adjustments as if they had occurred as of September 30, 2010:

(1) the automatic conversion of all outstanding shares of our convertible preferred stock into an aggregate of 8,555,713 shares of common stock upon completion of this offering;

(2) the exercise, on a net issuance basis, of warrants outstanding as of September 30, 2010 that we issued in connection with a bridge loan financing in September 2010, or the 2010 warrants, which will be exercisable for shares of our Series C convertible preferred stock immediately prior to this offering, and the concomitant conversion of the shares of Series C convertible preferred stock acquired upon exercise into 107,246 shares of common stock upon completion of this offering, based on the initial public offering price of $5.00 per share;

(3) the automatic conversion of our remaining warrants to purchase convertible preferred stock, which warrants are expected to remain outstanding upon the completion of this offering, into warrants to purchase an aggregate of 231,678 shares of common stock upon completion of this offering;

(4) the reclassification of the liability associated with the warrants to purchase convertible preferred stock to additional paid-in capital; and

(5) the automatic conversion of the principal and accrued interest outstanding under our $8.0 million in aggregate principal amount of convertible promissory notes, or the 2010 notes, into 2,034,438 shares of common stock immediately prior to the closing of this offering at a conversion price equal to 80% of the initial public offering price, based on the initial public offering price of $5.00 per share and assuming the conversion occurs on February 16, 2011, and the reclassification of the convertible note liability to common stock and additional paid-in capital in connection with the conversion.

The pro forma as adjusted column in the balance sheet data above gives further effect to the sale of 8,000,000 shares of common stock in this offering at the initial public offering price of $5.00 per share, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, as if the sale of the shares in this offering had occurred as of September 30, 2010.

Because the number of shares of common stock that will be issued upon conversion of the 2010 notes depends upon the actual closing date of this offering, the actual number of shares issuable upon such conversion may differ from the number of shares set forth above. See Prospectus

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RISK FACTORS

Before you decide to invest in our common stock, you should consider carefully the risks described below, together with the other information contained in this prospectus. We believe the risks described below are the risks that are material to us as of the date of this prospectus. If any of the following risks comes to fruition, our business, financial condition, results of operations and future growth prospects would likely be materially and adversely affected. In these circumstances, the market price of our common stock could decline, and you may lose all or part of your investment.

Risks Related to Our Financial Condition and Need for Additional Capital

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

We are a development stage company with limited operating history. To date, we have focused primarily on developing our lead product candidate, the Sufentanil NanoTab PCA System, or ARX-01. We have two additional product candidates, the Sufentanil NanoTab BTP Management System, or ARX-02, and the Sufentanil/Triazolam NanoTab, or ARX-03. We have incurred significant net losses in each year since our inception in July 2005, including net losses of approximately $9.6 million, $20.7 million, $20.1 million and $10.8 million for fiscal years 2007, 2008, 2009 and for the nine months ended September 30, 2010, respectively. As of September 30, 2010, we had an accumulated deficit of $65.0 million.

We have devoted most of our financial resources to research and development, including our non-clinical development activities and clinical trials. To date, we have financed our operations exclusively through the sale of equity securities and debt. The size of our future net losses will depend, in part, on the rate of future expenditures and our ability to generate revenues. To date, none of our product candidates have been commercialized, and if our product candidates are not successfully developed or commercialized, or if revenues are insufficient following marketing approval, we will not achieve profitability and our business may fail. Even if we successfully obtain regulatory approval to market our product candidates in the United States, our revenues are also dependent upon the size of the markets outside of the United States, as well as our ability to obtain market approval and achieve commercial success.

We expect to continue to incur substantial and increased expenses as we expand our research and development activities and advance our clinical programs. We also expect an increase in our expenses associated with preparing for the potential commercialization of ARX-01 and creating additional infrastructure to support operations as a public company. As a result of the foregoing, we expect to continue to incur significant and increasing losses and negative cash flows for the foreseeable future.

We have never generated any revenue and may never be profitable.

Our ability to generate revenue and achieve profitability depends on our ability, alone or with collaborators, to successfully complete the development, obtain the necessary regulatory approvals and commercialize our product candidates. We do not anticipate generating revenues from sales of our product candidates for the foreseeable future, if ever. Our ability to generate future revenues from product sales depends heavily on our success in:

- completing the clinical development of ARX-01, initially for the treatment of post-operative pain in the hospital setting;
- obtaining regulatory approval for ARX-01;
- launching and commercializing ARX-01, including building a hospital-directed sales force and collaborating with third parties; and
- completing the clinical development, obtaining regulatory approval, launching and commercializing ARX-02 and ARX-03, which will require additional funding.

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Because of the numerous risks and uncertainties associated with pharmaceutical product development, we are unable to predict the timing or amount of increased expenses, when, or if, we will be able to achieve or maintain profitability. In addition, our expenses could increase beyond expectations if we are required by the FDA to perform studies in addition to those that we currently anticipate.

Even if one or more of our product candidates is approved for commercial sale, we anticipate incurring significant costs associated with commercializing any approved product candidate. Even if we are able to generate revenues from the sale of our products, we may not become profitable and may need to obtain additional funding to continue operations.

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

We were incorporated in 2005. Since inception, our operations have been primarily limited to organizing and staffing our company, developing our technology and undertaking preclinical studies and clinical trials for our product candidates. We have not yet obtained regulatory approval for any of our product candidates. Consequently, any predictions you make about our future success or viability or evaluation of our business and prospects may not be accurate.

If we fail to obtain additional financing, we would be forced to delay, reduce or eliminate our product development programs.

Developing pharmaceutical products, including conducting preclinical studies and clinical trials, is expensive. We expect our research and development expenses to substantially increase in connection with our ongoing activities, particularly as we advance our clinical programs. As of September 30, 2010, we had negative working capital of approximately $1.9 million, and our audit report in our 2009 financial statements contains an explanatory paragraph stating that our recurring losses from operations and cash used in operating activities raise substantial doubt about our ability to continue as a going concern. If we are unable to successfully complete this offering, we will need to seek alternative financing or operational plans to continue as a going concern. Even if the offering is successful, we will need to raise additional funds to support our operations, and such funding may not be available to us on acceptable terms, or at all.

We estimate that the net proceeds from this offering will be approximately $35.6 million, based on the initial public offering price of $5.00 per share, after deducting underwriting discounts and commissions and estimated offering expenses payable by us. We expect that the net proceeds from this offering and our existing cash and cash equivalents, together with interest, will be sufficient to fund our current operations through the second quarter of 2012. However, changing circumstances beyond our control may cause us to consume capital more rapidly than we currently anticipate. For example, our clinical trials may encounter technical, enrollment or other difficulties that could increase our development costs more than we expected. We will need to raise additional funding or otherwise enter into collaborations to complete the third ARX-01 Phase 3 clinical trial required to file our NDA and, if we choose, to initiate clinical trials for our product candidates other than ARX-01. In any event, we will require additional capital to obtain regulatory approval for, and to commercialize, our product candidates. Raising funds in the current economic environment, when the capital markets have been affected by the global recession, may present additional challenges.

Securing additional financing may divert our management from our day-to-day activities, which may adversely affect our ability to develop and commercialize our product candidates. In addition, we cannot guarantee that future financing will be available in sufficient amounts or on terms acceptable to us, if at all. If we are unable to raise additional capital when required or on acceptable terms, we may be required to:

- significantly delay, scale back or discontinue the development or commercialization of our product candidates;

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- seek corporate partners for ARX-01 at an earlier stage than otherwise would be desirable or on terms that are less favorable than might otherwise be available; or

- relinquish or license on unfavorable terms, our rights to technologies or product candidates that we otherwise would seek to develop or commercialize ourselves.

If we are unable to raise additional capital in sufficient amounts or on terms acceptable to us, we will be prevented from pursuing development and commercialization efforts, including completing the third ARX-01 Phase 3 clinical trial required to file our NDA, which will have a material adverse effect on our business, operating results and prospects.

We might be unable to service our current debt due to a lack of cash flow and might be subject to default.

Pursuant to the loan agreement with Pinnacle Ventures L.L.C., or Pinnacle, we granted to Pinnacle a first priority security interest in substantially all of our assets, with the exception of our intellectual property, where the security interest is limited to proceeds of intellectual property. As of September 30, 2010, we had $6.4 million of outstanding debt under the Pinnacle loan agreement. Under the terms of this agreement, we are required to make monthly payments of approximately $442,000 on the first day of each month through November 1, 2011, the maturity date of the loan, with an additional final interest payment of $600,000 due on November 1, 2011. The loan carries an 8.5% annual interest rate. If we do not make the required payments when due, either at maturity, or at applicable installment payment dates, if we breach the agreement or become insolvent, Pinnacle could elect to declare all amounts outstanding, together with accrued and unpaid interest and penalty, to be immediately due and payable. Even if we were able to prepay the full amount in cash, any such repayment could leave us with little or no working capital for our business. If we are unable to repay those amounts, Pinnacle will have a first claim on our assets pledged under the loan agreement. If Pinnacle should attempt to foreclose on the collateral, it is unlikely that there would be any assets remaining after repayment in full of such secured indebtedness. Any default under the loan agreement and resulting foreclosure would have a material adverse effect on our financial condition and our ability to continue our operations.

We may sell additional equity or debt securities to fund our operations, which may result in dilution to our stockholders and impose restrictions on our business.

In order to raise additional funds to support our operations, we may sell additional equity or debt securities, which would result in dilution to all of our stockholders or impose restrictive covenants that adversely impact our business. The sale of additional equity or convertible debt securities would result in the issuance of additional shares of our capital stock and dilution to all of our stockholders. The incurrence of indebtedness would result in increased fixed payment obligations and could also result in certain restrictive covenants, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. If we are unable to expand our operations or otherwise capitalize on our business opportunities, our business, financial condition and results of operations could be materially adversely affected and we may not be able to meet our debt service obligations.

Risks Related to Clinical Development and Regulatory Approval

We depend substantially on the success of our product candidate, ARX-01, which is still under clinical development, and may not obtain regulatory approval or be successfully commercialized.

We have not marketed, distributed or sold any products. The success of our business depends primarily upon our ability to develop and commercialize ARX-01, which has completed Phase 2 clinical trials for the treatment of post-operative pain. We expect to initiate two of the three planned Phase 3 clinical trials for ARX-01 in the second half of 2011. Contingent on our ability to secure additional funding, we plan

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to begin a third Phase 3 clinical trial in the second half of 2012. We intend to use these trials as a basis to submit an NDA for ARX-01. There is no guarantee that our Phase 3 clinical trials will be completed, or if completed, will be successful.

Any delay in obtaining, or inability to obtain, regulatory approval would prevent us from commercializing ARX-01, generating revenues and achieving profitability. If any of these events occur, we may be forced to abandon our development efforts for ARX-01, which would have a material adverse effect on our business and could potentially cause us to cease operations.

We depend substantially on the successful completion of Phase 3 clinical trials for our product candidates. The positive clinical results obtained for our product candidates in Phase 2 clinical studies may not be repeated in Phase 3.

We have completed Phase 2 clinical studies and participated in an End of Phase 2 meeting for each of our three product candidates. However, we have never conducted a Phase 3 clinical trial. Our product candidates are subject to the risks of failure inherent in pharmaceutical and medical device development. Before obtaining regulatory approval for the commercial sale of any product candidate, we must successfully complete Phase 3 clinical trials. Negative or inconclusive results of a Phase 3 clinical study could cause the FDA to require that we repeat it or conduct additional clinical studies. Furthermore, while we have obtained positive safety and efficacy results for our sufentanil-based product candidates during our prior clinical trials, we cannot be certain that these results will be duplicated when our product candidates are tested in a larger number of patients in our Phase 3 clinical trials.

Delays in clinical trials are common and have many causes, and any delay could result in increased costs to us and jeopardize or delay our ability to obtain regulatory approval and commence product sales.

We may experience delays in clinical trials of our product candidates. We expect to initiate two of the three planned Phase 3 clinical trials of ARX-01 in the second half of 2011. Our planned clinical trials may not begin on time, have an effective design, enroll a sufficient number of patients, or be completed on schedule, if at all. Our clinical trials can be delayed for a variety of reasons, including:

- inability to raise funding necessary to initiate or continue a trial, including the inability to secure additional funding to complete the third ARX-01 Phase 3 clinical trial required to file our NDA;
- delays in pharmacokinetic studies required prior to Phase 3 initiation;
- delays in obtaining regulatory approval to commence a trial;
- delays in reaching agreement with the FDA on final trial design;
- imposition of a clinical hold following an inspection of our clinical trial operations or trial sites by the FDA or other regulatory authorities;
- delays in reaching agreement on acceptable terms with prospective contract research organizations, or CROs, and clinical trial sites;
- delays in obtaining required institutional review board approval at each site;
- delays in recruiting suitable patients to participate in a trial;

delays in the testing, validation, manufacturing and delivery of the device components of our product candidates;

delays in having patients complete participation in a trial or return for post-treatment follow-up;

clinical sites dropping out of a trial to the detriment of enrollment;

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time required to add new clinical sites; or

delays by our contract manufacturers to produce and deliver sufficient supply of clinical trial materials.

If initiation or completion of the Phase 3 trials are delayed for our product candidates for any of the above reasons, our development costs may increase, our approval process could be delayed and our ability to commercialize and commence sales of our product candidates could be materially harmed, which could have a material adverse effect on our business.

Our product candidates may cause adverse effects or have other properties that could delay or prevent their regulatory approval or limit the scope of any approved label or market acceptance.

Adverse events, or AEs, caused by our product candidates could cause us, other reviewing entities, clinical study sites or regulatory authorities to interrupt, delay or halt clinical studies and could result in the denial of regulatory approval. Phase 2 clinical studies conducted by us with our product candidates have generated some AEs, but no serious adverse events, or SAEs. For example, in ARX-01 clinical studies completed to date, 11% of the patients experienced vomiting and 8% experienced itching for 10 mcg and 15 mcg treated groups, as compared to the placebo treated subjects, of which 6% experienced vomiting and none experienced itching. If SAEs are observed in any of our clinical studies, our ability to obtain regulatory approval for our product candidates may be adversely impacted.

Further, if our products cause serious or unexpected side effects after receiving market approval, a number of potentially significant negative consequences could result, including:

regulatory authorities may withdraw their approval of the product or impose restrictions on its distribution in a form of a modified Risk Evaluation and Mitigation Strategy, or REMS;

regulatory authorities may require the addition of labeling statements, such as warnings or contraindications;

we may be required to change the way the product is administered or conduct additional clinical studies;

we could be sued and held liable for harm caused to patients; or

our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the affected product candidate and could substantially increase the costs of commercializing our product candidates.

Additional time may be required to obtain regulatory approval for our ARX-01 product candidate because it is a drug/device combination.

ARX-01 is a drug/device combination. We have filed an IND for ARX-01. Based on our discussions with the FDA, we believe that ARX-01 will be reviewed as a combination product, with both drug and device components submitted in the IND, and both components will eventually be part of an NDA. There are very few examples of the FDA approval process for drug/device combination products such as ARX-01. As a result, we may experience delays in regulatory approval for ARX-01 due to uncertainties in the approval process, in particular as it relates to device approval under an NDA.

After the completion of our clinical trials, we cannot predict whether or when we will obtain regulatory approval to commercialize ARX-01 and we cannot, therefore, predict the timing of any future revenue from ARX-01.

We cannot commercialize ARX-01 until the appropriate regulatory authorities, such as the FDA, have reviewed and approved the product candidate. The regulatory agencies may not complete their review

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processes in a timely manner, or we may not be able to obtain regulatory approval for ARX-01. Additional delays may result if ARX-01 is taken before an FDA Advisory Committee which may recommend restrictions on approval or recommend non-approval. In addition, we may experience delays or rejections based upon additional government regulation from future legislation or administrative action, or changes in regulatory agency policy during the period of product development, clinical studies and the review process.

Even if we obtain regulatory approval for ARX-01 and our other product candidates, we will still face extensive regulatory requirements and our products may face future development and regulatory difficulties.

Even if we obtain regulatory approval in the United States, the FDA may still impose significant restrictions on the indicated uses or marketing of our product candidates, or impose ongoing requirements for potentially costly post-approval studies or post-market surveillance. For example, the labeling ultimately approved for ARX-01 and our other product candidates will likely include restrictions on use due to the opiate nature of sufentanil. ARX-01 and our other product candidates will also be subject to ongoing FDA requirements governing the labeling, packaging, storage, distribution, safety surveillance, advertising, promotion, record-keeping and reporting of safety and other post-market information. The holder of an approved NDA is obligated to monitor and report AEs and any failure of a product to meet the specifications in the NDA. The holder of an approved NDA must also submit new or supplemental applications and obtain FDA approval for certain changes to the approved product, product labeling or manufacturing process. Advertising and promotional materials must comply with FDA rules and are subject to FDA review, in addition to other potentially applicable federal and state laws.

In addition, manufacturers of drug products and their facilities are subject to payment of user fees and continual review and periodic inspections by the FDA and other regulatory authorities for compliance with current good manufacturing practices, or cGMP, and adherence to commitments made in the NDA. If we, or a regulatory agency discovers previously unknown problems with a product, such as AEs of unanticipated severity or frequency, or problems with the facility where the product is manufactured, a regulatory agency may impose restrictions relative to that product or the manufacturing facility, including requiring recall or withdrawal of the product from the market or suspension of manufacturing.

If we fail to comply with applicable regulatory requirements following approval of our product candidate, a regulatory agency may:

- issue a warning letter asserting that we are in violation of the law;
- seek an injunction or impose civil or criminal penalties or monetary fines;
- suspend or withdraw regulatory approval;
- suspend any ongoing clinical trials;
- refuse to approve a pending NDA or supplements to an NDA submitted by us;
- seize product; or
- refuse to allow us to enter into supply contracts, including government contracts.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response and could generate negative publicity. The occurrence of any event or penalty described above may inhibit our ability to commercialize our products and generate revenues.

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Even if we obtain FDA approval for ARX-01 in the United States, we may never obtain approval for or commercialize our products outside of the United States, which would limit our ability to realize their full market potential.

In order to market any products outside of the United States, we must establish and comply with numerous and varying regulatory requirements of other countries regarding safety and efficacy. Clinical trials conducted in one country may not be accepted by regulatory authorities in other countries, and regulatory approval in one country does not mean that regulatory approval will be obtained in any other country. Approval processes vary among countries and can involve additional product testing and validation and additional administrative review periods. Seeking foreign regulatory approval could result in difficulties and costs for us and require additional non-clinical studies or clinical trials which could be costly and time consuming. Regulatory requirements can vary widely from country to country and could delay or prevent the introduction of our products in those countries. We do not have any product candidates approved for sale in any jurisdiction, including international markets, and we do not have experience in obtaining regulatory approval in international markets. If we fail to comply with regulatory requirements in international markets or to obtain and maintain required approvals, or if regulatory approval in international markets are delayed, our target market will be reduced and our ability to realize the full market potential of our products will be harmed.

ARX-01 and our other product candidates will require Risk Evaluation and Mitigation Strategies.

The FDA Amendments Act of 2007 implemented safety-related changes to product labeling and require the adoption of REMS. Our product candidates will require REMS. The REMS may include requirements for special labeling or medication guides for patients, special communication plans to health care professionals and restrictions on distribution and use. While we have received information from the FDA regarding certain aspects of the required REMS for ARX-01, we cannot predict the specific REMS to be required as part of the FDA s approval of ARX-01. Depending on the extent of the REMS requirements, our costs to commercialize ARX-01 may increase significantly. ARX-02 and ARX-03, if approved, will also require REMS programs that may increase our costs to commercialize these product candidates. Furthermore, risks of sufentanil that are not adequately addressed through proposed REMS for our product candidates may also prevent or delay their approval for commercialization.

Risks Related to Our Reliance on Third Parties

We rely on third party manufacturers to produce our preclinical and clinical drug supplies, and we intend to rely on third parties to produce commercial supplies of any approved product candidates.

Reliance on third party manufacturers entails risks to which we would not be subject if we manufactured the pharmaceutical, device and drug cartridge aspects of our product candidates ourselves, including:

- the inability to meet our product specifications and quality requirements consistently;
- a delay or inability to procure or expand sufficient manufacturing capacity;
- manufacturing and product quality issues related to scale-up of manufacturing;
- costs and validation of new equipment and facilities required for scale-up;
- a failure to comply with cGMP and similar foreign standards;
- the inability to negotiate manufacturing agreements with third parties under commercially reasonable terms;

termination or nonrenewal of manufacturing agreements with third parties in a manner or at a time that is costly or damaging to us;

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- the reliance on a limited number of sources, and in some cases, single sources for product components, such that if we are unable to secure a sufficient supply of these product components, we will be unable to manufacture and sell our product candidates in a timely fashion, in sufficient quantities or under acceptable terms;

- the lack of qualified backup suppliers for those components that are currently purchased from a sole or single source supplier;

- operations of our third party manufacturers or suppliers could be disrupted by conditions unrelated to our business or operations, including the bankruptcy of the manufacturer or supplier;

- carrier disruptions or increased costs that are beyond our control; and

- the failure to deliver our products under specified storage conditions and in a timely manner.

Any of these events could lead to clinical study delays, failure to obtain regulatory approval or impact our ability to successfully commercialize our products. Some of these events could be the basis for FDA action, including injunction, recall, seizure, or total or partial suspension of production.

We rely on limited sources of supply for the drug component of our product candidates and any disruption in the chain of supply may cause delay in developing and commercializing our product candidates.

Currently we use two established suppliers of sufentanil citrate for our NanoTabs, Covidien plc and Johnson Matthey plc. For each product candidate, only one of the two suppliers will be qualified as a vendor with the FDA. If supply from the approved vendor is interrupted, there could be a significant disruption in commercial supply. The alternative vendor would need to be qualified through an NDA supplement which could result in further delay. The FDA or other regulatory agencies outside of the United States may also require additional studies if a new sufentanil supplier is relied upon for commercial production. In addition, the Drug Enforcement Administration, or the DEA, may reduce, delay or refuse our quota for sufentanil, which would disrupt our supply of sufentanil citrate and cause delay in the development and commercialization of our product candidates.

Currently, we use one supplier of triazolam for our ARX-03 NanoTabs. Switching triazolam suppliers may involve substantial cost and is a likely to result in a delay in our desired clinical and commercial timelines.

These factors could cause the delay of clinical trials, regulatory submissions, required approvals or commercialization of our product candidates, cause us to incur higher costs and prevent us from commercializing them successfully. Furthermore, if our suppliers fail to deliver the required commercial quantities of active pharmaceutical ingredient on a timely basis and at commercially reasonable prices, and we are unable to secure one or more replacement suppliers capable of production at a substantially equivalent cost, our clinical trials may be delayed or we could lose potential revenue.

Manufacture of sufentanil NanoTabs requires specialized equipment and expertise.

Ethanol, which is used in the manufacturing process, is flammable, which necessitates the use of specialized equipment and facilities for manufacture of sufentanil NanoTabs. There are a limited number of facilities that can accommodate our manufacturing process and we need to use dedicated equipment throughout development and commercial manufacturing to avoid the possibility of cross-contamination. If our equipment breaks down or needs to be repaired or replaced, it may cause significant disruption in clinical or commercial supply, which could result in delay in the process of obtaining approval for or sale of our products. Furthermore, we are using one facility to manufacture our sufentanil NanoTabs and have not identified a back up facility to date. Any problems with our existing facility or equipment may delay or impair our ability to complete our clinical trials or commercialize our product candidates and increase our cost.

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Manufacturing issues may arise that could increase product and regulatory approval costs or delay commercialization.

As we scale up manufacturing of our product candidates and conduct required stability testing, product, packaging, equipment and process-related issues may require refinement or resolution in order to proceed with our planned clinical trials and obtain regulatory approval for commercial marketing. In the past we have identified impurities in the drug substance or excipients that comprise the sufentanil or sufentanil/triazolam NanoTab products. In the future we may identify significant impurities, which could result in increased scrutiny by the regulatory agencies, delays in clinical program and regulatory approval, increases in our operating expenses, or failure to obtain or maintain approval for our products.

Our designs for the device components of our product candidates for Phase 3 clinical trials may not be fully functional or commercially viable.

The ARX-01 device we plan to use in Phase 3 clinical trials and commercially, or Phase 3 device, has more features than the device used in Phase 2, including additional software and functionality. Although we have conducted multiple human factor and usability studies, the design of the ARX-01 Phase 3 device is still under development. We plan to complete an additional user testing study prior to release of the device for Phase 3 clinical trials. However, we cannot predict if the Phase 3 device will be fully functional or acceptable for commercial use. If we need to modify the Phase 3 device after the completion of the Phase 3 studies, we may incur higher costs and experience delay in regulatory approval and commercialization of ARX-01. Furthermore, if the changes to the device are substantial, we may need to conduct further clinical studies in order to have the commercial device approved by the FDA.

The dispensing components of ARX-02 and ARX-03 are still under development. We cannot be certain that the dispensing components of ARX-02 and ARX-03 will be fully functional or acceptable for commercial use or that we will be able to effectively scale up the manufacturing process. Failure to do so may delay or prevent regulatory approval or commercialization of ARX-02 and ARX-03.

We have no experience manufacturing the ARX-01 Phase 3 device on a clinical or commercial scale and do not own or operate a manufacturing facility.

We have relied on contract manufacturers, component fabricators and secondary service providers to produce ARX-01 devices for Phase 2 clinical trials. We currently outsource manufacturing and packaging of the controller, dispenser and cartridge components of the ARX-01 device to third parties and intend to continue to do so. We may encounter unanticipated problems in the scale-up and automation process that will result in delays in the manufacturing of the ARX-01 cartridge, dispenser or controller.

We do not currently have any agreements with third party manufacturers for the manufacture of the Phase 3 device. We may not be able to enter into agreements for commercial supply of ARX-01 with third party manufacturers, or may be unable to do so on acceptable terms.

We may not be able to establish additional sources of supply for device manufacture. Such suppliers are subject to FDA regulations requiring that materials be produced under cGMPs, or Quality System Regulations, or QSR, and subject to ongoing inspections by regulatory agencies. Failure by any of our suppliers to comply with applicable regulations may result in delays and interruptions to our product candidate supply while we seek to secure another supplier that meets all regulatory requirements.

Reliance on third party manufacturers entails risks to which we would not be subject if we manufactured the product candidates ourselves, including the possible breach of the manufacturing agreements by the third parties because of factors beyond our control; and the possibility of termination or nonrenewal of the agreements by the third parties because of our breach of the manufacturing agreement or based on their own business priorities.

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We rely on third parties to conduct, supervise and monitor our clinical studies, and if those third parties perform in an unsatisfactory manner, it may harm our business.

We rely on clinical research organizations, or CROs, and clinical trial sites to ensure the proper and timely conduct of our clinical trials. While we have agreements governing their activities, we have limited influence over their actual performance. We have relied and plan to continue to rely upon CROs to monitor and manage data for our ongoing clinical programs for ARX-01 and our other product candidates, as well as the execution of nonclinical studies. We control only certain aspects of our CROs activities. Nevertheless, we are responsible for ensuring that each of our studies is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards and our reliance on the CROs does not relieve us of our regulatory responsibilities.

Since our drug products are controlled substances, all of our contract manufacturing organizations, or CMOs, and CROs must follow proper DEA rules and procedures or comparable rules and procedures in other countries. Failure to properly follow these rules and procedures could results in DEA action, up to and including losing their license to work with controlled substances. This would result in a major delay in our clinical studies and/or NDA submission.

We and our CROs are required to comply with the FDA s current good clinical practices, or cGCPs, which are regulations and guidelines enforced by the FDA for all of our product candidates in clinical development. The FDA enforces these cGCPs through periodic inspections of trial sponsors, principal investigators and clinical trial sites. If we or our CROs fail to comply with applicable cGCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA may require us to perform additional clinical trials before approving our marketing applications. Upon inspection, the FDA may determine that our Phase 3 clinical trials do not comply with cGCPs. In addition, our Phase 3 clinical trials will require a sufficiently large number of test subjects to evaluate the safety and effectiveness of ARX-01. Accordingly, if our CROs fail to comply with these regulations or fail to recruit a sufficient number of patients, we may be required to repeat the Phase 3 clinical trials, which would delay the regulatory approval process.

Our CROs are not our employees, and we cannot control whether or not they devote sufficient time and resources to our ongoing clinical and nonclinical programs. These CROs may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting clinical studies, or other drug development activities which could harm our competitive position. We face the risk of potential unauthorized disclosure or misappropriation of our intellectual property by CROs, which may allow our potential competitors to access our proprietary technology. If our CROs do not successfully carry out their contractual duties or obligations, fail to meet expected deadlines, or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols or regulatory requirements, or for any other reasons, our clinical trials may be extended, delayed or terminated, and we may not be able to obtain regulatory approval for, or successfully commercialize ARX-01, or our other product candidates. As a result, our financial results and the commercial prospects for ARX-01 and any future product candidates that we develop would be harmed, our costs could increase, and our ability to generate revenues could be delayed.

Risks Related to Commercialization of Our Product Candidates

The commercial success of ARX-01 and our other product candidates will depend upon the acceptance of these products by the medical community, including physicians, patients and health care payors.

The degree of market acceptance of any of our product candidates will depend on a number of factors, including:

- demonstration of clinical safety and efficacy compared to other products;
- the relative convenience, ease of administration and acceptance by physicians, patients and health care payors;

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the prevalence and severity of any AEs;

overcoming the perception of sufentanil as a potentially unsafe drug due to its high potency;

limitations or warnings contained in the FDA-approved label for ARX-01;

availability of alternative treatments;

pricing and cost-effectiveness;

the effectiveness of our or any future collaborators sales and marketing strategies;

our ability to obtain hospital formulary approval;

our ability to obtain and maintain sufficient third party coverage or reimbursement; and

the willingness of patients to pay out-of-pocket in the absence of third party coverage.

If ARX-01 is approved, but does not achieve an adequate level of acceptance by physicians, patients and health care payors, we may not generate sufficient revenue from ARX-01 and we may not become or remain profitable.

If we are unable to establish sales and marketing capabilities or enter into agreements with third parties to market and sell our product candidates, we may be unable to generate any revenue.

We currently do not have an organization for the sales, marketing and distribution of pharmaceutical products and the cost of establishing and maintaining such an organization may exceed the cost- effectiveness of doing so. In order to market any products that may be approved, we must build our sales, marketing, managerial and other non-technical capabilities or make arrangements with third parties to perform these services. We intend to enter into strategic partnerships with third parties to commercialize our product candidates outside of the United States. We will also consider the option to enter into strategic partnerships for our product candidates in the United States.

To date, we have not entered into any strategic partnerships for any of our product candidates. We face significant competition in seeking appropriate strategic partners, and these strategic partnerships can be intricate and time consuming to negotiate and document. We may not be able to negotiate strategic partnerships on acceptable terms, or at all. We are unable to predict when, if ever, we will enter into any strategic partnerships because of the numerous risks and uncertainties associated with establishing strategic partnerships. Our strategy for ARX-01 is to develop a hospital-directed sales force and/or collaborate with third parties to promote the product to healthcare professionals and third party payors in the United States. Our future collaboration partners, if any, may not dedicate sufficient resources to the commercialization of our product candidates or may otherwise fail in their commercialization due to factors beyond our control. If we are unable to establish effective collaborations to enable the sale of our product candidates to healthcare professionals and in geographical regions, including the United States, that will not be covered by our own marketing and sales force, or if our potential future collaboration partners do not successfully commercialize our product candidates, our ability to generate revenues from product sales will be adversely affected.

If we are unable to negotiate a strategic partnership or obtain additional financial resources for ARX-02 or ARX-03, we may be forced to curtail the development of ARX-02 or ARX-03, delay potential commercialization, reduce the scope of our sales or marketing activities or undertake development or commercialization activities at our own expense. In addition, without a partnership, we will bear all the risk related to the development of ARX-02 or ARX-03. If we elect to increase our expenditures to fund development or commercialization activities ourselves, we will need to obtain additional capital, which may not be available to us on acceptable terms, or at all. If we do not have sufficient funds, we will not be able to bring ARX-02 or ARX-03 to market or generate product revenue.

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If we are unable to establish adequate sales, marketing and distribution capabilities, whether independently or with third parties, we may not be able to generate sufficient product revenue and may not become profitable. We will be competing with many companies that currently have extensive and well-funded marketing and sales operations. Without an internal team or the support of a third party to perform marketing and sales functions, we may be unable to compete successfully against these more established companies.

If we obtain approval to commercialize our products outside of the United States, a variety of risks associated with international operations could materially adversely affect our business.

If our product candidates are approved for commercialization, we intend to enter into agreements with third parties to market ARX-01 outside the United States. We expect that we will be subject to additional risks related to entering into international business relationships, including:

- different regulatory requirements for drug approvals in foreign countries;
- reduced protection for intellectual property rights;
- unexpected changes in tariffs, trade barriers and regulatory requirements;
- economic weakness, including inflation, or political instability in particular foreign economies and markets;
- compliance with tax, employment, immigration and labor laws for employees living or traveling abroad;
- foreign taxes, including withholding of payroll taxes;
- foreign currency fluctuations, which could result in increased operating expenses and reduced revenues, and other obligations incident to doing business in another country;
- workforce uncertainty in countries where labor unrest is more common than in the United States;
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad; and
- business interruptions resulting from geopolitical actions, including war and terrorism, or natural disasters including earthquakes, typhoons, floods and fires.

If we are unable to compete effectively, our product candidates may not reach their commercial potential.

The market for our product candidates is characterized by intense competition and rapid technological advances. If our product candidates obtain FDA approval, they will compete with a number of existing and future pharmaceuticals and drug delivery devices developed, manufactured and marketed by others. We will compete against fully integrated pharmaceutical companies and smaller companies that are collaborating with larger pharmaceutical companies, academic institutions, government agencies and other public and private research organizations.

The primary competition for ARX-01 is the IV PCA pump, which is widely used in the post-operative setting. Leading manufacturers of IV PCA pumps include Hospira Inc., CareFusion Corporation, Baxter International Inc., Curlin Medical, Inc. and Smiths Medical. The most common opioids used to treat post-operative pain are morphine, hydromorphone and fentanyl, all of which are available as generics. Also

available on the market is the Avancen Medication on Demand, or MOD, Oral PCA Device developed by Avancen MOD Corporation.

Additional potential competitors for ARX-01 include products in development, including the fentanyl iontophoretic transdermal system, IONSYS, originally developed by ALZA Corporation and Ortho-

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McNeil Pharmaceutical, Inc., both Johnson & Johnson subsidiaries, and currently under development by Incline Therapeutics, Inc.; and Rylomine, an intranasal morphine product developed by Javelin Pharmaceuticals, Inc.

Our potential competitors for ARX-02 include products approved in the United States for cancer breakthrough pain, including: ACTIQ and FENTORA, currently manufactured by Cephalon Inc.; Onsolis, currently manufactured by BioDelivery Sciences International, Inc.; and Abstral, currently manufactured by ProStrakan Group plc; as well as products approved in Europe, including: Instanyl, currently manufactured by Nycomed International Management GmbH. The active ingredient in all approved products for cancer breakthrough pain is fentanyl. Additional potential competitors for ARX-02 include products in late stage development for cancer breakthrough pain, such as PecFent, currently manufactured by Archimedes Pharma Limited; Fentanyl TAIFUN, currently manufactured by Akela Pharma, Inc. and SL Spray, currently manufactured by Insys Therapeutics, Inc.

It is possible that any of these competitors could develop or improve technologies or products that would render our product candidates obsolete or non-competitive, which could adversely affect our revenue potential. Key competitive factors affecting the commercial success of our product candidates are likely to be efficacy, safety profile, reliability, convenience of dosing, price and reimbursement.

Many of our potential competitors have substantially greater financial, technical and human resources than we do and significantly greater experience in the discovery and development of drug candidates, obtaining FDA and other regulatory approval of products and the commercialization of those products. Accordingly, our competitors may be more successful than we are in obtaining FDA approval for drugs and achieving widespread market acceptance. Our competitors drugs or drug delivery systems may be more effective, have fewer adverse effects, be less expensive to develop and manufacture, or be more effectively marketed and sold than any product candidate we may commercialize. This may render our product candidates obsolete or non-competitive before we can recover our loses. We anticipate that we will face intense and increasing competition as new drugs enter the market and additional technologies become available. These entities may also establish collaborative or licensing relationships with our competitors, which may adversely affect our competitive position. Finally, the development of different methods for the treatment of post-operative pain or breakthrough pain could render ARX-01 and ARX-02, respectively, non-competitive or obsolete. These and other risks may materially adversely affect our ability to attain or sustain profitable operations.

Hospital formulary approval and reimbursement may not be available for ARX-01 and our other product candidates, which could make it difficult for us to sell our products profitably.

Obtaining formulary approval can be an expensive and time consuming process. We cannot be certain if and when we will obtain formulary approval to allow us to sell our products into our target markets. Failure to obtain timely formulary approval will limit our commercial success.

Furthermore, market acceptance and sales of ARX-01, or any future product candidates that we develop, will depend on reimbursement policies and may be affected by future healthcare reform measures. Government authorities and third party payors, such as private health insurers, hospitals and health maintenance organizations, decide which drugs they will pay for and establish reimbursement levels. We cannot be sure that reimbursement will be available for ARX-01, or any future product candidates. Also, reimbursement amounts may reduce the demand for, or the price of, our products. If reimbursement is not available, or is available only to limited levels, we may not be able to successfully commercialize ARX-01, or any future product candidates that we develop.

There have been a number of legislative and regulatory proposals to change the healthcare system in the United States and in some foreign jurisdictions that could affect our ability to sell our products

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profitably. These legislative and/or regulatory changes may negatively impact the reimbursement for our products, following approval. The availability of numerous generic pain medications may also substantially reduce the likelihood of reimbursement for ARX-01. The potential application of user fees to generic drug products may expedite the approval of additional pain medication generic drugs. We expect to experience pricing pressures in connection with the sale of ARX-01 and any other products that we develop, due to the trend toward managed healthcare, the increasing influence of health maintenance organizations and additional legislative changes. If we fail to successfully secure and maintain reimbursement coverage for our products or are significantly delayed in doing so, we will have difficulty achieving market acceptance of our products and our business will be harmed.

Risks Related to Our Business Operations and Industry

Failure to comply with the Drug Enforcement Administration regulations, or the cost of compliance with these regulations, may adversely affect our business.

Our sufentanil-based products are subject to extensive regulation by the DEA, due to their status as scheduled drugs. Sufentanil is a Schedule II opioid, considered to present the highest risk of abuse. The manufacture, shipment, storage, sale and use of controlled substances are subject to a high degree of regulation, including security, record-keeping and reporting obligations enforced by the DEA. This high degree of regulation can result in significant costs in order to comply with the required regulations, which may have an adverse effect on the development and commercialization of our product candidates.

The DEA limits the availability and production of all Schedule II substances, including sufentanil, through a quota system. The DEA requires substantial evidence and documentation of expected legitimate medical and scientific needs before assigning quotas to manufacturers. At present, our contract manufacturers have applied for a quota on our behalf which allocates a sufficient quantity of sufentanil to meet our planned clinical and pre-clinical needs during 2011. In future years, we may need greater amounts of sufentanil to sustain and complete our Phase 3 development program for ARX-01, and we will need significantly greater amounts of sufentanil to implement our commercialization plans if the FDA approves ARX-01. Any delay or refusal by the DEA in establishing the procurement quota or a reduction in our quota for sufentanil or a failure to increase it over time as we anticipate could delay or stop the clinical development or commercial sale of ARX-01. This could have a material adverse effect on our business, results of operations, financial condition and prospects.

In addition, we purchase sufentanil in the United States and ship it to our third party manufacturer, Patheon Inc. in Toronto, Canada, where much of our clinical trial manufacturing has been completed to date. Shipping across international borders is a bureaucratic process that takes a minimum of three months and requires permits to export drug out of the United States and import NanoTabs into the United States. If we fail to comply with applicable regulatory requirements or fail to submit permit applications in a timely manner, the government could refuse to permit sufentanil to be exported from or imported into the United States. Our failure to comply with these requirements could result in increased costs, delayed shipments, the loss of DEA registration for one of our suppliers, significant restrictions on ARX-01, civil penalties or criminal prosecution and delays in conducting our clinical trials.

Drug Enforcement Administration regulations require that sufentanil be manufactured in the United States if sufentanil-based products are to be marketed in the United States, and there is no guarantee that we will secure a commercial supply agreement with a manufacturer based in the United States.

A substantial portion of our clinical trial manufacturing to date has been completed at Patheon Inc. in Toronto, Canada. However, we cannot rely on the Patheon facility located in Toronto for commercial manufacturing of sufentanil because the DEA requires that sufentanil be manufactured in the United States if our product candidates are marketed in the United States.

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We have identified potential commercial manufacturers for ARX-01 in the United States. However, we do not yet have a commercial supply contract in place. If we cannot establish a supply contract on commercially reasonable terms, or if facility modifications, equipment manufacture or modification do not meet expected deadlines, we may not be able to successfully commercialize our product candidates.

Switching or adding commercial manufacturing capability can involve substantial cost and require extensive management time and focus, as well as additional regulatory filings. In addition, there is a natural transition period when a new manufacturing facility commences work. As a result, delays may occur, which can materially impact our ability to meet our desired commercial timelines, thereby increasing our costs and reducing our ability to generate revenue.

The facilities of any of our future manufacturers of sufentanil-containing NanoTabs must be approved by the FDA after we submit our NDA and before approval of ARX-01 and our other product candidates. We do not control the manufacturing process of sufentanil NanoTabs and are completely dependent on these third party manufacturing partners for compliance with the FDA s requirements for manufacture. In addition, although our third party manufacturers are well established commercial manufacturers, we are dependent on their continued adherence to cGMP manufacturing and acceptable changes to their process. If our manufacturers cannot successfully produce material that conforms to our specifications and the FDA s strict regulatory requirements, they will not be able to secure FDA approval for their manufacturing facilities. If the FDA does not approve these facilities for the commercial manufacture of sufentanil NanoTabs, we will need to find alternative suppliers, which would result in significant delays in obtaining FDA approval for ARX-01. These challenges may have a material adverse impact on our business, results of operations, financial condition and prospects.

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

Our headquarters is located in the San Francisco Bay Area, near known earthquake fault zones and is vulnerable to significant damage from earthquakes. We are also vulnerable to other types of natural disasters and other events that could disrupt our operations. We do not carry insurance for earthquakes or other natural disasters and we may not carry sufficient business interruption insurance to compensate us for losses that may occur. Any losses or damages we incur could have a material adverse effect on our business operations.

Our future success depends on our ability to retain key executives and to attract, retain and motivate qualified personnel.

We are highly dependent on principal members of our executive team listed under Management on page 97 of this prospectus, the loss of whose services may adversely impact the achievement of our objectives. While we have entered into offer letters with each of our executive officers, any of them could leave our employment at any time, as all of our employees are at will employees. Recruiting and retaining other qualified employees for our business, including scientific and technical personnel, will also be critical to our success. There is currently a shortage of skilled executives in our industry, which is likely to continue. As a result, competition for skilled personnel is intense and the turnover rate can be high. We may not be able to attract and retain personnel on acceptable terms given the competition among numerous pharmaceutical companies for individuals with similar skill sets. In addition, failure to succeed in clinical studies may make it more challenging to recruit and retain qualified personnel. The inability to recruit or loss of the services of any executive or key employee might impede the progress of our research, development and commercialization objectives.

We will need to expand our organization, and we may experience difficulties in managing this growth, which could disrupt our operations.

As of December 31, 2010, we had 19 full-time employees. As our company matures, we expect to expand our employee base to increase our managerial, scientific and engineering, operational, sales,

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marketing, financial and other resources and to hire more consultants and contractors. Future growth would impose significant additional responsibilities on our management, including the need to identify, recruit, maintain, motivate and integrate additional employees, consultants and contractors. Also, our management may need to divert a disproportionate amount of its attention away from our day-to-day activities and devote a substantial amount of time to managing these growth activities. We may not be able to effectively manage the expansion of our operations, which may result in weaknesses in our infrastructure, give rise to operational mistakes, loss of business opportunities, loss of employees and reduced productivity among remaining employees. Our expected growth could require significant capital expenditures and may divert financial resources from other projects, such as the development of additional product candidates. If our management is unable to effectively manage our growth, our expenses may increase more than expected, our ability to generate and/or grow revenues could be reduced, and we may not be able to implement our business strategy. Our future financial performance and our ability to commercialize ARX-01 and our other product candidates and compete effectively will depend, in part, on our ability to effectively manage any future growth.

We face potential product liability, and, if successful claims are brought against us, we may incur substantial liability.

The use of our product candidates in clinical studies and the sale of any products for which we obtain marketing approval exposes us to the risk of product liability claims. Product liability claims might be brought against us by consumers, health care providers, pharmaceutical companies or others selling or otherwise coming into contact with our products. If we cannot successfully defend against product liability claims, we could incur substantial liability and costs. In addition, regardless of merit or eventual outcome, product liability claims may result in:

- impairment of our business reputation;
- withdrawal of clinical study participants;
- costs due to related litigation;
- distraction of management s attention from our primary business;
- substantial monetary awards to patients or other claimants;
- the inability to commercialize our product candidates; and
- decreased demand for our product candidates, if approved for commercial sale.

Our current product liability insurance coverage may not be sufficient to reimburse us for any expenses or losses we may suffer. Moreover, insurance coverage is becoming increasingly expensive and in the future we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses due to liability. If and when we obtain marketing approval for our product candidates, we intend to expand our insurance coverage to include the sale of commercial products; however, we may be unable to obtain product liability insurance on commercially reasonable terms or in adequate amounts. On occasion, large judgments have been awarded in class action lawsuits based on drugs that had unanticipated adverse effects. A successful product liability claim or series of claims brought against us could cause our stock price to decline and, if judgments exceed our insurance coverage, could adversely affect our results of operations and business.

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Risks Related to Our Intellectual Property

We have numerous pending patent applications in the United States, but no issued patents. Our only patent, which is issued in Europe, is currently in the opposition period. If our pending patent applications fail to issue or if our issued European patent is successfully opposed, our business will be adversely affected.

Our commercial success will depend in part on obtaining and maintaining patent protection for our product candidates, as well as successfully defending our current and future patents against third party challenges. To protect our proprietary technology, we rely on patents as well as other intellectual property protections, including trade secrets, nondisclosure agreements and confidentiality provisions.

In addition, there can be no assurance that our pending patent applications will result in issued patents. As of December 31, 2010, we are the owner of record and are pursuing 15 U.S. non-provisional patent applications, three pending international Patent Cooperation Treaty applications and 39 foreign national and ten European regional counterpart patent applications directed to our product candidates. The patent applications that we have filed and have not yet been granted may fail to result in issued patents in the United States or in foreign countries. Even if the patents do successfully issue, third parties may challenge the patents.

Our European patent, though granted, may be opposed by third parties during a nine-month opposition period that ends on April 21, 2011. If a third party opposes our European patent, we will need to spend considerable time and resources to defend our granted patent claims. European opposition proceedings may fail and, even if successful, may result in substantial costs and distract our management.

The patent positions of pharmaceutical companies, including us, can be highly uncertain and involve complex and evolving legal and factual questions. No consistent policy regarding the breadth of claims allowed in pharmaceutical patents has emerged to date in the United States. Legal developments may preclude or limit the scope of available patent protection.

Litigation involving patents, patent applications and other proprietary rights is expensive and time consuming. If we are involved in such litigation, it could cause delays in bringing our product candidates to market and interfere with our business.

Our commercial success depends in part on not infringing patents and proprietary rights of third parties. Although we are not currently aware of litigation or other proceedings or third party claims of intellectual property infringement related to our product candidates, the pharmaceutical industry is characterized by extensive litigation regarding patents and other intellectual property rights.

As we enter our markets, it is possible that competitors or other third parties will claim that our products and/or processes infringe their intellectual property rights. These third parties may have obtained and may in the future obtain patents covering products or processes that are similar to, or may include compositions or methods that encompass our technology, allowing them to claim that the use of our technologies infringes these patents.

In a patent infringement claim against us, we may assert, as a defense, that we do not infringe the relevant patent claims, that the patent is invalid or both. The strength of our defenses will depend on the patents asserted, the interpretation of these patents, and our ability to invalidate the asserted patents. However, we could be unsuccessful in advancing non-infringement and/or invalidity arguments in our defense. In the United States, issued patents enjoy a presumption of validity, and the party challenging the validity of a patent claim must present clear and convincing evidence of invalidity, which is a high burden of proof. Conversely, the patent owner need only prove infringement by a preponderance of the evidence, which is a lower burden of proof.

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If we were found by a court to have infringed a valid patent claim, we could be prevented from using the patented technology or be required to pay the owner of the patent for the right to license the patented technology. If we decide to pursue a license to one or more of these patents, we may not be able to obtain a license on commercially reasonable terms, if at all, or the license we obtain may require us to pay substantial royalties or grant cross licenses to our patent rights. For example, if the relevant patent is owned by a competitor, that competitor may choose not to license patent rights to us. If we decide to develop alternative technology, we may not be able to do so in a timely or cost-effective manner, if at all.

In addition, because patent applications can take years to issue and are often afforded confidentiality for some period of time there may currently be pending applications, unknown to us, that later result in issued patents that could cover one or more of our products.

It is possible that we may in the future receive, particularly as a public company, communications from competitors and other companies alleging that we may be infringing their patents, trade secrets or other intellectual property rights, offering licenses to such intellectual property or threatening litigation. In addition to patent infringement claims, third parties may assert copyright, trademark or other proprietary rights against us. We may need to expend considerable resources to counter such claims and may not be able to successful in our defense. Our business may suffer if a finding of infringement is established.

It is difficult and costly to protect our proprietary rights, and we may not be able to ensure their protection.

The patent positions of pharmaceutical companies can be highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. No consistent policy regarding the breadth of claims allowed in pharmaceutical patents has emerged to date in the United States. The pharmaceutical patent situation outside the United States is even more uncertain. Changes in either the patent laws or in interpretations of patent laws in the United States and other countries may diminish the value of our intellectual property. Accordingly, we cannot predict the breadth of claims that may be allowed or enforced in the patents that may be issued from the applications we currently or may in the future own or license from third parties. Further, if any patents license we obtain is deemed invalid and/or unenforceable, it could impact our ability to commercialize or partner our technology.

The degree of future protection for our proprietary rights is uncertain, and we cannot ensure that:

- we were the first to make the inventions covered by each of our pending patent applications;
- we were the first to file patent applications for these inventions;
- others will not independently develop similar or alternative technologies or duplicate any of our technologies;
- any patents issued to us or our collaborators will provide a basis for commercially viable products, will provide us with any competitive advantages or will not be challenged by third parties; or
- the patents of others will not have an adverse effect on our business.

If we do not adequately protect our proprietary rights, competitors may be able to use our technologies and erode or negate any competitive advantage we may have, which could materially harm our business, negatively affect our position in the marketplace, limit our ability to commercialize our product candidates and delay or render impossible our achievement of profitability.

We may be unable to adequately prevent disclosure of trade secrets and other proprietary information.

We rely on trade secrets to protect our proprietary know-how and technological advances, especially where we do not believe patent protection is appropriate or obtainable. However, trade secrets are

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difficult to protect. We rely in part on confidentiality agreements with our employees, consultants, outside scientific collaborators, sponsored researchers and other advisors to protect our trade secrets and other proprietary information. These agreements may not effectively prevent disclosure of confidential information and may not provide an adequate remedy in the event of unauthorized disclosure of confidential information. In addition, others may independently discover our trade secrets and proprietary information. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our proprietary rights. Failure to obtain or maintain trade secret protection could enable competitors to use our proprietary information to develop products that compete with our products or cause additional, material adverse effects upon our competitive business position.

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or applications will be due to be paid to the United States Patent and Trademark Office and various foreign governmental patent agencies in several stages over the lifetime of the patents and/or applications.

We have systems in place to remind us to pay periodic maintenance fees, renewal fees, annuity fees and various other patent and application fees, and we employ an outside firm, McDonnell Boehnen Hulbert Berghoff LLP, or MBHB, in Chicago, Illinois, to pay these fees. The United States Patent and Trademark Office, or the USPTO, and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. We employ MBHB and other professionals to help us comply, and in many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. However, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. If this occurs, our competitors might be able to enter the market, which would have a material adverse effect on our business.

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

The laws of some foreign countries do not protect intellectual property rights to the same extent as the laws of the United States. Many companies have encountered significant problems in protecting and defending intellectual property rights in certain foreign jurisdictions. The legal systems of some countries, particularly developing countries, do not favor the enforcement of patents and other intellectual property protection, especially those relating to life sciences. This could make it difficult for us to stop the infringement of our patents or the misappropriation of our other intellectual property rights. For example, many foreign countries have compulsory licensing laws under which a patent owner must grant licenses to third parties. In addition, many countries limit the enforceability of patents against third parties, including government agencies or government contractors. In these countries, patents may provide limited or no benefit.

Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business. Accordingly, our efforts to protect our intellectual property rights in such countries may be inadequate. In addition, changes in the law and legal decisions by courts in the United States and foreign countries may affect our ability to obtain adequate protection for our technology and the enforcement of intellectual property.

We have not yet registered our trademarks in all of our potential markets, and failure to secure those registrations could adversely affect our business.

We have registered our ACELRX mark in Class 5, Pharmaceutical preparations for treating pain; pharmaceutical preparations for treating anxiety, and Class 10, Drug delivery systems; medical device, namely, a mechanical and electronic device used to administer medications, perform timed medication delivery, and to provide secure access to and delivery of medications, in the United States. Our ACELRX mark has also been registered in the European Community and in Canada, and is pending in India. We

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have filed a trademark application for our NANOTAB mark and our tagline, ACCELERATE, INNOVATE, ALLEVIATE in Class 5, in the United States. Although we are not currently aware of any oppositions to or cancellations of our registered trademarks or pending applications, it is possible that one or more of the applications could be subject to opposition or cancellation after the marks are registered. The registrations will be subject to use and maintenance requirements. It is also possible that we have not yet registered all of our trademarks in all of our potential markets, and that there are names or symbols other than ACELRX that may be protectable marks for which we have not sought registration, and failure to secure those registrations could adversely affect our business. Opposition or cancellation proceedings may be filed against our trademarks and our trademarks may not survive such proceedings.

Risks Related to this Offering and Ownership of Our Common Stock

The market price of our common stock may be highly volatile, and you may not be able to resell your shares at or above the initial public offering price.

Prior to this offering, there has not been a public market for our common stock. An active trading market for our common stock may not develop following this offering. You may not be able to sell your shares quickly or at the market price if trading in our common stock is not active. The initial public offering price for the shares will be determined by negotiations between us and the representative of the underwriters and may not be indicative of prices that will prevail in the trading market.

The trading price of our common stock is likely to be volatile. Our stock price could be subject to wide fluctuations in response to a variety of factors, including the following:

- adverse results or delays in clinical trials;
- inability to obtain additional funding, including funding necessary to complete the third ARX-01 Phase 3 clinical trial required to file our NDA;
- any delay in filing an NDA for any of our product candidates and any adverse development or perceived adverse development with respect to the FDA s review of that NDA;
- failure to successfully develop and commercialize our product candidates;
- changes in laws or regulations applicable to our products;
- inability to obtain adequate product supply for our product candidates, or the inability to do so at acceptable prices;
- adverse regulatory decisions;
- introduction of new products, services or technologies by our competitors;
- failure to meet or exceed financial projections we provide to the public;
- failure to meet or exceed the estimates and projections of the investment community;

the perception of the pharmaceutical industry by the public, legislatures, regulators and the investment community;

announcements of significant acquisitions, strategic partnerships, joint ventures or capital commitments by us or our competitors;

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

additions or departures of key scientific or management personnel;

significant lawsuits, including patent or stockholder litigation;

changes in the market valuations of similar companies;

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sales of our common stock by us or our stockholders in the future; and

trading volume of our common stock.

In addition, the stock market in general, and the NASDAQ Global Market in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. Broad market and industry factors may negatively affect the market price of our common stock, regardless of our actual operating performance.

Our principal stockholders and management own a significant percentage of our stock and will be able to exert significant control over matters subject to stockholder approval.

Our executive officers, directors, 5% stockholders and their affiliates beneficially own approximately 98% of our voting stock and, upon completion of this offering, that same group will beneficially own approximately 80% of our outstanding voting stock, after giving effect to the purchase by certain of our current stockholders of an aggregate of 4,800,000 shares of common stock in this offering at the initial public offering price of $5.00 per share. Therefore, even after this offering these stockholders will have the ability to influence us through this ownership position. These stockholders may be able to determine all matters requiring stockholder approval. For example, these stockholders, acting together, may be able to control elections of directors, amendments of our organizational documents, or approval of any merger, sale of assets, or other major corporate transaction. This may prevent or discourage unsolicited acquisition proposals or offers for our common stock that you may believe are in your best interest as one of our stockholders.

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

As a public company, we will incur significant legal, accounting and other expenses that we did not incur as a private company. In addition, the Sarbanes-Oxley Act of 2002, as amended, or the Sarbanes-Oxley Act, as well as rules subsequently implemented by the Securities and Exchange Commission, or SEC, and the NASDAQ Global Market have imposed various requirements on public companies. Our management and other personnel will need to devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations will increase our legal and financial compliance costs and will make some activities more time-consuming and costly. For example, we expect these rules and regulations to make it more difficult and more expensive for us to obtain director and officer liability insurance and we may be required to incur substantial costs to maintain our current levels of such coverage.

As a public company, we will be subject to the requirements of Section 404 of the Sarbanes-Oxley Act. If we are unable to comply with Section 404 in a timely manner, it may affect the reliability of our internal control over financial reporting. Assessing our staffing and training procedures to improve our internal control over financial reporting is an ongoing process. We are not currently required to comply with Section 404 of the Sarbanes-Oxley Act and are therefore not required to make an assessment of the effectiveness of our internal control over financial reporting. Further, our independent registered public accounting firm has not been engaged to express, nor have they expressed, an opinion on the effectiveness of our internal control over financial reporting.

We plan to continue to assess our internal controls and procedures and intend to take further action as necessary or appropriate to address any other matters we identify. For the year ending December 31, 2011, pursuant to Section 404 of the Sarbanes-Oxley Act, our management will be required to deliver a report that assesses the effectiveness of our internal control over financial reporting. In addition, our independent registered public accounting firm will also be required to deliver an attestation report on the operating effectiveness of our internal control over financial reporting beginning with the year ending December 31, 2012, unless we qualify for an exemption as a non-accelerated filer under the applicable SEC rules and regulations.

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We have been and will continue to be involved in a substantial effort to implement appropriate processes, document the system of internal control over key processes, assess their design, remediate any deficiencies identified and test their operation. We cannot be certain at this time whether our measures to improve internal controls will be successful, that we will be able to successfully complete the procedures, certification and attestation requirements of Section 404 or that we or our independent registered public accounting firm will not identify material weaknesses in our internal control over financial reporting. If we fail to comply with the requirements of Section 404, it may affect the reliability of our internal control over financial reporting and negatively impact the quality of disclosure to our investors. If we or our independent registered public accounting firm identify and report a material weakness, it could adversely affect our stock price.

If you purchase our common stock in this offering, you will incur immediate and substantial dilution in the book value of your shares.

Investors purchasing common stock in this offering will pay a price per share that substantially exceeds the pro forma book value (deficit) per share of our tangible assets after subtracting our liabilities. As a result, investors purchasing common stock in this offering will incur immediate dilution of $3.04 per share, based on the initial public offering price of $5.00 per share, and our pro forma net tangible book value (deficit) as of September 30, 2010. Further, based on these assumptions, investors purchasing common stock in this offering will contribute approximately 37% of the total amount invested by stockholders since our inception, but will own approximately 41% of the shares of common stock outstanding. For information on how the foregoing amounts were calculated, see Dilution.

This dilution is due to the substantially lower price paid by our investors who purchased shares prior to this offering as compared to the price offered to the public in this offering, and the exercise of stock options granted to our employees. In addition, as of September 30, 2010, options to purchase 1,892,860 shares of our common stock at a weighted average exercise price at September 30, 2010 of $1.88 per share (or $2.77 per share assuming that the December 2010 stock option modification described under Management s Discussion and Analysis of Financial Condition and Results of Operations Critical Accounting Policies and Estimates Stock-Based Compensation had occurred as of September 30, 2010) and warrants exercisable for up to 231,678 shares of our common stock, that are expected to remain outstanding after completion of this offering at a weighted average exercise price of approximately $3.94 per share, were outstanding. The exercise of any of these options or warrants would result in additional dilution. As a result of the dilution to investors purchasing shares in this offering, investors may receive significantly less than the purchase price paid in this offering, if anything, in the event of our liquidation.

Sales of a substantial number of shares of our common stock in the public market by our existing stockholders could cause our stock price to fall.

Sales of a substantial number of shares of our common stock in the public market or the perception that these sales might occur, could depress the market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities. We are unable to predict the effect that sales may have on the prevailing market price of our common stock.

Substantially all of our existing stockholders are subject to lock-up agreements with the underwriters of this offering that restrict the stockholders ability to transfer shares of our common stock for at least 180 days from the date of this prospectus. The lock-up agreements limit the number of shares of common stock that may be sold immediately following the public offering. Subject to certain limitations, approximately 16,171,750 shares will become eligible for sale upon expiration of the lock-up period, as calculated and described in more detail in the section entitled Shares Eligible for Future Sale . In addition, shares issued or issuable upon exercise of options and warrants vested as of the expiration of the lock-up period will be eligible for sale at that time. Sales of stock by these stockholders could have a material adverse effect on the trading price of our common stock.

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Certain holders of our securities are entitled to rights with respect to the registration of their shares under the Securities Act of 1933, as amended, or the Securities Act, subject to the 180-day lock-up arrangement described above. Registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act, except for shares held by our affiliates as defined in Rule 144 under the Securities Act. Any sales of securities by these stockholders could have a material adverse effect on the trading price of our common stock.

Future sales and issuances of our common stock or rights to purchase common stock, including pursuant to our equity incentive plans, could result in additional dilution of the percentage ownership of our stockholders and could cause our stock price to fall.

We expect that significant additional capital will be needed in the future to continue our planned operations. To the extent we raise additional capital by issuing equity securities, our stockholders may experience substantial dilution. We may sell common stock, convertible securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time. If we sell common stock, convertible securities or other equity securities in more than one transaction, investors may be materially diluted by subsequent sales. These sales may also result in material dilution to our existing stockholders, and new investors could gain rights superior to our existing stockholders.

Pursuant to our 2011 Equity Incentive Plan, adopted by our board of directors in January 2011, or the 2011 Plan, our management is authorized to grant stock options and other equity-based awards to our employees, directors and consultants. The number of shares available for future grant under our 2011 Plan will automatically increase each year by 4% of all shares of our capital stock outstanding as of December 31 of the prior calendar year, subject to the ability of our board of directors to take action to reduce the size of the increase in any given year. Currently, we plan to register the increased number of shares available for issuance under our 2011 Plan each year. If our board of directors elects to increase the number of shares available for future grant by the maximum amount each year, our stockholders may experience additional dilution, which could cause our stock price to fall.

We are at risk of securities class action litigation.

In the past, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us because pharmaceutical companies have experienced significant stock price volatility in recent years. If we face such litigation, it could result in substantial costs and a diversion of management s attention and resources, which could harm our business.

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

Our management will have broad discretion in the application of the net proceeds, including for any of the purposes described in the section entitled Use of Proceeds, and you will not have the opportunity as part of your investment decision to assess whether the net proceeds are being used appropriately. Because of the number and variability of factors that will determine our use of the net proceeds from this offering, their ultimate use may vary substantially from their currently intended use. The failure by our management to apply these funds effectively could harm our business. Pending their use, we may invest the net proceeds from this offering in short-term, investment-grade, interest-bearing securities. These investments may not yield a favorable return to our stockholders.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

Under Section 382 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an ownership change, generally defined as a greater than 50% change (by value) in its equity ownership over a three year period, the corporation s ability to use its pre-change net operating loss carryforwards

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and other pre-change tax attributes (such as research tax credits) to offset its post-change income may be limited. We believe that, with our initial public offering, our most recent private placement and other transactions that have occurred over the past three years, we may have triggered an ownership change limitation. We may also experience ownership changes in the future as a result of subsequent shifts in our stock ownership. As a result, if we earn net taxable income, our ability to use our pre-change net operating loss carryforwards to offset United States federal taxable income may be subject to limitations, which could potentially result in increased future tax liability to us.

We do not intend to pay dividends on our common stock so any returns will be limited to the value of our stock.

We have never declared or paid any cash dividend on our common stock. We currently anticipate that we will retain future earnings for the development, operation and expansion of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. Any return to stockholders will therefore be limited to the appreciation of their stock.

Provisions in our amended and restated certificate of incorporation and bylaws, as well as provisions of Delaware law, could make it more difficult for a third party to acquire us or increase the cost of acquiring us, even if doing so would benefit our stockholders or remove our current management.

Some provisions of our charter documents and Delaware law may have anti-takeover effects that could discourage an acquisition of us by others, even if an acquisition would be beneficial to our stockholders and may prevent attempts by our stockholders to replace or remove our current management. These provisions include:

- authorizing the issuance of blank check preferred stock, the terms of which may be established and shares of which may be issued without stockholder approval;
- limiting the removal of directors by the stockholders;
- creating a staggered board of directors;
- prohibiting stockholder action by written consent, thereby requiring all stockholder actions to be taken at a meeting of our stockholders;
- eliminating the ability of stockholders to call a special meeting of stockholders; and
- establishing advance notice requirements for nominations for election to the board of directors or for proposing matters that can be acted upon at stockholder meetings.

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 members of our board of directors, which is responsible for appointing the members of our management. In addition, we are subject to Section 203 of the Delaware General Corporation Law, which generally prohibits a Delaware corporation from engaging in any of a broad range of business combinations with an interested stockholder for a period of three years following the date on which the stockholder became an interested stockholder, unless such transactions are approved by our board of directors. This provision could have the effect of delaying or preventing a change of control, whether or not it is desired by or beneficial to our stockholders. Further, other provisions of Delaware law may also discourage, delay or prevent someone from acquiring us or merging with us.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Some of the statements under Prospectus Summary, Risk Factors, Management s Discussion and Analysis of Financial Condition and Results of Operations and Business and elsewhere in this prospectus contain forward-looking statements. In some cases, you can identify forward-looking statements by the following words: may, will, could, would, should, expect, intend, plan, anticipate, believe, estimate, pr continue, ongoing or the negative of these terms or other comparable terminology, although not all forward-looking statements contain these words. These statements involve risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements. Although we believe that we have a reasonable basis for each forward-looking statement contained in this prospectus, we caution you that these statements are based on a combination of facts and factors currently known by us and our projections of the future, about which we cannot be certain. Many important factors affect our ability to achieve our objectives, including:

- the success, cost and timing of our product development activities and clinical trials;
- our ability to obtain and maintain regulatory approval of our product candidates, and any related restrictions, limitations, and/or warnings in the label of an approved product candidate;
- our ability to obtain funding for our operations, including funding necessary to complete the third ARX-01 Phase 3 clinical trial required to file our NDA;
- our plans to research, develop and commercialize our product candidates;
- our ability to attract collaborators with development, regulatory and commercialization expertise;
- the size and growth potential of the markets for our product candidates, and our ability to serve those markets;
- our ability to successfully commercialize our product candidates;
- the rate and degree of market acceptance of our product candidates;
- our ability to develop sales and marketing capabilities, whether alone or with potential future collaborators;
- regulatory developments in the United States and foreign countries;
- the performance of our third party suppliers and manufacturers;
- the success of competing therapies that are or become available;

the loss of key scientific or management personnel;

our use of the proceeds from this offering;

the accuracy of our estimates regarding expenses, future revenues, capital requirements and needs for additional financing; and

our ability to obtain and maintain intellectual property protection for our product candidates.

In addition, you should refer to the Risk Factors section of this prospectus for a discussion of other important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. As a result of these factors, we cannot assure you that the forward-looking statements in this prospectus will prove to be accurate. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties

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in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, or at all. 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.

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USE OF PROCEEDS

We estimate that our net proceeds from the sale of the common stock that we are offering will be approximately $35.6 million, based on the initial public offering price of $5.00 per share, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us. If the underwriters over-allotment option to purchase additional shares in this offering is exercised in full, we estimate that our net proceeds will be approximately $41.2 million, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

We currently expect to use the net proceeds from this offering as follows:

- approximately $27.8 million of these net proceeds to fund two of our three planned ARX-01 Phase 3 clinical trials; and
- the remainder to fund working capital needs and other general corporate purposes.

The costs and timing of drug development and marketing approval, particularly conducting clinical trials, are highly uncertain, are subject to substantial risks and can often change. Accordingly, we may change the allocation of use of these proceeds as a result of contingencies such as the progress and results of our clinical trials and other development activities, the establishment of collaborations, our manufacturing requirements and regulatory or competitive developments.

Pending their use, we plan to invest the net proceeds from this offering in short- and intermediate-term, interest-bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the United States government.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock. We currently intend to retain all available funds and any future earnings to support our operations and finance the growth and development of our business. We do not intend to pay cash dividends on our common stock for the foreseeable future. Any future determination related to dividend policy will be made at the discretion of our board of directors and will depend on then-existing conditions, including our financial condition, operating results, contractual restrictions, capital requirements, business prospects and other factors our board of directors may deem relevant.

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CAPITALIZATION

The following table sets forth our cash, cash equivalents and short-term investments and our capitalization as of September 30, 2010:

- on an actual basis;
- on a pro forma basis to give effect to the following transactions and adjustments as if they had occurred as of September 30, 2010:
  - (1) the automatic conversion of all outstanding shares of our convertible preferred stock into an aggregate of 8,555,713 shares of common stock upon completion of this offering;
  - (2) the exercise, on a net issuance basis, of warrants outstanding as of September 30, 2010 that we issued in connection with a bridge loan financing in September 2010, or the 2010 warrants, which will be exercisable for shares of our Series C convertible preferred stock immediately prior to this offering, and the concomitant conversion of the shares of Series C convertible preferred stock acquired upon exercise into 107,246 shares of common stock upon completion of this offering, based on the initial public offering price of $5.00 per share;
  - (3) the automatic conversion of our remaining warrants to purchase convertible preferred stock, which warrants are expected to remain outstanding upon the completion of this offering, into warrants to purchase an aggregate of 231,678 shares of common stock upon completion of this offering;
  - (4) the reclassification of the liability associated with the warrants to purchase convertible preferred stock to additional paid-in capital; and
  - (5) the automatic conversion of the principal and accrued interest outstanding under our $8.0 million in aggregate principal amount of convertible promissory notes, or the 2010 notes, into 2,034,438 shares of common stock immediately prior to the closing of this offering at a conversion price equal to 80% of the initial public offering price, based on the initial public offering price of $5.00 per share, and assuming the conversion occurs on February 16, 2011, and the reclassification of the convertible note liability to common stock and additional paid-in capital in connection with the conversion; and
- on a pro forma as adjusted basis to give further effect to the sale of 8,000,000 shares of common stock in this offering at the initial public offering price of $5.00 per share, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, as if the sale of the shares in this offering had occurred as of September 30, 2010.

Because the number of shares of common stock that will be issued upon conversion of the 2010 notes depends upon the actual closing date of this offering, the actual number of shares issued upon such conversion may differ from the number of shares set forth above. See Prospectus Summary The Offering.

You should read this table in conjunction with the sections titled Selected Financial Data and Management s Discussion and Analysis of Financial Condition and Results of Operations and our financial statements and related notes included elsewhere in this prospectus.

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	September 30, 2010		
	Actual	Pro Forma	Pro Forma as Adjusted
	(in thousands, except share and per share data) (Unaudited)		
Cash, cash equivalents and short-term investments	$ 8,082	$ 8,082	$ 43,722
Long-term debt, including current portion	6,382	6,382	6,382
Convertible notes	4,603		
Call option liability	476		
Convertible preferred stock warrant liability	2,219		
Convertible preferred stock, $0.001 par value: 46,736,125 shares authorized, 7,151,802 shares issued and outstanding, actual; no shares authorized, issued or outstanding, pro forma and pro forma as adjusted	55,941		
Stockholders equity (deficit):			
Preferred stock, $0.001 par value: no shares authorized, issued or outstanding, actual and pro forma; 10,000,000 shares authorized, no shares issued and outstanding, pro forma as adjusted			
Common stock, $0.001 par value: 71,000,000 shares authorized, 674,353 shares issued and outstanding, actual; 71,000,000 shares authorized, 11,371,750 shares issued and outstanding, pro forma; 100,000,000 shares authorized, 19,371,750 shares issued and outstanding, pro forma as adjusted	1	11	19
Additional paid-in capital	4,053	67,282	102,914
Deficit accumulated during the development stage	(65,040)	(65,040)	(65,040)
Total stockholders equity (deficit)	(60,986)	2,253	37,893
Total capitalization	$ 8,635	$ 8,635	$ 44,275

The outstanding share information in the table above excludes:

- 1,892,860 shares of common stock issuable upon the exercise of stock options outstanding as of September 30, 2010 under our 2006 Stock Plan having a weighted average exercise price at September 30, 2010 of $1.88 per share (or $2.77 per share assuming that the December 2010 stock option modification described under Management s Discussion and Analysis of Financial Condition and Results of Operations Critical Accounting Policies and Estimates Stock-Based Compensation had occurred as of September 30, 2010);

- 167,630 shares of common stock reserved for future issuance under our 2006 Stock Plan as of September 30, 2010, which share reserve will become available for issuance under our 2011 Equity Incentive Plan upon the execution and delivery of the underwriting agreement for this offering;

- 231,678 shares of common stock issuable upon the exercise of warrants outstanding as of September 30, 2010 having a weighted average exercise price of $3.94 per share, which warrants are expected to remain outstanding upon completion of this offering;

- 1,875,000 shares of common stock (which will include the shares then reserved for issuance under our 2006 Stock Plan at the time of the execution and delivery of the underwriting agreement for this offering) reserved for future issuance under our 2011 Equity Incentive Plan, which will become effective immediately upon the execution and delivery of the

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underwriting agreement for this offering, as well as any future increases in the number of shares of common stock reserved for issuance under this plan; and

250,000 shares of common stock reserved for future issuance under our 2011 Employee Stock Purchase Plan, which will become effective immediately upon the execution and delivery of the underwriting agreement for this offering, as well as any future increases in the number of shares of common stock reserved for issuance under this plan.

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DILUTION

If you invest in our common stock, you will experience immediate and substantial dilution to the extent of the difference between the initial public offering price of our common stock and the pro forma as adjusted net tangible book value (deficit) per share of our common stock immediately after the offering.

Our historical net tangible book value (deficit) per share is determined by dividing our total tangible assets, less total liabilities and convertible preferred stock, by the actual number of outstanding shares of our common stock. The historical net tangible book value (deficit) of our common stock as of September 30, 2010 was $(61.0) million, or $(90.44) per share. The pro forma net tangible book value (deficit) of our common stock as of September 30, 2010 was $2.3 million, or $0.20 per share. The pro forma net tangible book value (deficit) per share gives effect to:

(1) the automatic conversion of all outstanding shares of our convertible preferred stock into an aggregate of 8,555,713 shares of common stock upon completion of this offering;

(2) the exercise, on a net issuance basis, of warrants outstanding as of September 30, 2010 that we issued in connection with a bridge loan financing in September 2010, or the 2010 warrants, which will be exercisable for shares of our Series C convertible preferred stock immediately prior to this offering, and the concomitant conversion of the shares of Series C convertible preferred stock acquired upon exercise into 107,246 shares of common stock upon completion of this offering, based on the initial public offering price of $5.00 per share;

(3) the automatic conversion of our remaining warrants to purchase convertible preferred stock, which warrants are expected to remain outstanding upon the completion of this offering, into warrants to purchase an aggregate of 231,678 shares of common stock upon completion of this offering;

(4) the reclassification of the liability associated with the warrants to purchase convertible preferred stock to additional paid-in capital; and

(5) the automatic conversion of the principal and accrued interest outstanding under our $8.0 million in aggregate principal amount of convertible promissory notes, or the 2010 notes, into 2,034,438 shares of common stock immediately prior to the closing of this offering at a conversion price equal to 80% of the initial public offering price, based on the initial public offering price of $5.00 per share, and assuming the conversion occurs on February 16, 2011, and the reclassification of the convertible note liability to common stock and additional paid-in capital in connection with the conversion.

Because the number of shares of common stock that will be issued upon conversion of the 2010 notes depends upon the actual closing date of this offering, the actual number of shares issuable upon such conversion may differ from the number of shares set forth above. See Prospectus Summary The Offering.

The pro forma as adjusted net tangible book value (deficit) of our common stock as of September 30, 2010 was $37.9 million, or $1.96 per share. The pro forma as adjusted net tangible book value (deficit) gives effect to (1) the sale of 8,000,000 shares of common stock in this offering at the initial public offering price of $5.00 per share, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, and (2) the pro forma transactions and other adjustments described in the second preceding paragraph. The difference between the initial public offering price and the pro forma as adjusted net tangible book value (deficit) per share represents an immediate dilution of $3.04 per share to new investors purchasing common stock in this offering.

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The following table illustrates this dilution on a per share basis:

Initial public offering price per share		$ 5.00
Historical net tangible book value (deficit) per share as of September 30, 2010	$ (90.44)	
Pro forma increase in net tangible book value (deficit) per share attributable to the pro forma transactions and other adjustments described in the preceding second paragraph	90.63	
Pro forma net tangible book value (deficit) per share before this offering	0.20	
Pro forma increase in net tangible book value (deficit) per share attributable to investors participating in this offering	1.76	
Pro forma as adjusted net tangible book value (deficit) per share after this offering		1.96
Dilution per share to new investors purchasing common stock in this offering		$ 3.04

If the underwriters over-allotment option to purchase additional shares from us is exercised in full, and based on the initial public offering price is $5.00 per share, the pro forma as adjusted net tangible book value (deficit) per share after this offering would be $2.11 per share, the increase in pro forma as adjusted net tangible book value (deficit) per share to existing stockholders would be $0.15 per share and the dilution to new investors purchasing shares in this offering would be $2.89 per share.

The table below summarizes as of September 30, 2010, on the pro forma as adjusted basis described above, the number of shares of our common stock we issued and sold, the total consideration we received and the average price per share (1) paid to us by existing stockholders; (2) to be paid by new investors purchasing our common stock in this offering at the initial public offering price of $5.00 per share, before deducting underwriting discounts and commissions and estimated offering expenses payable by us; and (3) the average price per share paid by existing stockholders and by new investors who purchase shares of common stock in this offering.

	Shares Purchased		Total Consideration		Average Price Per Share
	Number	Percent	Amount (in thousands)	Percent	
Existing stockholders	11,371,750	59%	$ 67,282	63%	$ 5.92
New investors	8,000,000	41	40,000	37	5.00
Totals	19,371,750	100%	$ 107,282	100%	$ 5.54

The number of shares of common stock outstanding immediately after this offering is based on 11,371,750 shares of common stock outstanding as of September 30, 2010, after giving effect to the pro forma transactions described in the second preceding paragraph. This number excludes:

- 1,892,860 shares of common stock issuable upon the exercise of stock options outstanding as of September 30, 2010 under our 2006 Stock Plan having a weighted average exercise price at September 30, 2010 of $1.88 per share (or $2.77 per share assuming that the December 2010 stock option modification described under Management s Discussion and Analysis of Financial Condition and Results of Operations Critical Accounting Policies and Estimates Stock-Based Compensation had occurred as of September 30, 2010);

167,630 shares of common stock reserved for future issuance under our 2006 Stock Plan as of September 30, 2010, which share reserve will become available for issuance under our 2011 Equity Incentive Plan upon the execution and delivery of the underwriting agreement for this offering;

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231,678 shares of common stock issuable upon the exercise of warrants outstanding as of September 30, 2010 having a weighted average exercise price of $3.94 per share, which warrants are expected to remain outstanding upon completion of this offering;

1,875,000 shares of common stock (which will include the shares then reserved for issuance under our 2006 Stock Plan at the time of the execution and delivery of the underwriting agreement for this offering) reserved for future issuance under our 2011 Equity Incentive Plan, which will become effective immediately upon the execution and delivery of the underwriting agreement for this offering, as well as any future increases in the number of shares of common stock reserved for issuance under this plan; and

250,000 shares of common stock reserved for future issuance under our 2011 Employee Stock Purchase Plan, which will become effective immediately upon the execution and delivery of the underwriting agreement for this offering, as well as any future increases in the number of shares of common stock reserved for issuance under this plan.

If the underwriters over-allotment option is exercised in full, the pro forma as adjusted number of shares held by the existing stockholders after this offering would be 11,371,750, or 55% of the pro forma as adjusted total number of shares of our common stock outstanding after this offering, and the number of shares held by new investors would increase to 9,200,000, or 45% of the pro forma as adjusted total number of shares of our common stock outstanding after this offering.

Entities affiliated with certain of our current stockholders have agreed to purchase an aggregate of 4,800,000 shares of common stock in this offering at the initial public offering price of $5.00 per share. The foregoing discussion and tables do not reflect any potential purchases by these current stockholders or their affiliated entities.

Effective upon the closing of this offering, an aggregate of up to 2,125,000 shares of our common stock will be reserved for future issuance under our equity benefit plans, and the number of reserved shares will also be subject to automatic annual increases in accordance with the terms of the plans. To the extent that new options are issued under our equity benefit plans or we issue additional shares of common stock in the future, there will be further dilution to investors purchasing common stock in this offering.

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SELECTED FINANCIAL DATA

We derived the selected statements of operations data for the years ended December 31, 2007, 2008 and 2009 and the balance sheet data as of December 31, 2008 and 2009 from our audited financial statements included elsewhere in this prospectus. The summary statement of operations data for the nine months ended September 30, 2009 and 2010 and the balance sheet data as of September 30, 2010 have been derived from our unaudited financial statements included elsewhere in this prospectus. We derived the selected statements of operations data for the period from July 13, 2005 (inception) through December 31, 2005 and the year ended December 31, 2006 and the balance sheet data as of December 31, 2005, 2006 and 2007 from our audited financial statements which are not included in this prospectus. Our historical results are not necessarily indicative of the results that may be expected in the future. You should read the following selected financial data below in conjunction with Management s Discussion and Analysis of Financial Condition and Results of Operations and our financial statements and related notes included elsewhere in this prospectus. The selected financial data in this section is not intended to replace the financial statements and is qualified in its entirety by the financial statements and related notes included in this prospectus.

	Period from July 13, 2005 (Inception) Through December 31, 2005	Year Ended December 31,				Nine Months Ended September 30,	
		2006	2007	2008	2009	2009	2010
						(Unaudited)	
	(in thousands, except share and per share data)						
Statement of Operations Data:							
Operating Expenses:							
Research and development	$ 35	$ 3,533	$ 8,209	$ 18,325	$ 15,502	$ 13,180	$ 6,309
General and administrative	5	520	2,082	2,365	3,529	2,510	3,033
Total operating expenses	40	4,053	10,291	20,690	19,031	15,690	9,342
Loss from operations	(40)	(4,053)	(10,291)	(20,690)	(19,031)	(15,690)	(9,342)
Interest income		347	687	484	33	37	2
Interest expense		(62)	(25)	(404)	(1,242)	(965)	(656)
Other income (expense), net			(1)	(52)	121	196	(825)
Loss before provision for income taxes	(40)	(3,768)	(9,630)	(20,662)	(20,119)	(16,422)	(10,821)
Provision for income taxes							
Net loss	(40)	$ (3,768)	$ (9,630)	$ (20,662)	$ (20,119)	$ (16,422)	$ (10,821)
Net loss per share of common stock, basic and diluted	$ 0.00	$ (36.90)	$ (26.45)	$ (43.69)	$ (34.93)	$ (29.09)	$ (16.63)
Shares used in computing net loss per share of common stock, basic and diluted		102,102	364,039	472,914	576,021	564,571	650,774
Pro forma net loss per share of common stock, basic and diluted (unaudited)[1]					$ (3.51)		$ (1.09)
Shares used in computing pro forma net loss per share of common stock, basic and diluted (unaudited)[1]					5,746,372		9,204,999

(1)

See Note 11 of the audited financial statements included elsewhere in this prospectus for discussion regarding the calculations for the net loss per share and the pro forma net loss per share and the shares used in these calculations.

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	As of December 31,					September 30,
	2005	2006	2007	2008	2009	2010 (Unaudited)
				(in thousands)		
Balance Sheet Data:						
Cash, cash equivalents and short-term investments	$	$ 17,098	$ 7,699	$ 20,207	$ 12,546	$ 8,082
Working capital (deficit)	(40)	16,537	6,959	16,450	6,931	(1,894)
Total assets		18,193	10,038	22,679	14,491	9,786
Total debt, including convertible notes			525	12,334	9,734	10,985
Convertible preferred stock warrant liability				240	169	2,219
Convertible preferred stock		21,016	21,016	41,156	55,871	55,941
Total stockholders deficit	(40)	(3,715)	(13,189)	(33,335)	(52,994)	(60,986)

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our financial statements and the related notes included elsewhere in this prospectus. This discussion contains forward-looking statements that involve risks, uncertainties and assumptions. Our actual results could differ materially from those discussed below. Factors that could cause or contribute to such differences include, but are not limited to, those identified below and those discussed in the section entitled Risk Factors included elsewhere in this prospectus.

Overview

We are a specialty pharmaceutical company focused on the development and commercialization of innovative therapies for the treatment of acute and breakthrough pain. We were founded to solve the problems associated with post-operative intravenous patient-controlled analgesia, or IV PCA. Although widely used, IV PCA has been shown to cause harm to patients following surgery because of the side effects of morphine, the invasive IV route of delivery and the inherent potential for programming and delivery errors associated with the complexity of infusion pumps. We are preparing to initiate two Phase 3 clinical trials for our lead product candidate, the Sufentanil NanoTab PCA System, or ARX-01. The system is designed to address these problems by utilizing:

- sufentanil, a high therapeutic index opioid;
- NanoTabs, our proprietary, non-invasive sublingual dosage form; and
- our novel handheld PCA device that enables simple patient-controlled delivery of NanoTabs in the hospital setting and eliminates the risk of programming errors.

We have completed Phase 2 clinical development for two additional product candidates, the Sufentanil NanoTab BTP Management System, or ARX-02, for the treatment of cancer breakthrough pain, or BTP, and the Sufentanil/Triazolam NanoTab, or ARX-03, designed to provide mild sedation, anxiety reduction and pain relief for patients undergoing painful procedures in a physician s office.

We are a development stage company with a limited operating history. We have funded our operations to date primarily from the private placement of convertible preferred stock and proceeds received from our debt financings. From inception through September 30, 2010, we have received net proceeds of $54.9 million from the sale of convertible preferred stock and $21.6 million from proceeds of our debt financings. As of September 30, 2010, we had $14.4 million of debt outstanding, of which $6.4 million relates to our loan and security agreement and $8.0 million, which does not include the debt discount of $3.4 million, relates to our convertible note agreement.

Since our inception in July 2005, we have not generated any revenue from the sale of our products and do not anticipate generating any revenues for the foreseeable future. We have incurred losses and generated negative cash flows from operations since inception. Our net losses were $20.1 million and $10.8 million for the year ended December 31, 2009 and the nine months ended September 30, 2010. As of September 30, 2010, we had an accumulated deficit of $65.0 million. Substantially all of our operating losses resulted from costs incurred in connection with our development programs and from general and administrative costs associated with our operations. As of September 30, 2010, our principal sources of liquidity are our cash, cash equivalents and short-term investments, which totaled $8.1 million.

We expect to incur increasing expenses over the next several years, principally to develop ARX-01, including completion of the first two Phase 3 clinical trials, as well as to further increase our spending to manufacture, sell and market our product candidates. Contingent on our ability to secure additional funding, we plan to complete the third ARX-01 Phase 3 clinical trial required to submit an NDA. In

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addition, based on the availability of additional financial resources, subsequent to this offering, we plan to advance ARX-02 into Phase 3 trials, submit an NDA and commercialize it ourselves or with a partner in the United States. Further development of ARX-03 will depend on the identification of a partner to support this effort.

Furthermore, upon closing of this offering, we expect to incur additional costs associated with operating as a public company. As a result, we expect to continue to incur significant and increasing operating losses for the foreseeable future.

Financial Overview

Revenue

To date, we have not generated any revenue. We do not expect to receive any revenues from any product candidates that we develop until we obtain regulatory approval and commercialize our products or enter into collaborative agreements with third parties.

Research and Development Expenses

The majority of our operating expenses to date have been for research and development activities related to ARX-01, ARX-02 and ARX-03. Research and development expenses consist of:

- expenses incurred under agreements with contract research organizations, or CROs, and clinical trial sites;
- employee and consultant-related expenses, which include salaries, benefits and stock-based compensation;
- payments to third party pharmaceutical and engineering development contractors;
- payments to third party manufacturers; and
- depreciation and other allocated expenses, which include direct and allocated expenses for rent and maintenance of facilities and equipment, depreciation of leasehold improvements and equipment and laboratory and other supply costs.

Conducting research and development is central to our business model. Product candidates in late stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of late stage clinical trials. We plan to increase our research and development expenses for the foreseeable future as we seek to complete development of ARX-01, and subsequently advance the development of ARX-02 and ARX-03.

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Prior to January 1, 2009, we did not track our internal research and development costs or our personnel and personnel-related costs on a project-by-project basis. Our development resources are shared among all of our programs. Since January 1, 2009, we have tracked external development expenses on a program-by-program basis. Compensation and benefits, facilities, depreciation, stock-based compensation, and development support services are not allocated specifically to projects and are considered research and development overhead. Below is a summary of our research and development expenses for the year ended December 31, 2009 and the nine months ended September 30, 2010:

	Year Ended December 31, 2009	Nine Months Ended September 30, 2010
	(in thousands)	
ARX-01	$ 5,343	$ 505
ARX-02	2,721	517
ARX-03	1,426	1,538
Overhead	6,012	3,749
Total Research & Development Expenses	$ 15,502	$ 6,309

Due to the inherently unpredictable nature of product development, we are unable to estimate the costs we will incur in the continued development of ARX-01, ARX-02 and ARX-03. Development timelines, the probability of success and development costs can differ materially from expectations. While we are currently focused on advancing ARX-01, and subsequently ARX-02 and ARX-03, our future research and development expenses will depend on the clinical success of each product candidate as well as ongoing assessments of the commercial potential of our product candidates. In addition, we cannot predict which product candidates may be subject to future collaborations, when these arrangements will be secured, if at all, and to what degree these arrangements would affect our development plans and capital requirements. We expect to incur increased research and development expenses as we commence two of our planned ARX-01 Phase 3 clinical trials, and subject to additional funding, our third Phase 3 clinical trial required to file our NDA.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries, benefits and stock-based compensation for personnel in administration, finance and business development. Other significant expenses include legal expenses to pursue patent protection of our intellectual property, allocated facility costs and professional fees for general legal and consulting services. We expect general and administrative expenses to increase as we begin operating as a public company and continue to build our corporate infrastructure in support of continued development of our product candidates.

Interest Income

Interest income consists of interest earned on our cash, cash equivalents and short-term investments.

Interest Expense

Interest expense consists primarily of interest accrued or paid on our loan and security agreement and our convertible notes.

Other Income (Expense), net

Other income (expense), net consists primarily of the change in the fair value of our warrants to purchase convertible preferred stock. Our outstanding warrants to purchase convertible preferred stock are classified as liabilities and, as such, are remeasured to fair value at each balance sheet date with the

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corresponding gain or loss from the adjustment recorded as other income (expense), net. We will continue to record adjustments to the fair value of the warrants until they are exercised, converted to warrants to purchase common stock or expire, at which time the warrants will no longer be remeasured at each balance sheet date. Upon the closing of this offering, our outstanding warrants to purchase convertible preferred stock will automatically convert into warrants to purchase common stock.

Provision for Income Taxes

Since inception, we have incurred net losses and have not recorded any U.S. federal or state income tax provisions as these losses have been offset by valuation allowances.

Reduction in Work Force

On December 7, 2009, we announced a workforce reduction of approximately 44%, or 14 employees, a majority of whom were employed in product development and related support functions. This decision was made based on the challenging economic conditions and a decline in forecasted research and development activities then expected for the year ended December 31, 2010.

As a result of this workforce reduction, we recorded a charge of $0.1 million related to employee severance and other benefits which was included as operating expenses in the statement of operations for the year ended December 31, 2009. As of December 31, 2009, we had paid $30,000 for these employee severance and other termination benefits and had accrued the remaining $89,000 on the balance sheet. During the nine months ended September 30, 2010, we paid the remaining amounts outstanding.

Critical Accounting Policies and Estimates

Our financial statements are prepared in accordance with generally accepted accounting principles in the United States which requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues, costs and expenses and related disclosures. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances. In many instances, we could have reasonably used different accounting estimates, and in other instances, changes in the accounting estimates are reasonably likely to occur from period-to-period. Accordingly, actual results could differ significantly from the estimates made by our management. To the extent that there are material differences between these estimates and actual results, our future financial statement presentation, financial condition, results of operations and cash flows will be affected. We believe that the accounting policies discussed below are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management s judgments and estimates.

Stock-Based Compensation

We recognize compensation costs related to stock options and shares of restricted stock granted to employees based on the estimated fair value of the awards on the date of grant, net of estimated forfeitures. We estimate the grant date fair value, and the resulting stock-based compensation expense, using the Black-Scholes option-pricing model. The grant date fair value of the stock-based awards is generally recognized on a straight-line basis over the requisite service period, which is generally the vesting period of the respective awards.

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The fair value of the stock-based awards granted to our employees was estimated on the grant dates using the Black-Scholes option-pricing model with the following assumptions:

	Year Ended December 31,			Nine Months Ended September 30,	
	2007	2008	2009	2009	2010
				(Unaudited)	
Expected volatility	72%	74%	73%	73%	75%
Expected term (in years)	6.25	6.25	6.25	6.25	5.75 - 6.25
Risk-free interest rate	3.6% - 4.6%	3.5%	3.0%	3.0%	1.6% - 2.4%
Expected dividend yield	0%	0%	0%	0%	0%

The Black-Scholes model requires the use of highly subjective and complex assumptions which determine the fair value of share-based awards, including the option s expected term and the price volatility of the underlying stock. These assumptions include:

Expected Term. The expected term represents the period that our share-based awards are expected to be outstanding and was primarily determined using the simplified method in accordance with guidance provided by the SEC. For option grants considered to be plain vanilla, the simplified method calculates the expected term as the average of the time-to-vesting and the contractual life of the awards. For awards that are not considered plain vanilla, the expected term is based on the historical option exercise behavior of our employees and post-vesting cancellations.

Expected Volatility. The expected volatility is derived from historical volatilities of several unrelated public companies within our industry that are deemed to be comparable to our business because we have limited information on the volatility of our common stock since we have no trading history. When making the selections of our industry peer companies to be used in the volatility calculation, we considered the size, operational and economic similarities to our principle business operations.

Expected Dividend. The expected dividend was assumed to be zero as we have never paid dividends and have no current plans to do so.

Risk-Free Interest Rate. The risk-free interest rate is based on the U.S. Treasury yield in effect at the time of grant for zero coupon U.S. Treasury notes with maturities approximately equal to each award s expected term.

In addition to assumptions used in the Black-Scholes option-pricing model, we must also estimate a forfeiture rate to calculate the stock-based compensation for our awards. Our forfeiture rate is based on an analysis of our actual forfeitures. We will continue to evaluate the appropriateness of the forfeiture rate based on actual forfeiture experience, analysis of employee turnover and other factors. Quarterly changes in the estimated forfeiture rate can have a significant impact on our stock-based compensation expense as the cumulative effect of adjusting the rate is recognized in the period the forfeiture estimate is changed. If a revised forfeiture rate is higher than the previously estimated forfeiture rate, an adjustment is made that will result in a decrease to the stock-based compensation expense recognized in the financial statements. If a revised forfeiture rate is lower than the previously estimated forfeiture rate, an adjustment is made that will result in an increase to the stock-based compensation expense recognized in the financial statements.

We will continue to use judgment in evaluating the expected term, expected volatility and forfeiture rate related to our own stock-based compensation on a prospective basis. As we continue to accumulate additional data related to our common stock, we may have refinements to the estimates of our expected volatility, expected terms and forfeiture rates, which could materially impact our future stock-based compensation expense.

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We are also required to estimate the fair value of the common stock underlying our stock-based awards when performing the fair value calculations with the Black-Scholes option-pricing model. The fair values of the common stock underlying our stock-based awards were estimated on each grant date by our board of directors, with input from management. Our board of directors is comprised of a majority of non-employee directors with significant experience in the pharmaceutical and biotechnology industries. We believe that our board of directors has the relevant experience and expertise to determine a fair value of our common stock on each respective grant date. Given the absence of a public trading market of our common stock, and in accordance with the American Institute of Certified Public Accountants Practice Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*, our board of directors exercised reasonable judgment and considered numerous objective and subjective factors to determine the best estimate of the fair value of our common stock including:

- contemporaneous and retrospective valuations performed by unrelated third party specialists;
- prices for our convertible preferred stock sold to outside investors in arm s-length transactions;
- rights, preferences and privileges of our convertible preferred stock relative to those of our common stock;
- actual operating and financial performance;
- hiring of key personnel and the experience of our management;
- status of research and development efforts, including the clinical results for ARX-01, ARX-02 and ARX-03;
- risks inherent in the development of our products and services;
- likelihood of achieving a liquidity event, such as an initial public offering or a sale of our company given prevailing market conditions and the nature and history of our business;
- market value of a comparable group of privately held pharmaceutical and biotechnology companies that are in a similar state of development to ours;
- illiquidity of stock-based awards involving securities in a private company;
- industry information such as market size and growth; and
- macroeconomic conditions.

In valuing our common stock, the board of directors determined the equity value of our business by taking a weighted combination of the value indications under two valuation approaches, an income approach and a market approach. The income approach estimates the present value of future estimated cash flows, based upon forecasted revenue and costs. These future cash flows are discounted to their present values using a discount rate derived from an analysis of the cost of capital of comparable publicly traded companies in our industry or similar lines of business as of each valuation date and is adjusted to reflect the risks inherent in our cash flows. The market approach estimates the fair value of a company by applying market multiples of comparable publicly traded companies in our industry or similar lines of business which are based on

key metrics implied by the enterprise values or acquisition values of our comparable publicly traded companies.

The fair value of our business was then allocated to each of our classes of stock using either the Option Pricing Method or the Probability Weighted Expected Return Method.

The Option Pricing Method, or OPM, treats common stock and convertible preferred stock as call options on an enterprise value, with exercise prices based on the liquidation preference of the convertible

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preferred stock. Therefore, the common stock has value only if the funds available for distribution to the stockholders exceeds the value of the liquidation preference at the time of a liquidity event such as a merger, sale or initial public offering, assuming the enterprise has funds available to make a liquidation preference meaningful and collectible by the stockholders. The common stock is modeled to be a call option with a claim on the enterprise at an exercise price equal to the remaining value immediately after the convertible preferred stock is liquidated. The OPM uses the Black-Scholes option-pricing model to price the call option. The OPM is appropriate to use when the range of possible future outcomes is so difficult to predict that forecasts would be highly speculative.

The Probability Weighted Expected Return Method, or PWERM, involves a forward-looking analysis of the possible future outcomes of the enterprise. This method is particularly useful when discrete future outcomes can be predicted at a high confidence level with a probability distribution. Discrete future outcomes considered under the PWERM included non-IPO market based outcomes as well as IPO scenarios. In the non-IPO scenarios, a large portion of the equity value is allocated to the convertible preferred stock to incorporate higher aggregate liquidation preferences. In the IPO scenarios, the equity value is allocated pro rata among the shares of common stock and each series of convertible preferred stock, which causes the common stock to have a higher relative value per share than under the non-IPO scenario. The fair value of the enterprise determined using the IPO and non-IPO scenarios will be weighted according to the board of directors estimate of the probability of each scenario.

Over time, as certainty developed regarding possible discrete events, including an IPO, the allocation methodology utilized to allocate our enterprise value to our common stock transitioned from the OPM, which was utilized through July 2009, to the PWERM, which has been utilized since July 2009.

Information regarding stock option grants to our employees since January 1, 2009 is summarized as follows:

Grant Date	Number of Options Granted	Exercise Price	Fair Value Per Share of Common Stock	Aggregate Grant Date Fair Value[1]
July 1, 2009	231,875	$ 5.52	$ 5.52	$ 452,000
June 15, 2010	83,125	1.20	2.56	165,000
June 15, 2010	1,233,485	2.56	2.56	2,471,000
November 4, 2010	125,000	5.32	5.32	450,000

[1] Aggregate grant date fair value was determined using the Black-Scholes option pricing model.

The intrinsic value of all outstanding options as of September 30, 2010 was $5.9 million based on the estimated fair value for our common stock of $5.00 per share, the initial public offering price.

No single event caused the valuation of our common stock to increase or decrease through September 30, 2010. Instead, a combination of the factors described below in each period led to the changes in the fair value of the underlying common stock.

October 2008 to July 2009. After a period of significant volatility in the United States and global capital markets during the third and fourth quarters of 2008, capital market conditions began to stabilize and recover in early 2009. During this time period, we reported our first successful ARX-01 Phase 2 study results in November 2008, in the midst of significant financial market turmoil. We reported positive results for an additional efficacy study for ARX-01 in April 2009 and a device functionality study for ARX-01 in July 2009.

As of December 31, 2008, the board determined a fair value of our common stock to be $5.52 per share. The December 31, 2008 contemporaneous valuation determined the enterprise value using a market

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approach due to the uncertain nature of the financial projections underlying the income approach and the significant ongoing capital requirements for our business to reach profitability. In applying the OPM to the enterprise value during this period, the expected time to a liquidity event of 3.0 years was based on a reasonable time frame for us to achieve significant milestones in our business strategy and experience a liquidity event. The volatility of 62% was based on the median volatility over the expected time to a liquidity event for our comparable publicly traded companies. The risk-free interest rate of 1.0% was based on the yield on a three-year U.S. Treasury bond corresponding to the expected time to a liquidity event. Based on a lack of a public market for our common stock, a discount of 39% was based upon a protective put analysis using the same assumptions for the term, volatility and risk-free rate. For options granted during this period, our board of directors determined that the fair value of our common stock remained unchanged at $5.52 per share as the positive clinical data results were offset by the deterioration of the financial markets during the period.

December 2009 to June 2010. In late October 2009, we completed a successful ARX-01 End of Phase 2 meeting with the FDA. Between November 2009 and April 2010, the United States economy and capital markets continued to improve. We also reported our first positive Phase 2 data from our ARX-03 program in October 2009. In early 2010, we were successful in hiring a new Chief Executive Officer. During the second quarter of 2010, we received positive Phase 2 data on our ARX-02 program and completed an End of Phase 2 meeting with the FDA for our ARX-03 program. Despite our positive clinical results, the End of Phase 2 meetings with the FDA and the improved conditions of the public markets, there was a limited availability for private capital. In November 2009, we closed our Series C convertible preferred stock financing for approximately $3.94 per share raising a total of $14.7 million in proceeds, which was below the $16.00 per share we received in connection with our Series B convertible preferred stock financing in February 2008. During the first quarter of 2010, we continued to focus on private sources of capital, but traditional venture capital investors continued to be highly risk averse and faced significant industry-wide challenges. During the second quarter of 2010, we became focused on establishing a financing strategy that would enable our product candidates to advance into Phase 3 development. Despite the challenges in the private financing, we began to have initial discussions with a small number of banks regarding our prospects for an IPO.

As of December 31, 2009, the board determined a fair value of our common stock to be $1.20 per share. As noted previously, the OPM is preferred when future outcomes are difficult to predict and the PWERM becomes useful when discrete future outcomes become more predictable. During the period between July 2, 2009 and December 30, 2009, when the board of directors did not make valuation determinations or grant any stock-based awards, the range of discrete events, specifically IPO scenarios, became fairly well established; therefore, the PWERM was utilized to estimate the fair value of our common stock during this period. The PWERM allocation method used a risk-adjusted discount rate of 46% based upon an adjusted capital asset pricing model and a lack of marketability discount rate of 30% in the remaining private scenario. The expected outcomes were weighted as follows: (1) 20% towards IPO scenarios occurring during late 2010 and through 2012, valued using the market approach; (2) 20% towards a sale occurring during late 2010 and through 2012, valued using the market approach; (3) 20% towards a recapitalization, valued using the income approach; and (4) 40% to remaining a private operating company, valued using the income approach. For options granted in June 2010, our board of directors originally estimated the fair value of our common stock to be $1.20 per share. However, this fair value, which was used as the exercise price for the stock options granted in June 2010, was subsequently revisited for financial reporting purposes when our board of directors began to analyze the prospects of an IPO. As such, our board of directors subsequently determined a fair value of our common stock for financial reporting purposes to be $2.56 per share. The PWERM allocation method was used with a risk-adjusted discount rate of 39% based upon an adjusted capital asset pricing model and a lack of marketability discount rate of 30% in the remaining private scenario. The slight decrease in the discount rate from the December 31, 2009 valuation was due to changes in industry and market conditions. The expected outcomes were weighted as follows: (1) 32.5% towards IPO scenarios

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occurring during late 2010 and through 2012, valued using the market approach; (2) 20% towards a sale occurring during late 2010 and through 2012, valued using the market approach; (3) 20% towards a recapitalization, valued using the income approach; and (4) 27.5% to remaining a private operating company, valued using the income approach. The increase in the fair value of our common stock from our December 30, 2009 valuation was primarily attributable to our business developments in 2010 along with our move towards an IPO, including meeting with banks to discuss our IPO prospects. For the stock options we granted in June 2010, we recorded our stock-based compensation utilizing the updated fair value of $2.56 per share because our board determined that there were no events in the period between the option grants on June 15, 2010 and the date of the retrospective valuation on June 30, 2010 that would result in a change to the fair value of the underlying common stock. Most of the stock options granted in June 2010 were subsequently modified in December 2010 as discussed further below.

July 2010 to November 2010. As of September 30, 2010, the board determined a fair value of our common stock to be $5.32 per share. The PWERM allocation method was used with a risk-adjusted discount rate of 33.7% based upon an adjusted capital asset pricing model and a lack of marketability discount rate of 30% in the remaining private scenario. The slight decrease in the discount rate from the June 30, 2010 retrospective valuation was due to changes in industry and market conditions. The expected outcomes were weighted as follows: (1) 57.5% towards IPO scenarios occurring during 2011 and through 2012, valued using the market approach; (2) 20% towards a sale occurring during 2011, valued using the market approach; (3) 12.5% towards a recapitalization, valued using the income approach; and (4) 10% to remaining a private operating company, valued using the income approach. The increase in the fair value of our common stock from our June 2010 valuation was primarily attributable to our progress towards an IPO, including discussions with investment banks regarding our IPO.

Stock option modification in December 2010. In December 2010, our board of directors, out of an abundance of caution, allowed all employees and non-employees to increase the exercise price of stock options granted to them on June 15, 2010 in light of the potential risk of adverse tax consequences under Internal Revenue Service Code Section 409A. Under Section 409A, stock options with an exercise price that is less than the fair market value of the stock on the date of grant may be deemed deferred compensation subject to adverse taxation under Section 409A. As described above, when setting the exercise price for the June 15, 2010 stock option grants, the board determined the fair market value of our common stock to be $1.20 per share, which valuation was subsequently revisited for financial reporting purposes, when our board of directors began to analyze the prospects of an IPO, and determined it to be $2.56 per share. We believe that the board s determination of the fair market value of our common stock on June 15, 2010 in reliance upon all material facts available to the board on that date, was reasonable. However, given the potential adverse tax consequences to the optionees if the Internal Revenue Service determines that our original determination was grossly unreasonable, our board decided, out of an abundance of caution, to make the offer to amend. Based on the elections made by the optionees, 1,233,485 of the 1,316,610 options granted on June 15, 2010, including vested and unvested options, were amended on December 27, 2010, such that the original exercise prices of $1.20 per share were increased to $2.56 per share. Accordingly, holders of options to purchase an aggregate 83,125 shares of common stock elected to leave their options unchanged. No other terms of the options were modified and there were no incremental stock-based compensation charges as a result of the re-pricing.

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Our stock-based compensation expense for awards granted to our employees is as follows:

	Year Ended December 31,			Nine Months Ended September 30,	
	2007	2008	2009	2009	2010
			(in thousands)	(Unaudited)	
Research and development	$ 25	$ 66	$ 167	$ 74	$ 539
General and administrative	4	60	115	97	444
Total stock-based compensation	$ 29	$ 126	$ 282	$ 171	$ 983

As of December 31, 2009 and September 30, 2010, we had $710,000 and $2.3 million of unrecognized stock-based compensation expense, net of estimated forfeitures, that is expected to be recognized over a weighted average period of 2.7 and 1.6 years. In future periods, our stock-based compensation expense is expected to increase as a result of our existing unrecognized stock-based compensation to be recognized as these awards vest and as we issue additional stock-based awards to attract and retain employees.

Non-Employee Stock-Based Compensation

We account for stock options and shares of restricted stock granted to non-employees based on the estimated fair value of the awards using the Black-Scholes option-pricing model. The measurement of stock-based compensation for awards granted to non-employees is subject to periodic adjustments as the awards vest, and the resulting change in value, if any, is recognized in our statement of operations during the period the related services are rendered.

Stock-based compensation expense for awards granted to non-employees was $4,000, $71,000, $30,000, $30,000 and $31,000 during the years ended December 31, 2007, 2008, 2009 and the nine months ended September 30, 2009 and 2010.

There is inherent uncertainty in these estimates and if different assumptions had been used, the fair value of the awards granted to non-employees and the related stock-based compensation expense could have been significantly different.

Liability Associated with Warrants to Purchase Convertible Preferred Stock

Freestanding warrants to purchase shares of our convertible preferred stock are classified as liabilities on our balance sheets at fair value because the warrants may conditionally obligate us to redeem the underlying convertible preferred stock at some point in the future. The warrants are subject to remeasurement at each balance sheet date, and any change in fair value is recognized as a component of other income (expense), net, in the statements of operations. We estimated the fair value of these warrants at the respective balance sheet dates using the Black-Scholes option-pricing model. We use assumptions to estimate the fair value of the warrants including the remaining contractual terms of the warrants, risk-free interest rates, expected dividend yields and the expected volatility of the underlying stock. These assumptions are subjective and the fair value of the warrants to purchase convertible preferred stock could have differed significantly had we used different assumptions.

In connection with an equipment financing agreement entered into in March 2007, we issued warrants to purchase 2,500 shares of our Series A convertible preferred stock. The relative fair value of our Series A warrants of $1,000 was recorded on our balance sheet upon issuance as a warrant liability and as a deferred financing cost in other assets. The Series A warrant liability has subsequently been remeasured to fair value at each reporting date and, as of December 31, 2009 and September 30, 2010, the Series A warrant liability was $2,000 and $10,000. The change in the fair value of these warrants resulted in a

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gain of $8,000 during the year ended December 31, 2009 and a charge of $8,000 for the nine months ended September 30, 2010 to other income (expense), net.

In connection with a loan and security agreement entered into in September 2008, we issued warrants to purchase 56,250 shares of our Series B convertible preferred stock. At the close of our Series C convertible preferred stock offering in November 2009, these warrants became exercisable for the Series C convertible preferred stock and the number of exercisable shares increased to 228,264. The relative fair value of these warrants of $0.2 million upon issuance was recorded on our balance sheet as a warrant liability and as a deferred financing cost in other assets. The Series C warrant liability related to the loan and security agreement has subsequently been remeasured to fair value at each reporting date and, as of December 31, 2009 and September 30, 2010, the warrant liability was $0.2 million and $1.0 million. The change in the fair value of these warrants resulted in a gain of $0.1 million during the year ended December 31, 2009 and a charge of $0.8 million during the nine months ended September 30, 2010 to other income (expense), net.

In connection with the issuance of a bridge loan financing in September 2010, we issued convertible notes, or the 2010 notes, and warrants, or the 2010 warrants, that are exercisable into (1) shares of preferred stock sold in the next equity financing with proceeds in excess of $15.0 million with an exercise price equal to the price of the preferred stock sold in such equity financing or (2) shares of our Series C convertible preferred stock at a price $3.94 per share. The aggregate number of shares exercisable under the 2010 warrants will equal 25% of the principal amount of the corresponding 2010 notes divided by (1) the per share price of the equity securities sold in the next qualified equity financing or (2) the price of the Series C convertible preferred stock of $3.94 per share. In order to determine a fair value for the 2010 warrants upon issuance of the bridge loan, we evaluated multiple potential outcomes using the intrinsic value or Black-Scholes value depending on the scenario and discounted these values back to September 30, 2010 while applying our estimated probabilities to each scenario value. These scenarios included a potential initial public offering or potential merger or sale at different times during 2011 and 2012 as well as remaining private with estimated future qualifying equity financings. Accordingly, we determined the fair value of the 2010 warrants to be $1.2 million, which was recorded as a convertible preferred stock warrant liability and a debt discount. There was no change in the fair value of these between the time of issuance on September 14, 2010 and the end of the period on September 30, 2010.

We will continue to record adjustments to the fair value of the warrants to purchase convertible preferred stock until they are exercised, converted into warrants to purchase common stock or expire, at which time the warrants will no longer be remeasured at each balance sheet date. At that time, the then-current aggregate fair value of these warrants will be reclassified from liabilities to additional paid-in capital and we will no longer remeasure the liability associated with these warrants to purchase convertible preferred stock to fair value.

Bridge Loan and Beneficial Conversion Features

On September 14, 2010, we entered into a bridge loan financing, in which we issued 2010 notes to certain existing investors for an aggregate purchase price of $8.0 million. The 2010 notes cannot be prepaid without written consent of the holders of the 2010 notes, accrue interest at a rate of 4.0% per annum and have a maturity date of the earliest of (1) September 14, 2011 or (2) an event of default. The principal and the interest under the 2010 notes are automatically convertible (1) into the securities that are sold in our next equity financing prior to September 14, 2011, with total proceeds of not less than $15.0 million, or qualified financing, at the price at which such securities are sold to other investors in the qualified financing, (2) into securities that are sold in our initial public offering at a conversion price equal to 80% of the initial public offering price or (3) following September 14, 2011, with the consent of the holders of a majority of the principal amount of the 2010 notes still outstanding, into shares of Series C convertible preferred stock at the Series C price of $3.94 per share. In addition, holders of the 2010 notes have the option to convert the 2010 notes into shares of Series C convertible preferred stock in connection with a

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liquidation, sale of substantially all of our assets, or merger, if such liquidation, sale of substantially all of our assets, or merger occurs before the qualified financing or initial public offering.

Upon the election of the holders of a majority of the aggregate principal amount payable under the 2010 notes, we will issue an additional $4.0 million 2010 notes. This additional $4.0 million was determined to be a call option that has been recorded at its fair value of $0.5 million as a debt discount that will be amortized to interest expense over the one-year term of the loan. The fair value of the call option was determined by evaluating multiple potential outcomes using a market approach and an income approach depending on the scenario and discounted these values back to September 30, 2010 while applying estimated probabilities to each scenario value. As of September 30, 2010, these scenarios include a potential initial public offering, merger or sale at different times during 2011 and 2012 as well as remaining private. The call option will be remeasured to its fair value at the end of each reporting period until expired or exercised. During the first quarter of the year ending December 31, 2011, the 2010 notes were amended so that the call option will expire upon the closing of this offering.

Also in connection with the bridge loan financing, we issued the 2010 warrants with a fair value of $1.2 million, which were recorded as a debt discount that will be amortized to interest expense over the one-year term of the loan.

We used considerable judgment in determining the fair value of these instruments and had we used different assumptions, the resulting fair values could have been materially different.

In addition, we also recognized a beneficial conversion feature related to the 2010 warrants and the call option discussed above in the aggregate amount of $1.7 million as an additional debt discount that will also be amortized to interest expense over the one-year term of the bridge loan. In addition to these beneficial conversion features, the 2010 notes have contingent beneficial conversion features related to the conversion options following the maturity of the 2010 notes or in connection with a liquidation, sale or merger into Series C convertible preferred stock. The contingent beneficial features were determined on the date of the issuance of the 2010 notes based on the intrinsic value of this feature in the amount of $2.8 million. This beneficial conversion feature will be recorded if and when the related contingent event occurs.

Income Taxes

Significant management judgment is required in determining our provision or benefit for income taxes, any uncertain tax positions, deferred tax assets and liabilities, and any valuation allowance recorded against our net deferred tax assets. We make these estimates and judgments about our future taxable income that are based on assumptions that are consistent with our future plans. As of December 31, 2008 and 2009, we have recorded a full valuation allowance on our net deferred tax assets due to uncertainties related to our ability to utilize our deferred tax assets in the foreseeable future. These deferred tax assets primarily consist of certain net operating loss carryforwards and research and development tax credits. Should the actual amounts differ from our estimates, the amount of our valuation allowance could be materially impacted.

Since inception, we have incurred operating losses and, accordingly, we have not recorded a provision for income taxes for any of the periods presented. Accordingly, there have not been significant changes to our provision or benefit for income taxes during the years ended December 31, 2007, 2008 or 2009 and we do not expect any significant changes until we are no longer incurring losses.

As of December 31, 2009, we had federal net operating loss carryforwards of $52.9 million and state net operating loss carryforwards of $52.8 million. We also had federal and state research credit carryforwards of $0.9 million and $0.6 million. Realization of deferred tax assets is dependent upon future earnings, if any, the timing and amount of which are uncertain. Accordingly, the net deferred tax

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assets have been fully offset by a valuation allowance. If not utilized, the federal net operating loss and tax credit carryforwards will expire beginning in 2025 and the state net operating loss will begin expiring in 2017. Utilization of these net operating losses and credit carryforwards may be subject to an annual limitation due to applicable provisions of the Internal Revenue Section 382 and state and local tax laws if we experience an ownership change in the future including, for example, as a result of the shares issued in this offering aggregated with certain other sales of our stock before or after this offering.

Results of Operations Comparison of the Nine Months Ended September 30, 2009 and 2010

	Nine Months Ended September 30,		Increase / (Decrease)	% Increase / (Decrease)
	2009	2010		
	(Unaudited) (dollars in thousands)			
Research and development	$ 13,180	$ 6,309	$ (6,871)	(52)%
General and administrative	2,510	3,033	523	21 %
Interest income	37	2	(35)	(95)%
Interest expense	(965)	(656)	(309)	(32)%
Other income (expense), net	196	(825)	(1,021)	(521)%

Revenue

We did not generate any revenue during the nine months ended September 30, 2009 or 2010.

Research and Development Expenses

Research and development expenses decreased by $6.9 million, or 52%, to $6.3 million during the nine months ended September 30, 2010 from $13.2 million during the nine months ended September 30, 2009. The $6.8 million decrease reflects a decrease of $4.6 million in development expenses related to our ARX-01 development program and a decrease of $1.8 million in development expenses related to our ARX-02 development program.

General and Administrative Expenses

General and administrative expenses increased by $0.5 million, or 21%, to $3.0 million during the nine months ended September 30, 2010 from $2.5 million during the nine months ended September 30, 2009. This increase was due to $0.3 million in stock option compensation expense, $0.1 million in personnel related expense and $0.1 million in legal expense.

Interest Income

Interest income decreased by $35,000 to $2,000 during the nine months ended September 30, 2010 from $37,000 during the nine months ended September 30, 2009. This decrease was due to a decrease in our average cash, cash equivalent and short-term investment balances during the nine months ended September 30, 2010.

Interest Expense

Interest expense decreased by $0.3 million to $0.7 million during the nine months ended September 30, 2010 from $1.0 million during the nine months ended September 30, 2009. This decrease was primarily attributable to our paying down of our outstanding debt during the related periods without incurring additional debt until the end of the nine months ended September 30, 2010, therefore, maintaining lower average debt balance during the nine months ended September 30, 2010.

Other Income (Expense), net

Other income (expense), net changed by $1.0 million to an expense of $0.8 million during the nine months ended September 30, 2010 from income of $0.2 million during the nine months ended

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September 30, 2009. The change in other income (expense), net primarily reflects the remeasurement of our convertible preferred stock warrant liabilities.

Results of Operations Comparison of the Years Ended December 31, 2008 and 2009

	Year Ended December 31, 2008	2009	Increase / (Decrease)	% Increase / (Decrease)
	(dollars in thousands)			
Research and development	$ 18,325	$ 15,502	$ (2,823)	(15)%
General and administrative	2,365	3,529	1,164	49 %
Interest income	484	33	(451)	(93)%
Interest expense	(404)	(1,242)	838	207 %
Other income (expense), net	(52)	121	173	333 %

Revenue

We did not generate any revenue for the years ended December 31, 2008 or 2009.

Research and Development Expenses

Research and development expenses decreased by $2.8 million, or 15%, to $15.5 million during the year ended December 31, 2009 from $18.3 million during the year ended December 31, 2008. This decrease was primarily attributable to a $1.9 million reduction in clinical development costs for ARX-01 as two Phase 2 studies, which were initiated in the year ended December 31, 2008 and completed later that year and early in the year ended December 31, 2009. This resulted in fewer contract pharmaceutical, engineering and manufacturing costs and lab expenses during the year ended December 31, 2009. The remaining decrease was attributable to a reduction in activity related to contract pharmaceutical, engineering and manufacturing efforts associated with our ARX-02 and ARX-03 development programs during the year ended December 31, 2009.

General and Administrative Expenses

General and administrative expenses increased by $1.1 million, or 49%, to $3.5 million during the year ended December 31, 2009 from $2.4 million during the year ended December 31, 2008. This increase was attributable to a $0.5 million increase in personnel costs as result of increased headcount, a $0.4 million increase in consulting and professional services related to market research for ARX-01, ARX-02 and ARX-03, and a $0.1 million increase in travel costs related to business development and legal fees to pursue international and domestic patents of our intellectual property during the year ended December 31, 2009.

Interest Income

Interest income decreased by $0.5 million to $33,000 during the year ended December 31, 2009 from $0.5 million during the year ended December 31, 2008. This decrease was directly attributable to the $9.5 million decrease in our working capital during the year ended December 31, 2009 as we used the proceeds received from our Series B convertible preferred stock financing and debt financing during the year ended December 31, 2008 to fund operations until we completed our Series C convertible preferred stock financing in November 2009.

Interest Expense

Interest expense increased by $0.8 million to $1.2 million during the year ended December 31, 2009 from $0.4 million during the year ended December 31, 2008. This increase was primarily due to the interest and deferred financing costs we incurred as a result of the $12.0 million in proceeds received from our debt financing in November 2008.

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Other Income (Expense), net

Other income (expense), net changed by $0.2 million to income of $0.1 million during the year ended December 31, 2009 from an expense of $0.1 million during the year ended December 31, 2008. The change in other income (expense), net was due to the decrease in the fair value of our warrants to purchase convertible preferred stock combined with realized gains on the sale of investments during the year ended December 31, 2009.

Results of Operations Comparison of the Years Ended December 31, 2007 and 2008

	Year Ended December 31,		Increase / (Decrease)	% Increase / (Decrease)
	2007	2008		
	(dollars in thousands)			
Research and development	$ 8,209	$ 18,325	$ 10,116	123 %
General and administrative	2,082	2,365	283	14 %
Interest income	687	484	(203)	(30)%
Interest expense	(25)	(404)	379	1,516 %
Other income (expense), net	(1)	(52)	(51)	(5,100)%

Revenue

We did not generate any revenue for the years ended December 31, 2007 or 2008.

Research and Development Expenses

Research and development expenses increased by $10.1 million, or 123%, to $18.3 million during the year ended December 31, 2008 from $8.2 million during the year ended December 31, 2007. This increase in research and development costs was directly attributable to an additional $3.7 million in clinical research costs, $3.8 million in pharmaceutical, engineering and manufacturing costs, $1.1 million in increased personnel costs to support our Phase 2 clinical trials for ARX-01 and the commencement and completion of our Phase 1 trial for ARX-03 during the year ended December 31, 2008. In addition, we also incurred costs later in the year ended December 31, 2008 associated with the ARX-02 Phase 2 trial and related development.

General and Administrative Expenses

General and administrative expenses increased by $0.3 million, or 14%, to $2.4 million during the year ended December 31, 2008 from $2.1 million during the year ended December 31, 2007. This increase was primarily attributable to higher personnel costs including stock-based compensation costs due to increased headcount.

Interest Income

Interest income decreased by $0.2 million to $0.5 million during the year ended December 31, 2008 from $0.7 million during the year ended December 31, 2007. This decrease was primarily attributable to the use of the proceeds from our Series A convertible preferred financing in August 2006, combined with lower yields on our cash equivalents and short-term investments due to adverse market conditions during the year ended December 31, 2008.

Interest Expense

Interest expense increased by $0.4 million during the year ended December 31, 2008 from $25,000 during the year ended December 31, 2007. The increase was primarily due to the interest and deferred financing costs related to the proceeds received from the $12.0 million loan and security agreement in November 2008.

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Other Income (Expense), net

Other income (expense), net changed by $0.1 million during the year ended December 31, 2008 from an expense of $1,000 during the year ended December 31, 2007. The change is primarily attributable to the increase in the fair value of our convertible preferred stock warrant liability due to the issuance of warrants in conjunction with the loan and security agreement entered into during the year ended December 31, 2008.

Liquidity and Capital Resources

To date, we have funded our operations primarily with proceeds from the sale of convertible preferred stock and the proceeds received from our debt financings. To date, we have not generated any revenue from the sale of our product candidates and do not anticipate generating any revenues for the foreseeable future. We have incurred losses and generated negative cash flows from operations since inception. As of September 30, 2010, our principal sources of liquidity are our cash, cash equivalents and short-term investments, which totaled $8.1 million. We believe that our available cash, cash equivalents and short-term investments, not including the proceeds we will receive in this offering, will allow us to meet our obligations through at least March 2011. However, our forecast of the period of time through which our financial resources will be adequate to support our operations is forward-looking statement that involves risks and uncertainties, and actual results could vary materially.

From inception through September 30, 2010, we have received net proceeds of $54.9 million from the sale of convertible preferred stock and $21.6 million from our debt agreements. As of September 30, 2010, we have $14.4 million of debt outstanding, of which $6.4 million relates to our loan and security agreement and $8.0 million relates to our convertible notes.

Our recurring operating losses and our need for additional sources of capital to fund our ongoing operations raise substantial doubt about our ability to continue as a going concern. As a result, our independent registered public accounting firm included an explanatory paragraph in its report on our financial statements as of and for the year ended December 31, 2009 with respect to this uncertainty. We have no current source of revenue to sustain our present activities, and we do not expect to generate revenue for the foreseeable future. Accordingly, our ability to continue as a going concern will require us to obtain additional financing to fund our operations and there can be no assurance that additional financing will be available to us or that such financing, if available, will be available on terms favorable to us.

While we believe that our current cash and cash equivalents and the net proceeds from this offering and the interest earned on the proceeds will be sufficient to fund our current operations through the second quarter of 2012, we may raise additional funds within this period of time through collaborations, public or private debt or equity financings. Our existing capital resources and the net proceeds received from this offering will not be sufficient to enable us to fund our third Phase 3 trial for ARX-01 and, if we choose, to initiate clinical trials for our product candidates other than ARX-01. We will need to raise substantial additional capital to fund our operations, continue to develop our product candidates and commercialize and market our product candidates.

The sale of additional equity securities could result in additional dilution to our stockholders and those securities may have rights senior to those of our common stock. The incurrence of indebtedness would result in increased debt service obligations and could result in operating and financing covenants that would restrict our operations. We cannot assure you that financing will be available in the amounts we need or on terms acceptable to us, if at all.

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Cash Flows

The following summary of our cash flows for the periods indicated and has been derived from our financial statements which are included elsewhere in this prospectus:

	Year Ended December 31,			Nine Months Ended September 30,	
	2007	2008	2009	2009	2010
			(in thousands)	(Unaudited)	
Net cash used in operating activities	$ (8,861)	$ (18,903)	$ (19,418)	$ (15,241)	$ (9,042)
Net cash (used in) provided by investing activities	(2,217)	(9,935)	8,616	12,524	4,865
Net cash (used in) provided by financing activities	525	31,899	11,880	(1,627)	4,585

Cash Flows from Operating Activities

Net cash used in operating activities amounted to $8.9 million, $18.9 million, $19.4 million, $15.2 million and $9.0 million for the years ended December 31, 2007, 2008, 2009 and the nine months ended September 30, 2009 and 2010. The primary use of cash for our operating activities during these periods was to fund the development of our product candidates. Our cash used for operating activities also reflected changes in our working capital and adjustments for non-cash charges, such as depreciation and amortization of our fixed assets, stock-based compensation, interest expense related to our debt financings, and the revaluation of our convertible preferred stock warrant liability.

Cash used in operating activities of $9.0 million for the nine months ended September 30, 2010 reflected a net loss of $10.8 million, partially offset by aggregate non-cash charges of $2.5 million and a net change of $0.7 million in our net operating assets and liabilities. Non-cash charges primarily included $0.4 million of depreciation and amortization, $0.8 million for the revaluation of the convertible preferred stock warrant liability and $1.1 million in stock-based compensation. The net change in our operating assets and liabilities was primarily a result of accounts payable of $0.3 million.

Cash used in operating activities of $19.4 million during the year ended December 31, 2009 reflected a net loss of $20.1 million, partially offset by aggregate non-cash charges of $1.1 million and a net change of $0.4 million in our net operating assets and liabilities. Non-cash charges primarily included $0.5 million of depreciation and amortization, $0.5 million of stock-based compensation and $0.3 million of interest expense relating to our debt offset by a $0.1 million gain on the revaluation of our convertible preferred stock warrant liability. The net change in our operating assets and liabilities was primarily a result of a $0.4 million decrease in accounts payable and accrued liabilities during the year.

Cash used in operating activities of $18.9 million during the year ended December 31, 2008 reflected a net loss of $20.7 million, partially offset by aggregate non-cash charges of $1.1 million and a net change of $0.7 million in our net operating assets and liabilities. Non-cash charges primarily included $0.4 million of depreciation and amortization, $0.5 million of stock-based compensation, $0.1 million on the revaluation of the convertible preferred stock warrant liability and $0.2 million of interest expense relating to our debt. The net change in our operating assets and liabilities was primarily a result of a $0.7 million increase in our accounts payable and accrued expenses during the year.

Cash used in operating activities of $8.9 million during the year ended December 31, 2007 reflected a net loss of $9.6 million, partially offset by aggregate non-cash charges of $0.3 million and a net change of $0.4 million in our net operating assets and liabilities. Non-cash charges included $0.2 million of depreciation and amortization and $0.1 million of stock-based compensation. The net change in our

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operating assets and liabilities was primarily a result of the $0.6 million increase in the deferred rent liability during the year ended December 31, 2007 relating to the tenant improvement allowance we received from our landlord when we entered into our lease agreement for the office and laboratory facilities and also as a result of a $0.4 million increase in our prepaids and other assets.

Cash Flows from Investing Activities

Our investing activities have consisted primarily of our capital expenditures and purchases and sales of our available-for-sale investments. To date, we have not had significant capital expenditures and we do not have any significant capital expenditures currently planned.

During the nine months ended September 30, 2010, cash provided by investing activities was $4.9 million primarily as a result of $9.7 million in proceeds from the sale of our investments, partially offset by $4.8 million of purchases of investments.

During the year ended December 31, 2009, cash provided by investing activities of $8.6 million was primarily a result of $22.6 million in proceeds received from the sale of our investments to fund our working capital needs, partially offset by $13.9 million used for purchases of our investments.

During the year ended December 31, 2008, cash used in investing activities of $9.9 million was primarily a result of $0.5 million in capital expenditures and $14.1 million in purchases of investments using the proceeds we received in our Series B convertible preferred stock financing and the proceeds from a debt financing, partially offset by $4.7 million in proceeds received from sales of our investments.

During the year ended December 31, 2007, cash used in investing activities of $2.2 million was primarily a result of our capital expenditures of $1.6 million relating to the acquisition of pharmaceutical and development equipment and $8.1 million in purchases of investments, partially offset by $7.5 million in proceeds received from sales of our investments.

Cash Flows from Financing Activities

To date, we have financed our operations primarily with proceeds from the sale of convertible preferred stock and the proceeds received from our debt financings. As of September 30, 2010, we had outstanding debt of $14.4 million.

During the nine months ended September 30, 2010, cash provided by financing activities was $4.6 million, primarily as a result of the receipt of $8.0 million in borrowings received from the convertible note agreement entered into in September 2010 with certain existing investors, partially offset by principal repayments on our long-term debt of $3.5 million.

During the year ended December 31, 2009, cash provided by financing activities of $11.9 million was primarily a result of the receipt of $14.7 million from the sale of our Series C convertible preferred stock in November 2009, partially offset by principal repayments on our long-term debt of $2.9 million.

During the year ended December 31, 2008, cash provided by financing activities of $31.9 million was primarily a result of the receipt of $20.1 million in proceeds from the sale of our Series B convertible preferred stock in February 2008 combined with the receipt of $12.0 million in proceeds from our loan and security agreement in November 2008.

During the year ended December 31, 2007, cash provided by financing activities of $0.5 million was primarily a result of the receipt of $0.6 million from the issuance of long-term debt, partially offset by principal repayments on our long-term debt of $0.1 million.

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Contractual Obligations

The following table summarizes our outstanding contractual obligations and commitments as of December 31, 2009:

		Payment by Period		
Contractual Obligations:	**Total**	**2010**	**2011**	**2012 and Beyond**
		(in thousands)		
Long-term debt obligations, including current portion[1][2]	$ 10,772	$ 5,307	$ 5,465	$
Operating lease agreements[3]	783	338	348	97
Total	$ 11,555	$ 5,645	$ 5,813	$ 97

(1) Long-term debt includes principal and accrued interest ($1.0 million) under the $12.0 million loan and security agreement entered into in September 2008. As of September 30, 2010, our outstanding obligations under the loan and security agreement have decreased to $6.4 million, of which $5.0 million is the current portion, due to regular loan repayments of $3.4 million during the nine months ended September 30, 2010.

(2) Long-term debt obligations as of December 31, 2009 do not reflect our obligations under the convertible note agreement entered into in September 2010, of which $8.0 million in proceeds were received. The principal and accrued interest under the convertible note agreement is repayable on September 14, 2011 unless certain conversion criteria have been achieved, including the completion of a qualified initial public offering, other qualified equity financing or liquidation event, which would result in the notes converting into certain equity securities depending on the event that triggers the conversion.

(3) Operating lease agreements represent our obligation to make payments under our non-cancelable lease agreement for office and laboratory facilities in Redwood City, California. During the nine months ended September 30, 2010, we made regular lease payments of $0.3 million under the operating lease agreements.

Off-Balance Sheet Arrangements

Through September 30, 2010, we had not entered into any off-balance sheet arrangements and do not have any holdings in variable interest entities.

Segment Information

We have one business activity, which is the development and commercialization of product candidates for the treatment of pain, and a single reporting and operating unit structure.

Quantitative and Qualitative Disclosures about Market Risk

We are exposed to market risks in the ordinary course of our business. These risks primarily include risk related to interest rate sensitivities.

Interest Rate Risk

Our exposure to market risk for changes in interest rates relates primarily to our investment portfolio and our outstanding debt obligations. Our cash, cash equivalents and investment accounts as of September 30, 2010 total $8.1 million and consist primarily of cash, money market funds and U.S. government obligations with maturities of less than one year from the date of purchase. Our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of the interest rates in the United States. However, because of the short-term nature of the instruments in our portfolio, a sudden change in market interest rates would not be expected to have a material impact on our financial condition or our results of operation.

We have long-term debt of $14.4 million as of September 30, 2010 consisting of our outstanding obligations under a loan and security agreement and a convertible note agreement. Our obligations under these debt agreements carry interest rates that are fixed and are not subject to fluctuations. However, to

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the extent in the future we enter into other long-term debt arrangements, we would be subject to fluctuations in interest rates which could have a material impact on our future financial condition and results of operation.

Recent Accounting Pronouncements

In October 2009, the Financial Accounting Standards Board, or FASB, issued an accounting standards update that provides application guidance on whether multiple deliverables exist, how the deliverables should be separated and how the consideration should be allocated to one or more units of accounting. This update establishes a selling price hierarchy for determining the selling price of a deliverable. The selling price used for each deliverable will be based on vendor-specific objective evidence, if available, third-party evidence if vendor-specific objective evidence is not available, or estimated selling price if neither vendor-specific nor third-party evidence is available. We will be required to apply this guidance prospectively for revenue arrangements entered into or materially modified after January 1, 2011. We have not recognized any revenue since inception. Therefore, adoption of this guidance is not expected to have a material impact on our financial statements.

In January 2010, the FASB issued an amendment to an accounting standard which requires new disclosures for fair value measurements and provides clarification for existing fair value disclosure requirements. The amendment will require an entity to disclose separately the amounts of significant transfers in and out of Levels I and II fair value measurements and to describe the reasons for the transfers; and to disclose information about purchases, sales, issuances and settlements separately in the reconciliation for fair value measurements using significant unobservable inputs, or Level III inputs. This amendment clarifies existing disclosure requirements for the level of disaggregation used for classes of assets and liabilities measured at fair value and require disclosures about the valuation techniques and inputs used to measure fair value for both recurring and nonrecurring fair value measurements using Level II and Level III inputs. This guidance is effective for interim and annual reporting periods beginning after December 15, 2009, except for certain Level 3 activity disclosure requirements that will be effective for reporting periods beginning after December 15, 2010. Accordingly, we adopted this amendment on January 1, 2010, except for the additional Level 3 requirements which will be adopted in 2011.

In April 2010, the FASB issued an accounting standards update which provides guidance on the criteria to be followed in recognizing revenue under the milestone method. The milestone method of recognition allows a vendor who is involved with the provision of deliverables to recognize the full amount of a milestone payment upon achievement, if, at the inception of the revenue arrangement, the milestone is determined to be substantive as defined in the standard. The guidance is effective on a prospective basis for milestones achieved in fiscal years and interim periods within those fiscal years, beginning on or after June 15, 2010. We have not recognized any revenue since inception. Therefore, adoption of this guidance is not expected to have a material impact on our financial statements.

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BUSINESS

Overview

We are a specialty pharmaceutical company focused on the development and commercialization of innovative therapies for the treatment of acute and breakthrough pain. We were founded to solve the problems associated with post-operative intravenous patient-controlled analgesia, or IV PCA. Although widely used, IV PCA has been shown to cause harm to patients following surgery because of the side effects of morphine, the invasive IV route of delivery and the inherent potential for programming and delivery errors associated with the complexity of infusion pumps. We are preparing to initiate two Phase 3 clinical trials for our lead product candidate, the Sufentanil NanoTab PCA System, or ARX-01. The system is designed to address these problems by utilizing:

- sufentanil, a high therapeutic index opioid;
- NanoTabs, our proprietary, non-invasive sublingual dosage form; and
- our novel handheld PCA device that enables simple patient-controlled delivery of NanoTabs in the hospital setting and eliminates the risk of programming errors.

We have completed Phase 2 clinical development for two additional product candidates, the Sufentanil NanoTab BTP Management System, or ARX-02, for the treatment of cancer breakthrough pain, or BTP, and the Sufentanil/Triazolam NanoTab, or ARX-03, designed to provide mild sedation, anxiety reduction and pain relief for patients undergoing painful procedures in a physician s office.

The Market Opportunity for Our Product Candidates

ARX-01 Acute Post-Operative Pain

According to the 2010 Decision Resources Acute Pain report, the 2018 post-operative pain market is projected to be $6.5 billion for the United States, Europe and Japan. Opioids are the most efficacious analgesics available to control acute pain and are estimated to represent 74% of the overall post-operative pain market in the United States. Despite the broad array of pain products available, the need for adequate pain relief continues to be a significant issue. According to a report published in 2008 by Datamonitor, 75% of patients reported inadequate pain relief after surgery.

In the post-operative environment, the most common method for the treatment of acute pain is through IV PCA, in which patients self-dose by pushing a button to administer morphine via a programmable intravenous pump. Despite the common use of IV PCA, there are many deficiencies associated with this treatment that create a significant unmet medical need, including:

- *Drug-Related Side Effects*. Morphine, the most commonly used opioid for post-operative pain control, can produce many side effects, such as excessive somnolence, delirium, oxygen desaturation and respiratory depression. Morphine has active metabolites, the compounds that are produced when the body breaks down, or metabolizes, morphine, which amplify these side effects.
- *Complications Associated with IV Delivery*. IV PCA poses infection risk and creates opportunities for analgesic gaps due to dislodged catheters. Peripheral venous catheters have been associated with a 7% to 9% incidence of phlebitis and a 0.2% to 0.4% incidence of bacteremia. Catheter tubing tethering the patient to the PCA pump also hinders early post-operative mobility that can lead to increased post-operative complications.

Medication Delivery Errors. The complexity associated with ordering, dispensing, preparing, programming and administering the IV PCA pump results in many analgesia related errors. Human factors, such as programming the PCA pump, or administering the

wrong dose, are among the most common and serious type of errors. According to published literature, the estimated annual error rate is 407 errors per 10,000 people treated with IV PCA in the United States. Published analysis of a national medication error-reporting program, or Medmarx, from 2000 to 2005 reveals that IV PCA errors represent a four-fold higher relative risk of harm compared to all other medication errors. The most recent published analysis of the FDA Manufacturer and User Facility Device Experience, or MAUDE, database reports that 5% of IV PCA operator errors reported during a two-year index period, from 2002 to 2003, resulted in patient deaths. Recently, the risks associated with the use of infusion pumps, such as those used in IV PCA, have been the subject of scrutiny by the FDA, resulting in a new initiative to address the safety problems associated with infusion pumps and the underreporting of errors. Approximately 56,000 adverse events were reported to the FDA between 2005 and 2009, prompting 70 Class II infusion pump recalls of devices that could cause temporary or reversible adverse effects and 14 Class I infusion pump recalls of devices that could cause serious injury or death.

ARX-01 is designed to avoid many of the limitations of IV PCA by delivering sufentanil, a high therapeutic index opioid, using our proprietary NanoTab sublingual tablet via non-invasive, pre-programmed, handheld PCA device. We have completed three Phase 2 studies with ARX-01 and had an End of Phase 2 meeting with the FDA which defined the required scope and scale for Phase 3 studies, certain formulation requirements, non-clinical and regulatory requirements. We believe ARX-01 has the opportunity to become the new standard of care for post-operative patient-controlled analgesia.

ARX-02 Cancer Breakthrough Pain

Breakthrough pain is a common component of chronic pain and is characterized by its rapid onset, intensity and relatively short duration, which breaks through the analgesic effect of chronic pain medication. According to data published in 2006, more than 700,000 cancer patients in the United States experienced breakthrough pain. Fentanyl-based products are the only medications indicated to treat cancer breakthrough pain and account for less than 20,000 prescriptions per month. We believe this demonstrates a need for additional and improved cancer breakthrough pain medications. Data from the 2010 Decision Resources Acute Pain report indicates that the worldwide breakthrough pain market will grow to $2.9 billion by 2018.

Currently available fentanyl-based cancer breakthrough pain products have limited ability to provide effective and focused pain relief because their average half-lives extend to 6 to 14 hours, which is significantly longer than the average 15 to 60 minute duration of a cancer breakthrough pain episode. Oral transmucosal fentanyl, unlike sufentanil, is extensively absorbed through the gastrointestinal, or GI, tract in addition to the oral mucosal tissue, leading to erratic and delayed timing to peak plasma levels, ranging from 20 to 240 minutes. This can result in a dangerous phenomenon, known as dose-stacking, which occurs when a repeat dose is administered before the peak effect of the previous dose, and can lead to significant side effects, such as respiratory depression.

In addition to the medical limitations of currently approved opioids, the abuse of opioid pain medications is a significant medical and social problem. According to the 2010 National Survey on Drug Use and Health, during 2009 approximately 5.2 million people in the United States used prescription pain relievers for nonmedical purposes, an increase from the estimated 4.7 million in 2005. We believe none of the currently approved cancer breakthrough pain products have effective abuse-deterrent features to address these problems.

ARX-02 is designed to avoid many of the limitations of currently available cancer breakthrough pain medications by combining the rapid onset and appropriate offset of sufentanil with abuse-deterrent packaging. We have completed a Phase 2 study with ARX-02 and had an End of Phase 2 meeting with the FDA that defined the required criteria for Phase 3 studies.

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ARX-03 Mild Sedation and Pain Relief for Procedures in a Physician s Office

Each year in the United States, more than 100 million procedures take place in a physician s office. A substantial subset of these procedures are painful and anxiety inducing, including many interventional radiology procedures, diagnostic procedures such as breast and prostate biopsies, cosmetic procedures such as liposuction and dermal abrasions, and therapeutic procedures such as vasectomies. Ninety-six percent of men report moderate pain immediately after prostate biopsy, with only 4% of patients reporting no pain during the biopsy. In addition, women undergoing breast biopsies have pre-procedural scores averaging 60 to 70 out of 100 for visual analog scale measurements of nervousness, tension and fearfulness.

Intravenous sedation requires specialized monitoring, resuscitative equipment and appropriately trained staff for effective management of patients. As a result, many practitioners have stopped providing any sedation or analgesic medications to their patients prior to or during short duration procedures, and instead rely solely on local anesthetic injections, which are often insufficient in providing effective pain relief and anxiety reduction.

We are developing ARX-03 as a non-invasive method to produce sedation, anxiety reduction and pain relief in patients undergoing painful procedures in a physician s office. ARX-03 is designed to eliminate the need for specialized personnel and requires only minimal monitoring equipment. We have completed a Phase 2 study with ARX-03, and have preliminary guidance as to a clinical development path for this product as a result of completion of an End of Phase 2 meeting with the FDA.

Sufentanil NanoTabs

Sufentanil, a high therapeutic index opioid, which has no active metabolites, is 5 to 10 times more potent than fentanyl and is used intravenously as a primary anesthetic to produce balanced general anesthesia for surgery, and for epidural administration during labor and delivery. Sufentanil has many pharmacological advantages over other opioids. Published studies demonstrate that sufentanil produces significantly less respiratory depressive effects relative to its analgesic effects compared to other opioids, including morphine, alfentanil and fentanyl. These third party clinical results correlate well with preclinical studies demonstrating sufentanil s high therapeutic index, or the ratio of the toxic dose to the therapeutic dose of a drug, used as a measure of the relative safety of the drug for a particular treatment. Accordingly, we believe that despite its potency, sufentanil can be developed to provide an effective and relatively safe solution for the treatment of acute and breakthrough pain. The following table illustrates the difference between the therapeutic index of different opioids.

Opioid	Therapeutic Index
Meperidine	5
Methadone	12
Morphine	71
Hydromorphone	232
Fentanyl	277
Sufentanil	26,716

Although the analgesic efficacy of sufentanil has been well established, its use has been limited due to its short duration of action when delivered intravenously. The pharmaceutical attributes of sufentanil, including lipid solubility and ionization, result in rapid cell membrane penetration and onset of action, which we believe make sufentanil an optimal opioid for the treatment of both acute pain and breakthrough pain. In addition, its pharmacokinetic, or PK, profile when delivered sublingually avoids the high peak plasma levels and short duration of action of IV administration.

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Sublingual Delivery of Sufentanil: Summary of Phase 1 Clinical Studies Results

We have completed four Phase 1 PK studies with our proprietary sublingual sufentanil NanoTabs to support our three products under development. These studies demonstrated desirable and consistent PK parameters, including:

- relatively high bioavailability via the oral mucosa and very low GI bioavailability;
- prolonged plasma levels relative to IV delivery;
- PK parameters proportional to dose across a wide range of doses (2.5 mcg to 80 mcg);
- lower peak plasma concentration, or C_{max}, than IV delivery;
- time to maximum plasma concentrations, or T_{max}, range from 30 to 90 minutes;
- relatively low patient to patient variability in T_{max} and C_{max}; and
- repeat dosing PK that supports a 20 minute minimum re-dosing interval.

The chart below illustrates the PK profile of sublingual sufentanil NanoTab compared to IV delivery of sufentanil from one of our completed Phase 1 PK studies.

We have demonstrated that sublingual delivery of sufentanil avoids the high peak plasma levels and short duration of action of IV administration, enabling potential for broader use. Our proprietary NanoTab dosage form is a very small disc-shaped tablet with a bioadhesive excipient, or inactive ingredient, that enables the NanoTab to adhere to mucosal tissues. This allows sublingual delivery of sufentanil from the NanoTab by adherence to the sublingual mucosa, or tissues under the tongue. The NanoTab adheres within seconds after administration and full disintegration occurs within minutes. The small size of the NanoTab, pictured below, is designed to minimize the saliva response and amount of sufentanil swallowed, resulting in high oral transmucosal uptake, whereby a majority of the drug is absorbed via the oral tissues directly into the bloodstream, and consistent pharmacokinetics.

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Our portfolio of product candidates leverages the inherent advantages of sufentanil that are underutilized in medical practice. We believe our non-invasive, proprietary NanoTab sublingual dosage form overcomes the limitations of the current treatment options available for both acute and breakthrough pain.

None of our product candidates have been approved by the FDA. We have not generated any revenue from the sale of any of our product candidates.

Our Product Candidates

The following table summarizes key information about our existing product candidates for which we currently hold worldwide commercialization rights.

Product Candidate	Description	Target Indication	Development Status
ARX-01	Sufentanil NanoTab PCA System	Acute post-operative pain	Three Phase 2 clinical trials and End of Phase 2 meeting successfully completed
			Two efficacy trials and one open label safety trial planned in Phase 3; the first efficacy trial and the open label safety trial are anticipated to begin in the second half of 2011
ARX-02	Sufentanil NanoTab BTP Management System	Cancer breakthrough pain	Phase 2 clinical trial and End of Phase 2 meeting successfully completed
			One efficacy trial and two open label safety trials planned in Phase 3
ARX-03	Sufentanil/Triazolam NanoTab	Mild sedation for painful procedures in a physician s office	Phase 2 clinical trial and End of Phase 2 meeting successfully completed
			Two efficacy trials planned in Phase 3

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ARX-01 Sufentanil NanoTab PCA System

This product candidate has not been approved by the FDA. We have not generated any revenue from the sale of any of our product candidates.

The Market Opportunity for ARX-01

The post-operative pain market in the United States, Europe and Japan is growing steadily and is expected to reach $6.5 billion by 2018. Despite its size, this market remains underserved. Studies report that up to 75% of patients experience inadequate pain relief after surgery. Inadequate pain relief can lead to decreased mobility, which increases the risks of other medical complications, including deep vein thrombosis and partial lung collapse, and can result in extended hospital stays. The 2010 Decision Resources Acute Pain report projects that in 2013, 24.6 million in-patient procedures performed in the United States, Europe and Japan will require post operative treatment of pain, growing at a rate of approximately 1% per annum.

Market research among surgeons and anesthesiologists has identified a consistent positive response to the attributes of ARX-01 and indicates an interest in using ARX-01 in 85% of their eligible patients. Additionally, physicians expressed interest in using ARX-01 for patients who stay in the hospital for less than 24 hours and are not traditionally treated with IV PCA. Pharmacy and Therapeutics, or P&T, committees also indicate strong interest in ARX-01, with 91% of those interviewed indicating likely adoption to formulary.

How ARX-01 Addresses the Unmet Medical Need in Post-Operative Pain Management

There are many deficiencies associated with the current use of IV PCA, including:

- side effects associated with the most commonly used opioid, morphine, and its active metabolites;
- infection risk, analgesic gaps and decreased mobility associated with the invasive nature of IV delivery; and
- medication errors, which in some instances may be fatal, due to the complexity of IV PCA pumps, many of which arise from programming errors.

According to published literature, the estimated annual error rate is 407 errors per 10,000 people treated with IV PCA in the United States. Published analysis of Medmarx from 2000 to 2005 reveals that IV PCA errors represent a four-fold higher relative risk of harm compared to all other medication errors. The most recent published analysis of the FDA MAUDE database reports that 5% of IV PCA operator errors reported during a two-year index period, from 2002 to 2003, resulted in patient deaths. Approximately 56,000 adverse events were reported to the FDA between 2005 and 2009, prompting 70 Class II infusion pump recalls of devices that could cause temporary or reversible adverse effects and 14 Class I infusion pump recalls of devices that could cause serious injury or death. These issues with infusion pumps have resulted in the issuance of new draft guidance by the FDA, significantly increasing the data required to be submitted by manufacturers to address safety problems.

ARX-01 has the potential to address many of the key disadvantages of IV PCA, including:

- reducing the incidence of drug related side effects;

eliminating the risk of IV PCA related infections, reducing analgesic gaps and enhancing mobility; and

eliminating the risk of programming errors.

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We believe that ARX-01 will provide a favorable safety, efficacy and tolerability profile, enabling ARX-01 to become the new standard of care for patient-controlled analgesia. Further, we believe use of ARX-01 will result in increased patient satisfaction and reduced overall healthcare costs.

ARX-01 Description

ARX-01 allows patients to self-administer sublingual sufentanil NanoTabs as needed to manage their post-operative pain in the hospital setting, and provides the record-keeping attributes of a conventional IV PCA pump while avoiding some of the key issues, such as programming errors associated with conventional IV PCA use.

Our Sufentanil NanoTab PCA System, ARX-01, consists of three components:

- sufentanil, a high therapeutic index opioid;
- NanoTabs, our proprietary, non-invasive sublingual dosage form; and
- our novel handheld PCA device that enables simple patient-controlled delivery of NanoTabs in the hospital setting and eliminates the risk of programming errors.

ARX-01 utilizes sufentanil, which has one of the highest therapeutic index of all commercially available opioids, making it an attractive candidate for the management of post-operative pain. Formulated in our proprietary sublingual NanoTab dosage form, sufentanil provides for relatively high bioavailability, with lower peak drug levels and a longer duration of action compared to IV delivery.

Our handheld PCA device consists of a stack of 40 sufentanil 10 mcg or 15 mcg NanoTabs (approximately a two-day supply) in a disposable radio frequency identification and bar-coded cartridge (see Figure 1); a disposable dispenser tip (see Figure 2); and a reusable, rechargeable handheld controller (see Figure 3).

Figure 1, Cartridge with NanoTab Tablets *Figure 2, Dispenser Tip* *Figure 3, Controller*

This product candidate has not been approved by the FDA. We have not generated any revenue from the sale of any of our product candidates.

Our novel handheld PCA device has the following safety features:

- a wireless system access key for the healthcare professional;
- a wireless, electronic, adhesive thumb tag that acts as a single-patient identification key;
- pre-programmed 20-minute lock-out to avoid overdosing;

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a security tether that is designed to prevent theft and misuse; and

fully automated inventory record of NanoTabs usage.

To set up the handheld PCA device, the nurse or healthcare professional turns on the controller and follows simple step by step instructions described below.

Retrieve the NanoTab cartridge from secure drug storage;

lock the cartridge and dispenser into the controller; and

set up the secure patient access system, which is comprised of a security tether and a wireless, electronic, adhesive thumb tag that acts as a single-patient identification key.

To use ARX-01, the patient would:

confirm that the green indicator light is illuminated, meaning the device is available to dose;

place dispenser tip under tongue and push the large button on the controller, which dispenses a single NanoTab;

remove the device from mouth upon hearing a tone confirming delivery of the NanoTab; and

see the blue indicator light illuminate, indicating no new dose can be dispensed for the next 20 minutes.

During our Phase 2 clinical study, 100% of patients reported that they could handle the system easily and that user instructions were clear.

Sufentanil NanoTab PCA System ARX-01 Clinical Program

Summary

We have completed three successful Phase 2 clinical trials of sufentanil NanoTabs in the post-operative setting. These studies demonstrated analgesic efficacy, a low adverse event profile and excellent device functionality. We held an End of Phase 2 meeting with the FDA at the end of 2009. The FDA stated that the demonstration of efficacy versus placebo in two Phase 3 studies with a total safety database of at least 600 patients exposed to the active drug, should suffice to support an NDA. We are designing our Phase 3 trials based on the feedback from the FDA.

Planned Phase 3 Clinical Trials for ARX-01

We plan to conduct one Phase 3 trial to evaluate the efficacy of ARX-01. In addition, we plan to conduct one Phase 3 open-label active comparator study that will provide both incremental safety and marketing data. Manufacturing scale up activities and Phase 3 clinical trial planning are ongoing to enable initiation and patient enrollment in our first two Phase 3 trials in the second half of 2011. We expect to receive the top-line data from these trials in the first half of 2012. Contingent on our ability to secure additional funding, we plan to begin a second Phase 3 efficacy study in the second half of 2012 and submit an NDA in 2013 if the results from these studies are positive.

Our first Phase 3 clinical study on ARX-01 will be a placebo-controlled trial for a minimum of 48 hours and, as needed, up to 72 hours in adult patients undergoing open abdominal surgery. The objective is to compare the efficacy of ARX-01 to placebo for the management of acute post-operative pain. Approximately 220 patients will be randomly assigned to treatment with sufentanil or placebo. The primary endpoint will be

the summed pain intensity difference over the first 48 hours of the study period, or SPID-48. This value is obtained for each patient by subtracting all pain intensity scores after drug dosing from the patient s baseline score prior to dosing, and then adding these pain intensity differences together to obtain that patient s SPID score.

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Our second Phase 3 study will be an active comparator study of ARX-01 versus morphine IV PCA in patients undergoing orthopedic or abdominal surgery. Approximately 660 patients will be randomly assigned to treatment with Sufentanil NanoTab PCA System or morphine IV PCA. The primary endpoint will be the demonstration of statistical non- inferiority between the two groups for global patient satisfaction over the course of the study by patient reporting on a 4-point rating scale of poor, fair, good and excellent. Important secondary endpoints for comparison to IV PCA morphine will be drop-out due to inadequate analgesia, level of sedation, ease of care for patients and nurses, reporting of analgesic gaps and interdosing intervals.

Contingent on our ability to secure additional funding, our third Phase 3 clinical study will be a placebo-controlled trial in patients who are undergoing a total hip or knee replacement under general or spinal anesthesia. The objective is to compare the efficacy of the Sufentanil NanoTab PCA System to placebo for the management of acute post-operative pain. Approximately 330 patients will be randomly assigned to treatment with sufentanil or placebo. The primary endpoint also will be the SPID-48.

The ARX-01 Phase 3 device will be an upgraded version of the Phase 2 device, with enhanced features, including a color graphical user interface screen, security features to allow only the patient to use the device and prevent unauthorized access to the drug and improved industrial design for hospital use. The design of the Phase 3 device is at an advanced engineering prototype stage where several standalone prototypes have been built to conduct testing. Many of the subsystems within the device have not yet been integrated or tested to the specifications of the Phase 3 device design.

ARX-01: Sufentanil NanoTab PCA System Phase 2 Studies

We completed three Phase 2 studies in support of sufentanil NanoTabs. Across all studies, the average time interval between doses was approximately 80 minutes. This compares favorably to typical redosing intervals for IV PCA with average period between dosing of 20 to 40 minutes. No serious adverse events, or SAEs, were reported that were considered to be related to the study drug. Adverse events, or AEs, that were reported were similar to those reported for placebo-treated patients. These results demonstrate that sufentanil NanoTabs are effective and well tolerated by patients undergoing both major orthopedic and abdominal surgical procedures.

Phase 2 Clinical Results in Unilateral Knee Replacement (ARX-C-001)

In the first Phase 2 study, we conducted a randomized, double-blind, placebo-controlled, multicenter Phase 2 clinical study to evaluate the efficacy, safety and tolerability of sublingual sufentanil NanoTabs in patients undergoing elective unilateral knee replacement. The study enrolled 101 male and female patients 45 to 80 years of age who were undergoing elective knee replacement surgery. This procedure was chosen as it represents one of the most painful procedures patients undergo in the hospital setting. Patients were randomly assigned to treatment with sufentanil NanoTab 5 mcg, 10 mcg, 15 mcg, or placebo. Sufentanil NanoTabs were administered by study staff at the request of the patient with at least 20 minutes between doses. The primary endpoint was the sum of the pain intensity difference at each evaluation time point compared to baseline over the 12-hour study duration, or SPID-12.

The study results demonstrated that sufentanil NanoTab 15 mcg was effective, safe and well-tolerated for the treatment of acute post-operative pain in patients who had undergone unilateral knee replacement. The sufentanil NanoTab 15 mcg SPID-12 was higher than placebo (p=0.018) using the last observation carried forward, or LOCF, imputation method. A p value is a probability with a value ranging from 0 to 1, which indicates the likelihood that a clinical study is different between treatment and control groups. P-values below 0.05 are typically referred to as statistically significant. The sufentanil NanoTab 5 mcg or 10 mcg dosage strengths did not achieve a statistically significant separation from placebo overall. However, the 10 mcg dose was statistically significant as compared with

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placebo for women ($p<0.05$). Throughout the study there were statistically significant differences in SPID scores between the sufentanil NanoTab 15 mcg dose group and the placebo group, even at the earliest time point of 15 minutes ($p=0.038$). There were no clinically significant changes in laboratory variables, vital signs, or oxygen saturation during the study. The five SAEs reported were all considered unrelated to study drug and occurred after the end of study drug dosing.

The following figure shows the Summed Pain Intensity Difference over the 12-Hour Study Period for the placebo, 5 mcg, 10 mcg and 15 mcg groups.

* Intent-to-Treat Population: The intent-to-treat, or ITT, population includes all randomized patients regardless of whether they received or adhered to the allocated treatment group. ITT analysis provides unbiased comparisons among the treatment groups and is the primary statistical analysis used by the FDA.

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Phase 2 Clinical Results in Major Abdominal Surgery (ARX-C-005)

Our second Phase 2 study tested sufentanil NanoTabs 10 mcg, 15 mcg, or placebo in patients undergoing major abdominal surgery. In all other respects this study was similar in design to our first study. Both dosage strengths were significantly more effective than placebo for SPID-12 ($p<0.001$) as well as for all measures of pain intensity and pain relief. Significant differences between the sufentanil NanoTab treatment groups and the placebo group were observed within 2 hours after the first dose of study drug and continued until the end of the 12-hour treatment period. There were no clinically significant changes in laboratory variables, vital signs or oxygen saturation during the study. There were no SAEs reported during the study drug treatment period. The following figure shows the SPID-12 for the placebo, 10 mcg and 15 mcg groups.

Phase 2 Clinical Results for ARX-01 in Open-Label Device Functionality Study in Unilateral Knee Replacement (ARX-C-004)

We conducted an open-label functionality, safety and efficacy study of the ARX-01 NanoTab delivery system in patients undergoing elective unilateral knee replacement surgery. The study was a prospective, open-label, multicenter trial in 30 male and female patients 45 to 80 years of age with an average age of 66. All patients were treated with sufentanil NanoTab 15 mcg dosage strength. The primary endpoint was the percent of patients who completed the study without any Sufentanil NanoTab PCA System failures. The study also collected patient feedback on the design characteristics of the PCA System.

Patients self-administered sufentanil NanoTabs repeatedly over the 12-hour study using the ARX-01 Sufentanil NanoTab PCA System without any system failures or dosing errors for all 30 patients. Over 80% of the patients reported the two highest scores on the 5-point Likert scale of overall patient s satisfaction with the Sufentanil NanoTab PCA System 15 mcg. All 30 enrolled patients indicated that they could handle the Sufentanil NanoTab PCA System easily, that the user instructions were clear, that the dosing tone was loud enough, and that the time required for dosing was just right. Ninety percent of the patients indicated that the size and the shape of the dosing tip was also just right. The majority of patients indicated that the other system features (weight, size, shape, dose button function) were acceptable.

The mean pain intensity scores decreased from 5.5 at baseline to the lowest score of 3.0 at 2 hours. Dropout due to inadequate analgesia was 6.7%. There were no clinically significant changes in laboratory variables or vital signs and no SAEs reported during the study drug treatment period.

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Summary of Phase 2 Adverse Events

Overall the AE profile for the three Phase 2 studies suggests that ARX-01 is well-tolerated compared to typical AE rates seen with post-operative opioids. Published data indicates a much higher rate of somnolence (approximately 50%) and oxygen desaturation (approximately 10%) during standard IV PCA use compared to results obtained in our Phase 2 studies. The high therapeutic index of sufentanil (26,716) in animal studies suggests that opioid-induced sedation and oxygen desaturation does not occur with sufentanil until doses much higher than required for analgesia are administered. We believe our Phase 2 AE data confirm the high safety index of sufentanil. The table below summarizes the investigator s rating of probably or possibly related AEs based on sufentanil NanoTab dosage strength.

Adverse Events	Placebo N=54	Sufentanil NanoTab (5 mcg) N=24	Sufentanil NanoTab (10 mcg) N=55	Sufentanil NanoTab (15 mcg) N=79
Nausea	17(31%)	7(29%)	22(40%)	23(29%)
Vomiting	3(6%)	2(8%)	6(11%)	9(11%)
Itching	0(0%)	1(4%)	4(8%)	6(8%)
Somnolence	1(2%)	1(4%)	0(0%)	2(3%)
Oxygen desaturation	0(0%)	0(0%)	1(2%)	1(1%)
Respiratory depression	1(2%)	0(0%)	2(4%)	0(0%)

ARX-02 Sufentanil NanoTab BTP Management System

Market Opportunity for ARX-02

This product candidate has not been approved by the FDA. We have not generated any revenue from the sale of any of our product candidates.

According to published data, in 2006 more than 700,000 cancer patients in the United States experienced breakthrough pain. We estimate the prescription volume for oral transmucosal products for the management of cancer breakthrough pain to be 220,000 prescriptions per year. This suggests that less than 10% of cancer patients with cancer breakthrough pain are treated with approved transmucosal breakthrough pain medications. In addition, many physicians use immediate release oral opioids to treat cancer breakthrough pain. We believe that this market is significantly larger than the transmucosal product market.

Market research among physicians managing cancer patients indicates that ARX-02 could capture approximately a quarter of the cancer breakthrough pain prescriptions. In this research, ARX-02 was predicted to take share equally from both the immediate release oral products and the transmucosal products. Given the positive reaction to the product profile and the potential benefits of ARX-02 compared to currently available products, we believe that ARX-02 represents a significant commercial opportunity.

How ARX-02 Addresses the Unmet Medical Need in Cancer Breakthrough Pain

All products approved for the treatment of cancer breakthrough pain available today are fentanyl-based and have a number of limitations, including:

elimination half-lives of 6 to 14 hours to treat a cancer breakthrough pain event that typically lasts 15 to 60 minutes;

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- inconsistent T_{max} that ranges from 20 to 240 minutes, and can result in erratic onset of action and the potential for dose-stacking;
- local adverse events, such as dental caries and oral mucosal irritation; and
- drug packaging that lacks effective deterrence against abuse and misuse.

We designed ARX-02 to address these problems by:

- providing sufentanil, a shorter duration of action opioid with an elimination half-life ranging from 2 to 4 hours, which more closely matches the duration of a cancer breakthrough pain event;
- utilizing sufentanil, which provides for a consistent T_{max} with a narrow range of 30 to 90 minutes, thereby reducing the risk of dose-stacking;
- avoiding irritation of the oral mucosa, as demonstrated in our clinical studies; and
- packaging technology that enhances patient safety by reducing the possibility of misuse or abuse, while providing healthcare professionals with usage data.

In addition, continual use of any given opioid by a patient creates a risk of tolerance specific to that molecule, reducing the effectiveness of the drug. We believe the availability of ARX-02, as a non-fentanyl based product, will allow physicians to rotate opioids prescribed for cancer breakthrough pain, thereby maintaining the effectiveness of treatment.

ARX-02 Description

ARX-02 is a product candidate for the treatment of cancer patients who suffer from breakthrough pain. ARX-02 consists of a magazine containing 30 single dose applicators, or SDAs, loaded into a multiple SDA dispenser, or MSD. Each single dose applicator includes a sufentanil NanoTab that a patient can self-administer to their sublingual space for oral transmucosal absorption. The MSD:

- protects and dispenses SDAs, one at a time;
- displays a recent dose indicator that is designed to mitigate overdosing;
- has child resistant, elderly friendly features; and
- provides electronic date and time stamping of each SDA removal event.

The date and time event log is designed to be retrieved from the MSD by a healthcare professional during an office visit to assist the prescriber in understanding the usage profile of the medication, including diversion or abuse. Overall, our goal is to improve the treatment of cancer breakthrough pain while adding a substantially heightened level of detection and deterrence around prescription opioid use, misuse and abuse. While the initial dispenser for outpatient use is designed for dispensing sufentanil NanoTabs for cancer breakthrough pain events, we believe this concept could be adapted into developing dispensers for other scheduled drugs in the future.

Sufentanil NanoTab BTP Management System ARX-02 Clinical Program

Summary

We held an End of Phase 2 meeting with the FDA in July 2010. The FDA stated that the demonstration of efficacy versus placebo in a single Phase 3 study with a total safety database of 300 to 500 patients exposed to active drug, with at least 100 patients treated for a minimum of three months, may support an indication for the treatment of cancer breakthrough pain with underlying chronic pain.

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Planned Phase 3 Clinical Trials for ARX-02

We plan to conduct one Phase 3 efficacy study for ARX-02 for the management of cancer breakthrough pain in adult patients, who are already taking opioids for their underlying persistent cancer pain. In addition, we plan to conduct two open-label studies to demonstrate long term safety, which will include the use of the MSD.

The first planned Phase 3 clinical study for ARX-02 is a multi-center, randomized, double-blind, placebo-controlled crossover study for the evaluation of the safety and efficacy of the Sufentanil NanoTab BTP Management System in the treatment of cancer breakthrough pain. We plan to screen 170 patients in order to titrate approximately 140 patients, of which 110 patients will be randomized, such that at least 100 patients will generate primary efficacy data for analysis. The planned study consists of a screening visit, an open-label titration phase of up to three weeks to establish a dose of sufentanil (20, 30, 40, 60, 80 or 100 mcg) at home or in a hospice setting, that provides adequate relief of cancer breakthrough pain with tolerable side effects. This will be followed by a randomized, double-blind treatment phase of up to three weeks. Patients will be randomized to one of six sequences, each including nine doses of which six are active and three are placebo. Patients will use an electronic diary to record primary and secondary efficacy outcomes including pain intensity, pain relief, and global evaluation of treatment. The primary endpoint is the time-weighted summed pain intensity difference over 30 minutes, SPID-30, following treatment.

Patients who complete our Phase 3 efficacy trial will be allowed to participate in an open-label extension study to continue evaluating the safety of ARX-02 for up to one year. During each month while participating in the study, patients will present to the clinical site for visits to assess their medical status and proper use of study medication. The primary objective is to determine the long-term safety of sufentanil NanoTabs in patients with cancer breakthrough pain.

The dispensing device that was used in the Phase 2 study for ARX-02 was a simple, mechanical single dose applicator, or SDA, designed for a single use. The design for Phase 3 device contains both mechanical and electronic components and is intended to be a multiple use device with a magazine containing smaller SDAs than those used in Phase 2. The magazine is loaded into a multiple SDA dispenser, or MSD, which will include software to electronically track removal of each SDA from the MSD. Several industrial models have been developed that depict the size and form factor of the smaller SDA and the MSD.

We also plan to conduct an additional open-label study to ensure there is adequate data for analysis of drug safety and device functionality. We plan to screen approximately 470 patients in order to titrate approximately 370 patients, such that at least 300 patients will enroll in this study. Patients will use the MSD that will contain a magazine holding 30 SDAs. Each SDA will contain a single sufentanil NanoTab. The MSD will electronically track removal of each SDA from the MSD in order to record dosing history in the outpatient setting. This study will be up to three-months in duration and will utilize the same titration scheme as in the Phase 3 efficacy study. After patients achieve an efficacious and tolerable dose, they will use the MSDs to dispense the SDAs throughout the 3-month study.

Phase 2 Clinical Results for ARX-02

We have completed a Phase 2 study of the analgesic efficacy of the sufentanil NanoTab in adult cancer patients who are opioid tolerant and suffering from breakthrough pain events. This study was a prospective, multicenter, randomized, placebo-controlled multicenter, crossover study for the evaluation of the safety, efficacy and tolerability of the Sufentanil NanoTab BTP Management System in the treatment of cancer breakthrough pain.

Patients were screened and, if qualified for the study, would titrate to an effective dose of sufenanil that provided adequate relief of cancer breakthrough pain without producing intolerable side effects. Patients

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self-administered a single sufentanil NanoTab using a single-dose applicator, starting with a 20 mcg dose, followed by titration with 30, 40, 60 and 80 mcg sufentanil NanoTabs. The primary objective during the titration phase was to assess the safety and efficacy of ARX-02. The primary endpoint during the randomized, double-blind phase was to assess the efficacy of ARX-02 compared to placebo in the management of cancer breakthrough pain as determined by SPID-30.

Once a dosage strength that alleviated pain without producing intolerable side effects was identified, the patient was randomized to that dosage strength in the double-blind phase of the study. Patients were randomized to receive 10 doses, of which seven were active and three were placebo. Efficacy was assessed by patient data recorded and scored in an electronic diary, including pain intensity, pain relief, and global medication performance assessment just prior to and after taking each of the ten doses of study drug in the double-blind phase of the study. Forty-two patients were enrolled and received titration study medication. Eighty-four percent of patients with a mean age of 53.5 years (range 25 to 73 years) were randomized to the double-blind treatment period. Thirty-three patients completed the study.

The primary endpoint of time-weighted SPID-30 for sufentanil NanoTab-treated episodes was greater than placebo-treated episodes ($p<0.001$) as shown in the figure below.

* Modified Intent-to-Treat Population: The modified intent-to-treat population is a subset of the ITT population and included all randomized patients who took at least one active dose and one placebo dose, and had pre-treatment and at least one post-treatment pain intensity score for each of these episodes.

Pain intensity and pain relief were included as secondary endpoints. Lower scores for pain intensity were reported at each evaluation time point for sufentanil-treated episodes compared to placebo-treated episodes ($p=0.027$ at 15 minutes and $p<0.001$ at all other time points). Time reported time-weighted total pain relief, or TOTPAR, was greater at all time points for sufentanil-treated episodes compared to placebo-treated episodes ($p=0.049$ and $p=0.009$ for the 10 and 15 minute time points, respectively, and $p=<0.001$ for the remaining time points).

Patient Global Medication Performance Assessment, or GMPA, at 60 minutes after each dose of study medication showed 59 (27.4%) and 37 (17.2%) of the sufentanil-treated episodes were rated as very good or excellent on the GMPA, respectively, compared with seven (7.5%) and nine (9.7%) in the placebo-treated episodes. There was a statistically significant difference for GMPA measurements between the sufentanil-treated episodes and the placebo-treated episodes ($p<0.001$).

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Three patients reported an SAE; however, all SAEs were considered unrelated to study drug. The most common AEs were nervous system disorders, general disorders, and gastrointestinal disorders. The most common nervous system disorder was dysgeusia, or altered sense of taste (four patients, 9.5%). The most common gastrointestinal disorder was dry mouth (three patients, 7.1%). The most common AEs were nervous system disorders, general disorders, and gastrointestinal disorders. The most common nervous system disorder was headache (two patients, 5.9%). The most common gastrointestinal disorder was nausea (three patients, 8.8%). There was no statistical difference between sufentanil and placebo treatments for any AE.

There were a few statistically significant mean changes and no clinically significant changes from baseline in hematology and chemistry variables. During the safety monitoring period at the site, there were no statistically significant changes from baseline in heart rate or respiratory rate, and no clinically significant changes in oxygen saturation.

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ARX-03 Sufentanil/Triazolam NanoTabs

This product candidate has not been approved by the FDA. We have not generated any revenue from the sale of any of our product candidates.

The Market Opportunity for ARX-03

Each year in the United States, more than 100 million procedures take place in a physician s office that are known to be anxiety-inducing and painful. These procedures include diagnostic procedures such as breast and prostate biopsies, cosmetic procedures such as liposuction and dermal abrasions, interventional radiology procedures, and therapeutic procedures such as vasectomies and endometrial ablation procedures. IV sedative medications are typically not offered to these patients because of the high cost of the specialized personnel and monitoring equipment. Despite the high potential for pain and anxiety, most patients currently undergo these procedures with only a local anesthetic, causing unnecessary discomfort. We believe there is significant opportunity for a fast-acting, effective and safe product that can provide mild levels of sedation, anxiety reduction and analgesia for painful procedures conducted in a physician s office without the need for specialized personnel to monitor the patient.

How ARX-03 Addresses the Unmet Medical Need for Painful Procedures in a Physician s Office

The Joint Commission on the Accreditation of Healthcare Organizations, or JCAHO, mandates that IV sedation requires specialized monitoring, resuscitative equipment and appropriately trained staff. As a result, many practitioners do not provide any IV sedation to their patients prior to or during painful procedures that take place in a physician s office, and instead rely only on the analgesic benefit of local anesthetics.

The anxiety and pain that an individual experiences during painful procedures in a physician s office without sedation has been studied and reported in peer-reviewed journals. Ninety-six percent of men report moderate pain immediately after prostate biopsy, with only 4% of patients reporting no pain during the biopsy. Similarly, women undergoing breast biopsies have pre-procedural scores averaging 60 to 70 out of 100 for visual analog scale measurements of nervousness, tension and fearfulness. This data highlights the need for a mild sedative with analgesic and anxiety-reducing properties in addition to a local anesthetic for painful procedures in a physician s office.

We believe that ARX-03 can provide physicians with a non-invasive, rapid-acting product for mild sedation, anxiety reduction and pain relief during painful diagnostic and therapeutic procedures in a physician s office. We believe the availability of ARX-03 may increase the number of diagnostic and therapeutic procedures performed in a physician s office, resulting in cost savings because specialized personnel and equipment would not be necessary.

ARX-03 Description

ARX-03 Sufentanil/Triazolam NanoTab is a single, fixed-dose sublingual product candidate designed to be administered by a healthcare professional prior to a painful procedure in a physician s office. An important advantage of sufentanil and triazolam over other drugs in their classes is their rapid uptake from the sublingual mucosa. Our Phase 2 clinical data showed that administering ARX-03 via sublingual route prior to a procedure results in a rapid onset of mild sedation and reduction in anxiety in 15 to 30 minutes. Sufentanil and triazolam have short half-lives compared to many other agents in the same class of compounds, enabling patients treated with ARX-03 to be discharged immediately following

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completion of the procedure. The sublingual route of administration avoids the high plasma concentrations associated with IV delivery, thereby obviating the need for specialized personnel and extensive monitoring.

Sufentanil/Triazolam NanoTab ARX-03 Clinical Program

Summary

We have completed a successful Phase 2 clinical trial of ARX-03 demonstrating rapid onset of mild sedation and anxiety reduction, with a low adverse event profile during an abdominal liposuction procedure. We held End of Phase 2 meeting with the FDA in May 2010 to discuss the Phase 3 clinical program and requirements for NDA filing. Two four-arm factorial Phase 3 studies will be required with a minimum of 700 patients exposed to active drug.

Planned Phase 3 Clinical Trials for ARX-03

We plan to conduct two Phase 3 efficacy studies in a range of painful procedures, such as prostate biopsy, breast biopsy, vasectomy and low-volume abdominal liposuction. In each study, approximately 720 patients will be randomized to treatment with one of the following: sufentanil/triazolam 15 mcg/200 mcg NanoTab, sufentanil 15 mcg NanoTab, triazolam 200 mcg NanoTab, or placebo NanoTab. We intend to evaluate the time-weighted summed Richmond Agitation-Sedation Scale, or RASS, score over the 4-hour study period, or SRS-4, compared to placebo as the primary efficacy endpoint. RASS is a ten-point scale to evaluate agitated behavior where unarousable is graded as -5 and combative is graded as a +4 and a score of 0 is alert and calm. Secondary endpoints are intended to include comparisons of SRS-4 among active comparator arms, patient report of procedural anxiety and pain intensity using an 11-point Numerical Rating Scale, or NRS, patient and physician global assessments of satisfaction with study drug, and time to a modified Aldrete score of 8 (readiness for discharge measurement).

There was no dispensing device used in the ARX-03 Phase 2 studies. Tablets were placed in the patients sublingual space through the use of forceps. The design for Phase 3 device for ARX-03 consists of a simple mechanical dispenser or SDA. We have produced several working prototypes.

Phase 1 and Phase 2 Clinical Results for ARX-03

We completed an initial dose finding study for three different strengths of sublingual Sufentanil/Triazolam NanoTabs (10 mcg/100 mcg, 10 mcg/200 mcg and 15 mcg/200 mcg) in 24 subjects. The onset of sedation was approximately 40% faster with the sufentanil 15 mcg/triazolam 200 mcg NanoTab treatment compared to the sufentanil 10 mcg/triazolam 200 mcg NanoTab treatment in younger subjects. There were minimal differences between treatments for time to maximum sedation and for total duration of sedation, leading us to select the sufentanil 15 mcg/triazolam 200 mcg NanoTab dosage strength to study further in a Phase 2 trial.

We completed a Phase 2 study of analgesic and anxiety reducing efficacy of the sufentanil/triazolam NanoTab in patients undergoing an elective abdominal liposuction procedure. The study was a prospective, randomized, double-blind, placebo-controlled single center study in adult patients. Patients were randomly assigned to treatment with the sufentanil 15 mcg/triazolam 200 mcg NanoTab or placebo. Forty-one patients were randomized and 40 patients received study drug and underwent the procedure and completed the 4-hour study period. The mean age for all randomized patients was 36.7 years (range 19 to 55 years). The primary endpoint was the SRS-4 and the sufentanil/triazolam NanoTab demonstrated superiority over placebo ($p<0.001$). The sufentanil/triazolam NanoTab was more effective than placebo in reducing anxiety as measured by the secondary endpoint, the NRS anxiety scale. A significant difference ($p<0.05$) in anxiety score between the sufentanil/triazolam NanoTab and placebo was seen at 15 minutes, the first time point measured after study drug dosing.

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The sufentanil/triazolam NanoTab did not show a statistical difference from placebo in providing analgesia as measured by the NRS pain intensity scale (p=0.311). The summed pain intensity score was lower for the sufentanil/triazolam NanoTab compared to placebo for all time points; however, the difference was not significant with the small number of patients.

There was a statistically significant difference between the sufentanil/triazolam NanoTab treatment group and placebo (p<0.001) in the proportion of patients for which the physician rated the treatment very good or excellent on the global assessment of effectiveness and tolerability. There was also a statistically significant difference between the sufentanil/triazolam NanoTab treatment group and placebo (p=0.028) for the proportion of patients who rated the treatment very good or excellent on the global assessment of effectiveness and tolerability. All patients in both the sufentanil/triazolam NanoTab treatment group and the placebo group were ready for discharge immediately following the procedure.

There were no SAEs reported during treatment or 12 hours after dosing. The most frequent AE was nervous system disorders, which were observed in two patients (9.5%) in the sufentanil/triazolam NanoTab treatment group and in two patients (10.5%) in the placebo group. Dizziness was also reported by two patients (9.5%) in the sufentanil/triazolam NanoTab treatment group and one patient (5.3%) in the placebo group. There were no significant differences between the treatment groups for any AEs. All events were mild or moderate in severity. There were no clinically significant changes in vital signs or oxygen saturation during the study.

Other potential applications for our NanoTab technology

We believe that as a platform technology, the NanoTab, either as a stand alone dosage form or in conjunction with various forms of dispensing mechanisms, has the potential to enable other product candidates utilizing sufentanil or a number of additional compounds to be delivered sublingually to the oral mucosa. There are numerous compounds used for the treatment of pain as well as other therapeutic indications which are dosed in microgram quantities and possess characteristics that we believe make them potential candidates for sublingual delivery via the NanoTab. We believe our pending patent filings and issued European patent will broadly protect NanoTab compositions and their use in oral transmucosal delivery of compounds other than sufentanil.

One such opportunity is in the treatment of acute pain in medically supervised settings. According to the American Hospital Association, there were 127 million emergency room, or ER, visits and 17 million hospital-based outpatient surgeries in the United States in 2009. In addition, according to the Ambulatory Surgery Center Association, over 22 million procedures were conducted in ambulatory surgery centers in the United States in 2008. Typically, patients requiring pain relief in these settings have most commonly been treated with either opioids or anti-inflammatory agents in either injectable or oral form. Injectable medications require invasive IV or intramuscular, or IM, administration. In many cases, patients do not have readily available IV access, such as upon admission to the ER, ambulatory care environments or in the field during civilian and military patient transport. IM injections are painful and present an increased risk of infection. The oral route does not offer a rapid or consistent onset of action, which limits the ability to provide effective pain relief.

We believe there is significant opportunity for a single-dose, rapid-acting, non-invasive analgesic to treat acute pain in these medically supervised settings. We believe that providing non-invasive, sublingual delivery of higher doses (20-30 mcg) of the high therapeutic index opioid sufentanil, utilizing our proprietary NanoTab technology, delivered with a SDA by a health care professional could address this need. If we are able to secure additional financial resources beyond this offering, we plan to commence clinical development of this product concept for the treatment of moderate-to-severe acute pain in a medically supervised setting.

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Our Strategy

Our strategy is to develop and commercialize a portfolio of sufentanil NanoTab-based products in specialty markets. We have designed and are developing product candidates which have clearly defined clinical development programs, target large commercial market opportunities and require modest commercial organizations in the United States. We selectively utilize third party contractors in order to maximize the capital efficiency of our development and commercialization efforts. We plan to enter into partnerships to market our product candidates outside the United States.

Our lead program, ARX-01, is focused on the management of post-operative pain in the hospital setting. Our second program, ARX-02, is focused on the management of cancer breakthrough pain. Both of these product candidates have completed Phase 2 development. We intend to advance ARX-01 into two Phase 3 trials, and contingent on our ability to secure additional funding, we plan to complete the third ARX-01 Phase 3 clinical trial, submit an NDA and, if approved, to commercialize ARX-01 ourselves in the United States. Based on the availability of financial resources, we plan to advance ARX-02 into Phase 3 trials, submit an NDA and, if approved, commercialize ARX-02 ourselves or with a partner in the United States. Further development of ARX-03 will depend on the identification of a partner to support this effort.

Our specific strategy with respect to ARX-01 is to:

- complete one Phase 3 efficacy study and one Phase 3 active comparator study following this offering, and contingent on the availability of additional funding, complete the third Phase 3 study and seek regulatory approval in the United States and other countries;
- establish at least one commercial relationship in North America for the manufacturing of the components of the Sufentanil NanoTab PCA system;
- build a targeted hospital-directed sales force in the United States; and
- partner with third parties for commercialization outside of the United States.

Sales and Marketing

We anticipate developing a distribution capability and commercial organization in the United States to market and sell our product candidates alone or with partners, while out-licensing commercialization rights outside of the United States. In executing our strategy, our goal is to have significant control over the development process and commercial execution for our product candidates, while retaining meaningful economics.

We plan to progressively build commercial capability to support introduction of ARX-01 to the United States market as we move towards NDA submission and approval. We foresee two stages of commercial execution to support successful introduction of ARX-01 in the United States:

In parallel with our Phase 3 clinical studies, we plan to:

- highlight the clinical and health economic data identifying the limitations of IV PCA in use today;
- increase awareness of the development of ARX-01 through publication of our clinical data;
- create and deploy a focused scientific support team to gather a detailed understanding of individual hospital needs in order to be prepared to present ARX-01 effectively at the time of commercial launch;

establish advisory boards with anesthesiologists, surgeons and nurses to provide us with input on appropriate commercial positioning for ARX-01 for each of these key audiences; and

design a post-approval clinical development program, including potential head-to-head superiority studies with IV PCA.

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Following FDA approval, we plan to:

- create and deploy a high-quality, customer focused and experienced commercial organization dedicated to bringing innovative, highly-valued healthcare solutions to patients, payors, and healthcare providers, including building a targeted hospital-directed sales force in the United States;
- establish ARX-01 on hospital formularies through deployment of an experienced team to describe the clinical and pharmacoeconomic benefits of ARX-01 in comparison to IV PCA;
- conduct post-approval clinical program for ARX-01;
- establish ARX-01 as the product of choice for traditional post-operative PCA; and
- expand the market through deployment of ARX-01 for 24 hour stay patients, where IV PCA is not used today.

Intellectual Property

We seek patent protection in the United States and internationally for our product candidates. Our policy is to pursue, maintain and defend patent rights developed internally and to protect the technology, inventions and improvements that are commercially important to the development of our business. We cannot be sure that patents will be granted with respect to any of our pending patent applications or with respect to any patent applications filed by us in the future, nor can we be sure that any of our existing patents or any patents granted to us in the future will be commercially useful in protecting our technology. We also rely on trade secrets to protect our product candidates. Our commercial success also depends in part on our non-infringement of the patents or proprietary rights of third parties. For a more comprehensive discussion of the risks related to our intellectual property, please see Risk Factors Risks Related to Our Intellectual Property.

Our success will depend significantly on our ability to:

- obtain and maintain patent and other proprietary protection for our product candidates;
- defend our patents;
- preserve the confidentiality of our trade secrets; and
- operate our business without infringing the patents and proprietary rights of third parties.

We have established and continue to build proprietary positions for our product candidates and related technology in the United States and abroad. As of December 31, 2010, we held 15 pending United States utility patent applications, and 39 foreign national patent applications covering various aspects of our product candidates. We also hold a European Patent, EP2114383, granted on July 21, 2010, validated and translated in Switzerland, Germany, Denmark, Spain, France, the United Kingdom, Italy, the Netherlands, Portugal and Sweden, with an expiration date of December 28, 2027, excluding any additional term for patent term adjustments. We also hold three pending Patent Cooperation Treaty applications that have not yet been nationally filed.

We seek patent protection for both compositions of matter, as well as methods of treatment related to our ARX-01, ARX-02 and ARX-03 product candidates. We are pursuing composition of matter claims for our ARX-01, ARX-02 and ARX-03 NanoTabs and formulations, our

ARX-01 PCA devices, the combination of drugs and our ARX-01 PCA devices, our ARX-02 and ARX-03 SDAs, as well as to methods of treatment using such drug and device compositions.

Issued European Patent No. EP2114383 includes composition of matter claims directed to ARX-01, ARX-02 and ARX-03 NanoTabs for oral transmucosal delivery of sufentanil, alone and in combination with key features of the ARX-01 PCA device, the ARX-02 and ARX-03 SDAs, and use of the claimed compositions in the treatment of pain.

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We have filed for patent coverage in the United States, Europe, Japan, China, India, Canada and Korea. If issued, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, we expect that these patents will expire between 2027 and 2030, excluding any additional term for patent term adjustments or patent term extensions in the United States. We note that the patent laws of foreign countries differ from those in United States, and the degree of protection afforded by foreign patents may be different from the protection offered by U.S. patents.

Further, we seek trademark protection in the United States and internationally where available and when appropriate. We have registered our ACELRX mark in Class 5, Pharmaceutical preparations for treating pain; pharmaceutical preparations for treating anxiety, and Class 10, Drug delivery systems; medical device, namely, a mechanical and electronic device used to administer medications, perform timed medication delivery, and to provide secure access to and delivery of medications. Our ACELRX mark has also been registered in the European Community and Canada, and is pending in India. We have filed for trademark protection in the United States for the NanoTab mark, which we use in connection with our pharmaceutical product candidates, and the ACCELERATE, INNOVATE, ALLEVIATE tagline.

Competition

Our industry is highly competitive and subject to rapid and significant technological change. Our potential competitors include large pharmaceutical and biotechnology companies, specialty pharmaceutical and generic drug companies, and medical technology companies. We believe the key competitive factors that will affect the development and commercial success of our product candidates are the safety, efficacy and tolerability profile, reliability, convenience of dosing, price and reimbursement.

Many of our potential competitors, including many of the organizations named below, have substantially greater financial, technical and human resources than we do and significantly greater experience in the development of product candidates, obtaining FDA and other regulatory approvals of products and the commercialization of those products. Accordingly, our competitors may be more successful than we may be in obtaining FDA approval for drugs and achieving widespread market acceptance. Our competitors drugs may be more effective, or may be more effectively marketed and sold, than any drug we may commercialize, which may render our product candidates obsolete or non-competitive before we can recover our losses. We anticipate that we will face intense and increasing competition as new drugs enter the market and advanced technologies become available.

Potential Competition for ARX-01

We are developing ARX-01, the Sufentanil NanoTab PCA System, for the management of acute post-operative pain in adult patients during hospitalization. We believe that ARX-01 would compete with a number of opioid-based treatment options that are currently available. The market for opioids for post- operative pain is large and competitive. The primary competition is the IV PCA pump, which is widely used in the post-operative setting. Leading manufacturers of IV PCA pumps include Hospira Inc., CareFusion Corporation, Baxter International Inc., Curlin Medical, Inc. and Smiths Medical. The most common opioids used to treat post-operative pain are morphine, hydromorphone and fentanyl, all of which are available as generics.

Also available on the market is the Avancen Medication on Demand, or MOD, Oral PCA Device developed by Avancen MOD Corporation. MOD is a unit that is locked onto an IV pole within the patient s reach and allows patients to access their oral pain medication. Other products under development for the treatment of post-operative pain that we are aware of include:

Fentanyl iontophoretic transdermal system, IONSYS, originally developed by ALZA Corporation and Ortho-McNeil Pharmaceutical, Inc., both Johnson & Johnson subsidiaries.

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IONSYS received NDA approval in May 2006 in the United States; however, the product was never launched. IONSYS was approved in Europe but the Marketing Authorization was suspended by the EMA in November 2008. IONSYS is currently under development by Incline Therapeutics, Inc.

Rylomine, an intranasal morphine product developed by Javelin Pharmaceuticals, Inc., and currently in Phase 3 trials in the United States and in Phase 2 in Europe.

There are a number of non-opioid drugs in development that are delivered either systemically or locally for the treatment of acute post-operative pain. These drugs are usually evaluated for their ability to treat milder types of pain (for example, the day following laparoscopic surgery) or to decrease, but not replace, the need for post-operative opioids. Therefore, we do not believe that these product candidates will compete with ARX-01 because they will not be utilized commercially as the sole method of treating acute post-operative pain immediately following surgery, which is the role of ARX-01.

Potential Competition for ARX-02

We are developing ARX-02, the Sufentanil NanoTab BTP Management System, for the treatment of breakthrough pain in opioid tolerant patients, with an initial indication in cancer patients. The market for opioids for treatment of cancer breakthrough pain is large and competitive; however, currently there are no sufentanil products approved by the FDA for this indication. We expect that ARX-02, if approved, may compete with these commercial products listed in the table below.

Product Name	Company	Formulation	Commercial Market
ACTIQ	Cephalon, Inc.	Oral fentanyl transmucosal lozenge	United States
FENTORA/ EFFENTORA	Cephalon, Inc.	Fentanyl buccal tablet	United States and European Union
Onsolis	Meda Pharmaceuticals Inc. / BioDelivery Sciences International, Inc.	Fentanyl buccal soluble film	United States
Abstral	ProStrakan Group plc	Sublingual fentanyl tablet	United States and European Union
Instanyl	Nycomed International Management GmbH	Fentanyl nasal spray	European Union
PecFent	Archimedes Pharma Limited	Fentanyl nasal spray	European Union
Fentanyl Citrate (Oral Transmucosal)	Teva Pharmaceuticals USA	Oral fentanyl transmucosal lozenge	United States

Additionally, we are aware of the following products in late stage development for cancer breakthrough pain:

Fentanyl TAIFUN, an inhaled fentanyl product developed by Akela Pharma, Inc., and currently in Phase 3 clinical trials.

Fentanyl SL Spray, a fentanyl sublingual spray developed by Insys Therapeutics, Inc., and currently in Phase 3 clinical trials.

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If approved, these product candidates could compete directly with ARX-02.

Potential Competition for ARX-03

We are developing ARX-03, the Sufentanil/Triazolam NanoTab, for use in diagnostic or therapeutic painful procedures of short duration in a physician s office. For these procedures, many practitioners rely primarily on local anesthetics injected to the procedural area to reduce the pain of the procedure, and do not use IV sedatives to manage the anxiety of patients because of the cost of having additional trained staff to monitor the patients. Currently, we are not aware of any products on the market which combine an opioid with a benzodiazepine in a single dosage form to manage the anxiety and pain of procedures in a physician s office.

Pharmaceutical Manufacturing and Supply

We currently rely on contract manufacturers to produce sufentanil and sufentanil/triazolam NanoTabs for our clinical studies under cGMP with oversight by our internal managers. Equipment specific to the pharmaceutical manufacturing process was purchased and customized by us and is currently owned by us. We plan to continue to rely on contract manufacturers and, potentially, collaboration partners to manufacture commercial quantities of our product candidates if and when approved for marketing by the FDA. We currently rely on a single manufacturer for the preclinical and clinical supplies of our drug product for each of our product candidates and do not currently have agreements in place for redundant supply or a second source for any of our product candidates. We have identified other drug product manufacturers that could satisfy our clinical study requirements but this would require a significant delay in setting up the facility and moving equipment. Additionally, should a supplier or a manufacturer on whom we rely to produce a product candidate provide us with a faulty product or such product is later recalled, we would likely experience significant delays and material additional costs.

Device Manufacturing and Supply

The ARX-01 handheld PCA device is manufactured by contract manufacturers, component fabricators and secondary service providers. Suppliers of components, subassemblies and other materials are located in Korea, Japan, Germany, China, Taiwan, Canada and the United States. All contract manufacturers and component suppliers have been selected for their specific competencies in the manufacturing processes and materials that make up the ARX-01 system. FDA regulations require that materials be produced under cGMPs or QSR. We outsource injection molding of all the plastic parts for the cartridge and device and product sub-assemblies; NanoTab cartridge filling and packaging; assembly, packaging and labeling of the dispenser and controller.

ARX-02 is manufactured by contract manufacturers, component fabricators and secondary service providers. Suppliers of components, subassemblies and other materials are located in Korea, Japan, China, Taiwan, Canada and the United States. All contract manufacturers and component suppliers have been selected for their specific competencies in the manufacturing processes and materials that make up the ARX-02 system. FDA regulations require that materials be produced under cGMPs or QSR, as required for the respective unit operation within the manufacturing process. We outsource injection molding of all the plastic parts for the SDA and MSD and product sub-assemblies; filling, packaging and labeling of SDAs.

Government Regulation And Product Approval

Government authorities in the United States at the federal, state and local level, and other countries, extensively regulate, among other things, the research, development, testing, manufacture, quality control, approval, labeling, packaging, storage, record-keeping, promotion, advertising, distribution, marketing, export and import of products such as those we are developing. Our product candidates must be approved by the FDA through the new drug application, or NDA, process before they may legally be marketed in the United States.

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United States Drug Development Process

In the United States, the FDA regulates drugs under the Federal Food, Drug, and Cosmetic Act, or FDCA, and regulations. The process of obtaining regulatory approvals and compliance with appropriate federal, state, local and foreign statutes and regulations require the expenditure of substantial time and financial resources. Failure to comply with the applicable U.S. requirements at any time during the product development process, approval process, or after approval, may subject an applicant to administrative or judicial sanctions. These sanctions could include the FDA s refusal to approve pending applications, withdrawal of an approval, a clinical hold, warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement or civil or criminal penalties. The process required by the FDA before a drug product may be marketed in the United States generally involves the following:

- completion of non-clinical laboratory tests, animal studies and formulation studies according to Good Laboratory Practices regulations;
- submission to the FDA of an IND which must become effective before human clinical studies may begin;
- performance of adequate and well-controlled human clinical studies according to Good Clinical Practices, or GCP, to establish the clinical safety and efficacy of the proposed drug product for its intended use;
- submission to the FDA of an NDA for a new drug product;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the drug product and the drug substance(s) are produced to assess compliance with cGMP; and
- FDA review and approval of the NDA; and
- payment of user and facility fees.

The testing and approval process requires substantial time, effort and financial resources and we cannot be certain that any approvals for our product candidates will be granted on a timely basis, if at all.

Once a pharmaceutical product candidate is identified for development, it enters the preclinical testing stage. Preclinical tests include laboratory evaluations of product chemistry, toxicity, formulation and stability, as well as animal studies to assess its potential safety and efficacy. An IND sponsor must submit the results of the preclinical tests, together with manufacturing information, analytical data and any available clinical data or literature, to the FDA as part of the IND. The sponsor will also include a protocol detailing, among other things, the objectives of the initial clinical study, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated if the initial clinical study lends itself to an efficacy evaluation. Some preclinical testing may continue even after the IND is submitted. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA places the clinical study on a clinical hold within that 30-day time period. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical study can begin. Clinical holds also may be imposed by the FDA at any time before or during studies due to safety concerns or non-compliance.

All clinical studies must be conducted under the supervision of one or more qualified investigators in accordance with protection of human subjects at 21 CFR Part 50 and GCP guidances. These regulations include the requirement that all research subjects provide informed consent. Further, an institutional review board, or IRB, must review and approve the plan for any clinical study before it commences at an institution. An IRB considers, among other things, whether the risks to individuals participating in the studies are minimized and are reasonable in relation to anticipated benefits. The IRB also approves the information regarding the clinical study and the consent form that must be provided to each clinical study subject or his or her legal representative and must monitor the clinical study until completed.

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Each new clinical protocol and any amendments to the protocol must be submitted to the IND for FDA review, and to the IRBs for approval. Protocols detail, among other things, the objectives of the clinical study, dosing procedures, subject selection and exclusion criteria, and the parameters to be used to monitor subject safety.

Human clinical studies are typically conducted in three sequential phases that may overlap or be combined:

Phase 1. The product is initially introduced into healthy human subjects and tested for safety, dosage tolerance, absorption, metabolism, distribution and excretion. In the case of some products for severe or life-threatening diseases, especially when the product may be too inherently toxic to ethically administer to healthy volunteers, the initial human testing is often conducted in patients.

Phase 2. Involves studies in a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted conditions and to determine dosage tolerance and optimal dosage and schedule.

Phase 3. Clinical studies are undertaken to further evaluate dosage, clinical safety and efficacy in an expanded patient population at geographically dispersed clinical study sites. These studies are intended to establish the overall risk/benefit ratio of the product and provide an adequate basis for product labeling.

Progress reports detailing the results of the clinical studies must be submitted at least annually to the FDA and safety reports must be submitted to the FDA and the investigators for serious and unexpected adverse events. Phase 1, Phase 2 and Phase 3 testing of our product candidates may not be completed successfully within any specified period, if at all. The FDA or the sponsor may suspend or terminate a clinical study at any time on various grounds, including a finding that the research subjects or patients are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical study at its institution if the clinical study is not being conducted in accordance with the IRB s requirements or if the drug or biological product has been associated with unexpected serious harm to patients.

Concurrent with clinical studies, companies usually complete additional animal studies and must also develop additional information about the chemistry and physical characteristics of the product and finalize a process for manufacturing the product in commercial quantities in accordance with cGMP and QSR for medical devices requirements. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other things, the manufacturer must develop methods for testing the identity, strength, quality and purity of the final product. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the product candidate does not undergo unacceptable deterioration over its shelf life.

Our product candidates ARX-01, ARX-02 and ARX-03 are regulated under IND s and in the case of ARX-01, all device related information is filed under the Chemistry, Manufacturing and Controls Section, or CMC, of an IND.

United States Review and Approval Processes

The results of product development, preclinical studies and clinical studies, along with descriptions of the manufacturing process, analytical tests conducted on our drug products, proposed labeling and other relevant information, will be submitted to the FDA as part of an NDA for a new drug product, requesting approval to market the product in the United States. The submission of an NDA is subject to the payment of a substantial user fee; a waiver of such fee may be obtained under certain limited circumstances.

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In addition, under the Pediatric Research Equity Act of 2003, or PREA, which was reauthorized under the Food and Drug Administration Amendments Act of 2007, an NDA or supplement to an NDA must contain data to assess the safety and effectiveness of the drug product for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA may grant deferrals for submission of data or full or partial waivers.

The FDA reviews all NDAs submitted to ensure that they are sufficiently complete for substantive review before it accepts them for filing. The FDA may request additional information rather than accept an NDA for filing. In this event, an NDA must be re-submitted with the additional information. The re-submitted application also is subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth substantive review. The FDA reviews an NDA to determine, among other things, whether a product is safe and effective for its intended use and whether its manufacturing is cGMP-compliant to assure and preserve the product s identity, strength, quality and purity. Before approving an NDA the FDA will inspect the facility or facilities where the product is manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. The FDA may refer the NDA to an advisory committee for review, evaluation and recommendation as to whether the application should be approved and under what conditions.

The approval process is lengthy and difficult and the FDA may refuse to approve an NDA if the applicable regulatory criteria are not satisfied or may require additional clinical data or other data and information. Even if such data and information is submitted, the FDA may ultimately decide that the NDA does not satisfy the criteria for approval. Data obtained from clinical studies are not always conclusive and the FDA may interpret data differently than we interpret the same data. The FDA will issue a complete response letter if the agency decides not to approve the NDA in its present form. The complete response letter usually describes all of the specific deficiencies in the NDA identified by the FDA. The deficiencies identified may be minor, for example, requiring labeling changes, or major, for example, requiring additional preclinical or clinical studies. Additionally, the complete response letter may include recommended actions that the applicant might take to place the application in a condition for approval. If a complete response letter is issued, we may either resubmit the NDA addressing all of the deficiencies identified in the letter, or withdraw the application.

If one or more of our product candidates receive regulatory approval, the approval may be limited to specific conditions and dosages or the indications for use may otherwise be limited, which could restrict the commercial value of the product. Our product candidates, if approved, will also require Risk Evaluations and Mitigation Strategies, or REMS, that can include a medication guide, patient package insert, a communication plan, elements to assure safe use and implementation system, and must include a timetable for assessment of the REMS. Further, the FDA may require that certain contraindications, warnings or precautions be included in the product labeling and may require testing and surveillance programs to monitor the safety of approved products that have been commercialized. In addition, the FDA may require post-approval testing which involves clinical studies designed to further assess a drug product s safety and effectiveness after the NDA.

Marketing Exclusivity

Market exclusivity provisions under the FDCA can delay the submission or the approval of certain competing applications containing the same active ingredient as our products, if approved. The FDCA provides three years of marketing exclusivity for an NDA, 505(b)(2) NDA or supplement to an existing NDA if new clinical investigations, other than bioavailability studies were conducted or sponsored by the applicant are deemed by the FDA to be essential to the approval of the application, for example new

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indications, dosages or strengths of an existing drug such as for our product candidates. This three-year exclusivity covers only the conditions associated with the new clinical investigations and does not prohibit the FDA from approving ANDAs for drugs containing the original active agent. Three-year exclusivity will not delay the submission or approval of a full NDA.

Pediatric exclusivity is another type of exclusivity in the United States. Pediatric exclusivity, under the Best Pharmaceutical for Children Act, if applied for and granted, provides an additional six months to an existing exclusivity or statutory delay in approval resulting from a patent certification. This six-month exclusivity, which runs from the end of other exclusivity protection or patent delay, may be granted based on the voluntary completion of a pediatric study in accordance with an FDA-issued Written Request. The current pediatric exclusivity provision was reauthorized in September 2007. At present, we do not plan to apply for pediatric exclusivity.

We intend to submit 505(b)(2) NDA applications for each of our product candidates and if approved, we would be granted three years of marketing exclusivity. We expect that our patents, if issued and not successfully challenged, will expire between 2027 and 2030.

Post-Approval Requirements

Any drug products for which we receive FDA approvals are subject to continuing regulation by the FDA, including, among other things, record-keeping requirements, reporting of adverse experiences with the product, providing the FDA with updated clinical safety and efficacy information, product sampling and distribution requirements, complying with certain electronic records and signature requirements and complying with FDA promotion and advertising requirements. The FDA strictly regulates labeling, advertising, promotion and other types of information on products that are placed on the market. Drug products may be promoted only for the approved indications and in accordance with the provisions of the approved label. Further, manufacturers of drug products must continue to comply with cGMP requirements, which are extensive and require considerable time, resources and ongoing investment to ensure compliance. In addition, changes to the manufacturing process generally require prior FDA approval before being implemented and other types of changes to the approved product, such as adding new indications and additional labeling claims, are also subject to further FDA review and approval.

Drug product manufacturers and other entities involved in the manufacturing and distribution of approved drug products are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with cGMP and other laws. The cGMP requirements apply to all stages of the manufacturing process, including the production, processing, packaging, labeling, storage and shipment of the drug product. Manufacturers must establish validated systems to ensure that products meet specifications and regulatory standards, and test each product batch or lot prior to its release. In the case of ARX-01 the device component must comply with 21 CFR 820.

We rely, and expect to continue to rely, on third parties for the production of clinical and commercial quantities of our products. Future FDA and state inspections may identify compliance issues at the facilities of our contract manufacturers that may disrupt production or distribution or may require substantial resources to correct.

The FDA may withdraw a product approval if compliance with regulatory standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product may result in restrictions on the product or even complete withdrawal of the product from the market. Further, the failure to maintain compliance with regulatory requirements may result in administrative or judicial actions, such as fines, warning letters, holds on clinical studies, product recalls or seizures, product detention or refusal to permit the import or export of products,

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refusal to approve pending applications or supplements, restrictions on marketing or manufacturing, injunctions or civil or criminal penalties.

In addition, from time to time, legislation is drafted, introduced and passed in Congress that could significantly change the statutory provisions governing the approval, manufacturing and marketing of products regulated by the FDA. For example, in September 2007, the Food and Drug Administration Amendments Act of 2007 was enacted, giving the FDA enhanced post-market authority, including the authority to require post-market studies and clinical studies, labeling changes based on new safety information and compliance with REMS, approved by the FDA. In determining whether a REMS is necessary, the FDA must consider the size of the population likely to use the drug or biological product, the seriousness of the disease or condition to be treated, the expected benefit of the product, the duration of treatment, the seriousness of known or potential adverse events for the product and whether the product is a new molecular entity.

All three of our products in clinical development contain sufentanil, an opioid that is designated Schedule II by the DEA. As a result, all three products will be subjected to a REMS. In the case of ARX-02 for cancer breakthrough pain which will be outpatient use, this is likely to be the most comprehensive REMS. The FDA may require that a REMS include some or all of the following elements, such as medication guide, communication plan, elements to assure safe use, implementation system and timetable for submission and assessments or other measures.

In addition to new legislation that may be enacted, the FDA regulations and policies are often revised or reinterpreted by the agency in ways that may significantly affect our business and our product candidates. It is impossible to predict whether further legislative or FDA regulation or policy changes will be enacted or implemented and what the impact of such changes, if any, may be.

Foreign Regulation

In addition to regulations in the United States, we will be subject to a variety of foreign regulations governing clinical studies and commercial sales and distribution of our products to the extent we choose to sell any products outside of the United States. Whether or not we obtain FDA approval for a product, we must obtain approval of a product by the comparable regulatory authorities of foreign countries before we can commence clinical studies or marketing of the product in those countries. The approval process varies from country to country and the time may be longer or shorter than that required for FDA approval. The requirements governing the conduct of clinical studies, product licensing, pricing and reimbursement vary greatly from country to country.

In the European Union, our product candidates are subject to extensive regulatory requirements, which provide, among other things, that no medicinal product may be placed on the market of a European Union member state unless a marketing authorization has been issued by the European Medicines Agency or a national competent authority. European Union member states require both regulatory clearance by the national competent authority and a favorable ethics committee opinion prior to the commencement of a clinical study.

Controlled Substances Regulations

Sufentanil, a Schedule II controlled substance, is the active pharmaceutical ingredient in the ARX-01, ARX-02 and ARX-03 NanoTab product candidates. Triazolam, a Schedule IV controlled substance, is also an active pharmaceutical ingredient in ARX-03. Controlled substances are governed by the Drug Enforcement Administration of the U.S. Department of Justice. The handling of controlled substances and/or drug product by us, our contract manufacturers, analytical laboratories, packagers and distributors, are regulated by the Controlled Substances Act and Title 21 CFR, Part 1300-1399. Our current supply chain is also subject to the regulations of Health Canada s Drug Strategy and Controlled Substances Programme, and specifically, the Office of Controlled Substances.

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Unforeseen delays to the drug substance and drug product manufacture and supply chain may occur due to delays, errors or other unforeseen problems with the permitting process. Also, any one of our suppliers, contract manufacturers, laboratories, packagers and/or distributors could be the subject of DEA violations and enforcement could lead to delays or even loss of DEA license by the contractors.

Pharmaceutical Pricing and Reimbursement

Sales of pharmaceutical products depend significantly on the availability of third party reimbursement. Third-party payors include government health administrative authorities, managed care providers, private health insurers and other organizations. We anticipate third-party payors will provide reimbursement for our products. However, these third party payors are increasingly challenging the price and examining the cost-effectiveness of medical products and services. In addition, significant uncertainty exists as to the reimbursement status of newly approved healthcare products. We may need to conduct expensive pharmacoeconomic studies in order to demonstrate the cost-effectiveness of our products. The product candidates that we develop may not be considered cost-effective. It is time consuming and expensive for us to seek reimbursement from third party payors. Reimbursement may not be available or sufficient to allow us to sell our products on a competitive and profitable basis.

Health Law Compliance

In addition to FDA laws and regulations, we must comply with a variety of federal and state laws governing, among other things, the privacy of healthcare information, our relationships with healthcare providers and the reimbursement of prescription drug products. Although the federal health care program anti-kickback statute has a number of statutory exemptions and regulatory safe harbors protecting certain common activities from prosecution, the exemptions and safe harbors are drawn narrowly, and practices that involve remuneration intended to induce prescribing, purchases, or recommendations may be subject to scrutiny if they do not qualify for an exemption or safe harbor. Our practices may not in all cases meet all of the criteria for safe harbor protection from anti-kickback liability. Federal false claims laws prohibit any person from knowingly presenting, or causing to be presented, a false claim for payment to the federal government, or knowingly making, or causing to be made, a false statement to get a false claim paid. Recently, several pharmaceutical and other health care companies have been prosecuted under these laws for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. Other companies have been prosecuted for causing false claims to be submitted because of the company s marketing of the product for unapproved, and thus non-reimbursable, uses. The majority of states also have statutes or regulations similar to the federal anti-kickback law and false claims laws, which apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payer. Sanctions under these federal and state laws may include civil monetary penalties, exclusion of a manufacturer s products from reimbursement under government programs, criminal fines, and imprisonment. Because of the breadth of these laws and the narrowness of the safe harbors, it is possible that some of our business activities could be subject to challenge under one or more of such laws. Such a challenge could have a material adverse effect on our business, financial condition and results of operations.

In March 2010 the Patient Protection and Affordable Health Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or collectively the PPACA, was enacted, which includes measures to significantly change the way health care is financed by both governmental and private insurers. Among the provisions of the PPACA of greatest importance to the pharmaceutical industry are the following:

- an annual, nondeductible fee on any entity that manufactures or imports certain branded prescription drugs and biologic agents, apportioned among these entities according to their market share in certain government healthcare programs, beginning in 2011;

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- new requirements to report certain financial arrangements with physicians and others, including reporting any transfer of value made or distributed to prescribers and other healthcare providers and reporting any investment interests held by physicians and their immediate family members during each calendar year beginning in 2012, with reporting starting in 2013;

- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research;

- creation of the Independent Payment Advisory Board which, beginning in 2014, will have authority to recommend certain changes to the Medicare program that could result in reduced payments for prescription drugs and those recommendations could have the effect of law even if Congress does not act on the recommendations; and

- establishment of a Center for Medicare Innovation at the Centers for Medicare & Medicaid Services to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending beginning by January 1, 2011.

Many of the details regarding the implementation of the PPACA are yet to be determined, and at this time, it remains unclear the full effect that the PPACA would have on our business.

Research and Development

Conducting research and development is central to our business model. We have invested and expect to continue to invest significant time and capital in our research and development operations. Our research and development expenses were $8.2 million, $18.3 million and $15.5 million in 2007, 2008 and 2009, and $6.4 million for the nine months ended September 30, 2010. We plan to increase our research and development expenses for the foreseeable future as we seek to complete the development of ARX-01 and subsequently advance the development of ARX-02 and ARX-03.

Employees

As of December 31, 2010, we employed 19 full-time employees. Eleven of our employees were engaged in research and development activities and eight were engaged in support administration, including business development, finance, information systems, facilities and human resources. None of our employees is subject to a collective bargaining agreement. We consider our relationship with our employees to be good.

Facilities

We lease approximately 11,305 square feet of space for our headquarters in Redwood City, California under an agreement that expires on April 8, 2012. We believe that our existing facilities are adequate to meet our current needs.

Legal Proceedings

We are not currently a party to any legal proceedings.

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MANAGEMENT

Directors, Executive Officers and Key Employees

The following table sets forth information regarding our directors, executive officers and key employees as of December 31, 2010:

Name	Age	Position
Directors and Executive Officers		
Thomas A. Schreck[(1)]	53	Chairman and Co-Founder
Richard A. King	46	Director, President and Chief Executive Officer
Pamela P. Palmer, M.D., Ph.D.	47	Director, Chief Medical Officer and Co-Founder
Stephen J. Hoffman, Ph.D., M.D.[(1)(2)]	56	Director
Guy P. Nohra[(2)(3)]	50	Director
Howard B. Rosen[(2)(3)]	52	Director
Mark Wan[(1)(3)]	45	Director
James H. Welch	53	Chief Financial Officer
Lawrence G. Hamel	59	Chief Development Officer
Badri Dasu	47	Chief Engineering Officer
Key Employees		
Carter J. King	39	Vice President, Finance
Nigel Ray	49	Vice President, Business Development

(1) Member of nominating and corporate governance committee.
(2) Member of audit committee.
(3) Member of compensation committee.

The following includes a brief biography for each of our directors, executive officers and key employees, with each director biography including information regarding the experiences, qualifications, attributes or skills that caused our board of directors to determine that each member of our board of directors should serve as a director as of the date of this prospectus. There are no family relationships among any of our directors or executive officers.

Directors and Executive Officers

Thomas A. Schreck. Mr. Schreck has served as our Chairman since he co-founded AcelRx in July 2005, and as our President and Chief Executive Officer from July 2005 until April 2010. Since June 2010, Mr. Schreck has been co-founder and Chief Executive Officer of Sinusys Corporation, a medical device company. Prior to July 2005, he served as a founding President, and then Chief Financial Officer and a director of DURECT Corporation, an emerging specialty pharmaceutical company he co-founded in June 1998. Prior to 1998, Mr. Schreck held various investment banking positions in the San Francisco Bay Area and London, including Montgomery Securities and Manufacturers Hanover Limited. Mr. Schreck holds a B.A. in American Studies from Williams College. Mr. Schreck s historical knowledge of our company, his financial background and experience and his experience in the pharmaceutical industry provide him with the qualifications and skills to serve as a director.

Richard A. King. Mr. King has served as our director and President and Chief Executive Officer since May 2010. From April 2009 until May 2010, Mr. King acted as an independent consultant to a number of private and public biotechnology and venture capital companies. From October 2008 to April 2009, Mr. King served as President and General Manager of Tercica, Inc., a biotechnology company that was acquired by Ipsen, SA in 2008, and from February 2008 to October 2008, Mr. King served as President and Chief Operating Officer of Tercica, Inc., and from February 2007 until February 2008, served as Chief Operating Officer of Tercica, Inc. From January 2002 to October 2006, Mr. King served as

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Executive Vice President of Commercial Operations of Kos Pharmaceuticals, Inc., a pharmaceutical company that was acquired by Abbott Laboratories, a global, broad-based health care company, in 2006. From January 2000 to January 2002, Mr. King served as Senior Vice President of Commercial Operations at Solvay Pharmaceuticals, a pharmaceutical company that was acquired by Abbott Laboratories in 2009. From April 1992 to January 2000, Mr. King held various marketing positions at SmithKline Beecham Pharmaceuticals, now known as GlaxoSmithKline, a global pharmaceutical company. Mr. King holds a B.Sc. in Chemical Engineering from University of Surrey and an M.B.A. from Manchester Business School. Mr. King s extensive experience as an executive officer in public pharmaceutical companies and his knowledge of the day-to-day operations of our company provide him with the qualifications and skills to serve as a director.

Pamela P. Palmer, M.D., Ph.D. Dr. Palmer has served as our director and Chief Medical Officer since she co-founded the company in July 2005. Dr. Palmer has been on faculty at the University of California, San Francisco since 1996 and is currently a Clinical Professor of Anesthesia and Perioperative Care. Dr. Palmer was Director of UCSF PainCARE-Center for Advanced Research and Education from 2005 to 2009, and was Medical Director of the UCSF Pain Management Center from 1999 to 2005. Dr. Palmer has been a consultant of Omeros Corporation, a biopharmaceutical company, since she co-founded that company in 1994. Dr. Palmer holds an M.D. from Stanford University and a Ph.D. from the Stanford Department of Neuroscience. Dr. Palmer s extensive clinical and scientific experience in the treatment of acute and chronic pain as well as historical knowledge of our company provide her with the qualifications and skills to serve as a director.

Stephen J. Hoffman, Ph.D., M.D. Dr. Hoffman has served as our director since February 2010. Dr. Hoffman has served as a managing director at Skyline Ventures, a venture capital firm, since May 2007. From January 2003 to March 2007, Dr. Hoffman was a general partner at TVM Capital, a venture capital firm. Prior to that, he served as President, Chief Executive Officer and a director of Allos Therapeutics, a biopharmaceutical company from 1994 to 2002, where he remains Chairman of the board. From 1990 to 1994, Dr. Hoffman completed a fellowship in clinical oncology and a residency/fellowship in dermatology, both at the University of Colorado. Dr. Hoffman was the scientific founder of Somatogen Inc., a biotechnology company that was acquired by Baxter International, Inc., a global medical products and services company, in 1998, where he held the position of Vice President of Science and Technology from 1987 until 1990. He serves on the board of directors of Allos Therapeutics, Inc., a biopharmaceutical company, Concert Pharmaceuticals, Inc., a biotechnology company, Kai Pharmaceuticals, Inc., a biopharmaceutical company, Dicerna Pharmaceuticals, Inc., a biopharmaceutical company and Tolerx, Inc., a biotechnology company. Previously, Dr. Hoffman served on the board of directors of Sirtris Pharmaceuticals, Inc., a pharmaceutical company that was acquired by GlaxoSmithKline in 2008. Dr. Hoffman holds a Ph.D. in bio-organic chemistry from Northwestern University and an M.D. from the University of Colorado School of Medicine. Dr. Hoffman s scientific, financial and business expertise, including his diversified background as an executive officer and investor in public pharmaceutical companies, provides him with the qualifications and skills to serve as a director.

Guy P. Nohra. Mr. Nohra has served as our director since August 2006. Mr. Nohra co-founded Alta Partners, a venture capital firm investing in life science companies in 1996, and has served as Managing Director of Alta Partners since 1996. Mr. Nohra was also a partner at Burr, Egan, Deleage & Co., a venture capital firm, which he joined in 1989. From January 1984 until June 1987, Mr. Nohra was Product Manager of Medical Products with Security Pacific Trading Corporation, a consumer and commercial bank. Currently, Mr. Nohra serves on the board of directors of numerous private companies, including Carbylan Biosurgery, Inc., Coapt Systems, PneumRx, Inc. and Vertiflex, Inc., and is the Chairman of the Board of USGI Medical, Inc. In addition, Mr. Nohra previously served on the board of directors of ATS Medical, Inc., a company focused on the manufacture of cardiac surgery products, that was acquired by Medtronic, Inc., a medical device company, in 2010 and Cutera, Inc., a global medical device company. Mr. Nohra also serves on the board of directors of the Medical Device Manufacturing

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Association, a national trade organization that advocates for entrepreneurial medical technology companies. Mr. Nohra holds a B.A. in History from Stanford University and an M.B.A. from the University of Chicago. Mr. Nohra s medical technology and venture capital industry experience provides him with the qualifications and skills to serve as a director.

Howard B. Rosen. Mr. Rosen has served as our director since 2008. Mr. Rosen has served as interim President and Chief Executive Officer of Pearl Therapeutics, Inc. since June 2010. From 2004 to 2008, Mr. Rosen was Vice President of Commercial Strategy at Gilead Sciences, Inc., a biopharmaceutical company. Mr. Rosen was President of ALZA Corporation, a pharmaceutical and medical systems company that merged with Johnson & Johnson in 2001, from 2003 until 2004 and Vice President, Product Development from 2002 until 2003. Prior to that, from 1994 until 2002, Mr. Rosen held various positions at ALZA Corporation. From 1993 to 1994, Mr. Rosen managed the west coast practice of Integral, Inc., a consulting firm. From 1989 until 1993, Mr. Rosen was Director of Corporate Development at GenPharm International, Inc., a company focusing on transgenic animal technology that was acquired by Medarex, Inc., in 1997 and later acquired by Bristol-Myers Squibb Company, a global biopharmaceutical company, in 2009. Mr. Rosen is also a member of the board of directors of PavVax, Inc., a biotechnology company, CNS Therapeutics, Inc., a pharmaceutical company and Pearl Therapeutics, Inc., a company focused on developing combination therapies for the treatment of highly prevalent chronic respiratory diseases. Previously, Mr. Rosen served on the board of directors of Pharsight Corporation, a company focused on providing software products and consulting services to pharmaceutical and biotechnology companies that was acquired by Tripos International, a company focused on drug discovery informatics products and services in 2008. Mr. Rosen also served on the board of directors of CoTherix, Inc., a biopharmaceutical company that was acquired by Actelion Pharmaceuticals Ltd, a biopharmaceutical company in 2007. Mr. Rosen holds a B.S. in Chemical Engineering from Stanford University, an M.S. in Chemical Engineering from the Massachusetts Institute of Technology and an M.B.A. from the Stanford Graduate School of Business. Mr. Rosen s experience in the biopharmaceutical industry, including his specific experience with commercialization of pharmaceutical products, provides him with the qualifications and skills to serve as a director.

Mark Wan. Mr. Wan has served as our director since August 2006. Mr. Wan is a founding general partner of Three Arch Partners, a venture capital firm. Prior to co-founding Three Arch Partners in 1993, Mr. Wan was a general partner at Brentwood Associates, a private equity firm from 1987 until 1993. Since 1999, Mr. Wan has served on the board of directors of Epocrates, Inc., a company focused on providing mobile drug reference tools. Mr. Wan also serves as a director of Biosensors International Group, Ltd. a company focused on the development, manufacture and marketing of medical devices for interventional cardiology and critical care procedures. Mr. Wan also serves on the board of directors of numerous private companies, including Ascend Health Corporation, Eleme Medical, Inc., Ingenuity Systems, Inc., TriReme Medical, Inc. and Quattro Vascular Pte Ltd. Mr. Wan holds a B.S. in Engineering and a B.A. in Economics from Yale University and an M.B.A. from the Stanford Graduate School of Business. Mr. Wan s financial experience and extensive knowledge of our company provides him with the qualifications and skills to serve as a director.

James H. Welch. Mr. Welch has served as our Chief Financial Officer since October 1, 2010. From June 2006 until September 2010 Mr. Welch served as Chief Financial Officer and Corporate Secretary for Cerimon Pharmaceuticals, a biopharmaceutical company. Mr. Welch served as Vice President, Chief Financial Officer and Corporate Secretary for Rigel Pharmaceuticals, Inc., a drug development company from October 2000 until May 2006, and as Vice President, Finance and Administration from May 1999 until October 2000. From June 1998 until May 1999, Mr. Welch served as an independent consultant at various companies. Mr. Welch served as Chief Financial Officer of Biocircuits Corporation, a company focused on developing immunodiagnostic testing systems from February 1997 until June 1998, and from June 1992 until February 1997, he served as Corporate Controller. Mr. Welch holds a B.A. in Business Administration from Whitworth College and an M.B.A. from Washington State University.

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Lawrence G. Hamel. Mr. Hamel has served as our Chief Development Officer since September 2006. From 1986 until September 2006, Mr. Hamel served as Product Development Manager, Director Project Management, Executive Director Oral Product Development, and Vice President Oral Products Development at ALZA Corporation. From 1977 until 1985, Mr. Hamel held a number of positions at ALZA Corporation, including Senior Chemist, Research Scientist, and Senior Research Fellow. Mr. Hamel holds a B.S. in Biology from the University of Michigan.

Badri Dasu. Mr. Dasu has served as our Chief Engineering Office since September 2007. From December 2005 until September 2007, Mr. Dasu served as Vice President of Medical Device Engineering at Anesiva, a biopharmaceutical company. From March 2002 until December 2005, Mr. Dasu served as Vice President for Manufacturing and Device Development at AlgoRx Pharmaceuticals, Inc., an emerging pain management company, which merged with Corgentech Inc. in December 2005. From January 2000 until March 2002, Mr. Dasu served as Vice President of Manufacturing and Process Development at PowderJect Pharmaceuticals, a vaccine, drug and diagnostics delivery company that was acquired by Chiron Corporation in 2003 and later acquired by Novartis AG, a global healthcare and pharmaceutical company in 2006. Previously, Mr. Dasu served in various capacities in process development at Metrika, Inc., a company focused on the manufacture and marketing of disposable diabetes monitoring products that was acquired by Bayer HealthCare, LLC in 2006 and at Cygnus, Inc., a drug delivery and specialty pharmaceuticals company. Mr. Dasu holds a B.E. in Chemical Engineering from the University of Mangalore, India and M.S. in Chemical Engineering from the University of Tulsa.

Key Employees

Carter J. King. Mr. King has served as our Vice President, Finance since July 2006. From September 2002 to June 2006, Mr. King served as Associate Director, Corporate Planning at ALZA Corporation. From September 1998 to June 2002, Mr. King held a number of positions at Coulter Pharmaceutical/Corixa Corporation, a developer of immunotherapeutics, including Director of Finance. Prior to 1998, Mr. King spent four years in various finance roles at OnCare Inc., an oncology focused healthcare services firm, and at GATX Capital, a provider of leasing and related services to customers operating rail, marine and other targeted assets. Mr. King holds a B.A. in Business Economics from the University of California Santa Barbara and an M.B.A. from the Haas School of Business at the University of California, Berkeley.

Nigel Ray. Mr. Ray has served as our Vice President of Business Development since October 2009. From January 2009 until September 2009, Mr. Ray served as Vice President of Business Development at Limerick BioPharma, a biopharmaceutical company. From 1999 until 2009, Mr. Ray served in a variety of business development roles at DURECT Corporation, most recently as Executive Director of Business Development. Previously, Mr. Ray served in a variety of marketing and business roles for ALZA Corporation. Mr. Ray holds a B.A. in Human Biology from Stanford University and an M.B.A. from the University of California Los Angeles Anderson School of Business.

Director Independence

Upon the completion of this offering, our common stock is expected to be listed on the NASDAQ Global Market. Under the rules of the NASDAQ Stock Market, LLC, or NASDAQ, independent directors must comprise a majority of a listed company s board of directors within a specified period following that company s listing date in conjunction with its initial public offering. In addition, applicable NASDAQ rules require that, subject to specified exceptions, each member of a listed company s audit, compensation and nominating committees be independent within the meaning of applicable NASDAQ rules. Audit committee members must also satisfy the independence criteria set forth in Rule 10A-3 under the Securities Exchange Act of 1934, as amended, or the Exchange Act.

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In November 2010, our board of directors undertook a review of the independence of each director and considered whether any director has a material relationship with us that could compromise his ability to exercise independent judgment in carrying out his responsibilities. As a result of this review, our board of directors determined that all of our directors, other than Messrs. King and Schreck and Dr. Palmer, qualify as independent directors within the meaning of the NASDAQ rules. Accordingly, a majority of our directors are independent, as required under applicable NASDAQ rules. In making this determination, our board considered Mr. Nohra s affiliation with Alta Partners, one of our stockholders, Dr. Hoffman s affiliation with Skyline Ventures, one of our stockholders and Mr. Wan s affiliation with Three Arch Partners, one of our stockholders. As required under applicable NASDAQ rules, we anticipate that our independent directors will meet in regularly scheduled executive sessions at which only independent directors are present.

Voting Agreement

We are party to a voting agreement under which holders of our preferred stock, including our principal stockholders with which certain of our directors are affiliated, have agreed to vote in a certain way on certain matters, including with respect to the election of directors. Pursuant to the voting agreement, holders of our preferred stock have agreed to vote such that one director be a designee of Three Arch Partners IV, L.P. or its affiliates, who is currently Mark Wan; one director be a designee of ACP IV, L.P. or its affiliates, who is currently Guy Nohra; and one director be a designee of Skyline Venture Partners Qualified Purchaser Fund IV, L.P. or its affiliates, who is currently Stephen Hoffman. Upon the closing of this offering, the voting agreement will terminate in its entirety and none of our stockholders will have any special rights regarding the election or designation of members of our board of directors.

Board Composition

Our board of directors may establish from time to time by resolution the authorized number of directors. Currently, seven directors are authorized. In accordance with our amended and restated certificate of incorporation to be in effect immediately prior to the closing of this offering, our board of directors will be divided into three classes with staggered three-year terms. At each annual meeting of stockholders, the successors to directors whose terms then expire will be elected to serve from the time of election and qualification until the third annual meeting following election. After the completion of this offering, our directors will be divided among the three classes as follows:

- the Class I directors will be Messrs. Schreck and Nohra, and their terms will expire at the annual meeting of stockholders to be held in 2011;
- the Class II directors will be Mr. King and Drs. Hoffman and Palmer, and their terms will expire at the annual meeting of stockholders to be held in 2012; and
- the Class III directors will be Messrs. Rosen and Wan, and their terms will expire at the annual meeting of stockholders to be held in 2013.

Our amended and restated certificate of incorporation will provide that the authorized number of directors may be changed only by resolution of the board of directors.

Board Committees

Our board of directors has an audit committee, a compensation committee and a nominating and corporate governance committee. The composition and responsibilities of each committee are described below. Members serve on these committees until their resignation or until otherwise determined by our board.

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Audit Committee

Our audit committee consists of Messrs. Rosen and Nohra and Dr. Hoffman, each of whom is a non-employee member of our board of directors. Mr. Rosen serves as the chair of our audit committee. Our board of directors has determined that each of the directors serving on our audit committee meets the requirements for financial literacy under applicable rules and regulations of the SEC and NASDAQ. We are currently seeking an audit committee member who will be a financial expert as defined under the applicable rules and regulations of the SEC and who has the requisite financial sophistication as defined under the applicable rules and regulations of NASDAQ. The audit committee will be comprised of independent directors, subject to the phase-in periods available to companies listing on NASDAQ in connection with an initial public offering. Each member of the audit committee will be financially literate at the time such member is appointed. The composition of the audit committee will satisfy the independence and other requirements of NASDAQ and the SEC. The audit committee operates under a written charter that satisfies the applicable standards of the SEC and NASDAQ and which will be available on our website prior to the completion of this offering at www.acelrx.com.

The functions of our audit committee include, among other things:

- evaluating the performance, independence and qualifications of our independent registered public accounting firm and determining whether to retain our existing independent registered public accounting firm or engage new independent registered public accounting firm;
- reviewing and approving the engagement of our independent registered public accounting firm to perform audit services and any permissible non-audit services;
- monitoring the rotation of partners of our independent registered public accounting firm on our engagement team as required by law;
- reviewing our annual and quarterly financial statements and reports and discussing the statements and reports with our independent registered public accounting firm and management;
- reviewing with our independent registered public accounting firm and management significant issues that arise regarding accounting principles and financial statement presentation, and matters concerning the scope, adequacy and effectiveness of our internal control over financial reporting;
- reviewing with management and our registered public accounting firm any earnings announcements and other public announcements regarding material developments;
- establishing procedures for the receipt, retention and treatment of complaints received by us regarding financial controls, accounting or auditing matters and other matters;
- preparing the audit committee report that the SEC requires in our annual proxy statement;
- reviewing and providing oversight with respect to any related party transactions and monitoring compliance with our code of ethics; and

reviewing and evaluating, at least annually, the performance of the audit committee, including compliance of the audit committee with its charter.

Compensation Committee

Our compensation committee consists of Messrs. Nohra, Rosen and Wan. Mr. Nohra serves as the chair of our compensation committee. All members of our compensation committee satisfy the independence requirements under applicable NASDAQ rules and regulations. The compensation committee operates

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under a written charter that satisfies the applicable standards of NASDAQ and which will be available on our website prior to the completion of this offering at www.acelrx.com.

The functions of our compensation committee include, among other things:

- approving or recommending for approval to our board of directors the compensation and other terms of employment of our executive officers;
- approving or recommending to our board of directors performance goals and objectives relevant to the compensation of our executive officers and assessing their performance against these goals and objectives;
- evaluating and approving the equity incentive plans, compensation plans and similar programs, as well as modification or termination of existing plans and programs;
- evaluating and recommending to our board of directors the type and amount of compensation to be paid or awarded to board members;
- administering our equity incentive plans;
- establishing policies with respect to equity compensation arrangements;
- reviewing the competitiveness of our executive compensation programs and evaluating the effectiveness of our compensation policy and strategy in achieving expected benefits to us;
- approving or recommending to our board of directors the terms of any employment agreements, severance arrangements, change in control protections and any other compensatory arrangements for our executive officers;
- reviewing with management our disclosures under the caption Compensation Discussion and Analysis and recommending to the full board its inclusion in our reports to be filed with the SEC;
- preparing the compensation committee report that the SEC requires in our annual proxy statement;
- reviewing the adequacy of our compensation committee charter on a periodic basis; and
- reviewing and evaluating, at least annually, the performance of the compensation committee.

Nominating and Corporate Governance Committee

Our nominating and corporate governance committee consists of Messrs. Wan, Hoffman and Schreck. Mr. Wan serves as the chair of our nominating and corporate governance committee. Currently, our board of directors has determined that Messrs. Wan and Hoffman satisfy the

NASDAQ independence requirements for service on the Nominating and Corporate Governance Committee, and we expect that membership of this committee will be changed to comply with these requirements prior to the end of the phase-in period permitted by NASDAQ. The nominating and corporate governance committee operates under a written charter that satisfies the applicable standards of NASDAQ and which will be available on our website prior to the completion of this offering at www.acelrx.com.

The functions of our nominating and corporate governance committee include, among other things:

identifying, reviewing and evaluating candidates to serve on our board of directors;

determining the minimum qualifications for service on our board of directors;

evaluating director performance on the board and applicable committees of the board;

interviewing, evaluating, nominating and recommending individuals for membership on our board of directors;

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considering nominations by stockholders of candidates for election to our board;

considering and assessing the independence of members of our board of directors;

developing, as appropriate, a set of corporate governance principles, and reviewing and recommending to our board of directors any changes to such principles;

periodically reviewing our policy statements to determine their adherence to our code of business conduct and ethics and considering any request by our directors or executive officers for a waiver from such code;

reviewing the adequacy of its charter on an annual basis; and

evaluating, at least annually, the performance of the nominating and corporate governance committee.

Compensation Committee Interlocks and Insider Participation

The current members of our compensation committee are Messrs. Wan, Nohra and Rosen. None of the members of our compensation committee has at any time during the past three years been one of our officers or employees. None of our executive officers currently serves or in the prior three years has served as a member of the board of directors or compensation committee of any entity that has one or more executive officers serving on our board or compensation committee. For information regarding certain transactions with entities that members of our compensation committee are affiliated with, see the section entitled Certain Relationships and Related Party Transactions appearing elsewhere in this prospectus.

Board Leadership Structure and Role in Risk Oversight

Our board has a Chairman, Mr. Schreck, who has authority, among other things, to preside over board meetings, including meetings of the independent directors. Accordingly, the Chairman has substantial ability to shape the work of our board. We currently believe that separation of the roles of Chairman and Chief Executive Officer reinforces the independence of our board in its oversight of the business and affairs of our company. However, no single leadership model is right for all companies and at all times. The board recognizes that depending on the circumstances, other leadership models, such as combining the role of Chairman with the role of Chief Executive Officer, might be appropriate. Accordingly, the board may periodically review its leadership structure.

Our board is generally responsible for the oversight of corporate risk in its review and deliberations relating to our activities and has determined that our principal source of risk falls into two categories, financial and product development. The audit committee oversees management of financial risks; our board regularly reviews information regarding our cash position, liquidity and operations, as well as the risks associated with each. The board regularly reviews plans, results and potential risks related to our lead therapeutic development programs and other preclinical programs as well as financial and strategic risk related to our operations.

In addition, our nominating and corporate governance committee monitors the effectiveness of our corporate governance guidelines and policies and manages risks associated with the independence of the board and potential conflicts of interest. Our compensation committee oversees risk management as it relates to our compensation plans, policies and practices for all employees including executives particularly whether our compensation programs may create incentives for our employees to take excessive or inappropriate risks which could have a material adverse effect on the Company. While each committee is responsible for evaluating certain risks and overseeing the management of such risks, the entire board is regularly informed through committee reports about such risks.

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Code of Business Conduct and Ethics

We adopted a code of business conduct and ethics that applies to all of our employees, officers and directors including those officers responsible for financial reporting. Upon the completion of this offering, the code of business conduct and ethics will be available on our website at www.acelrx.com. We intend to disclose future amendments to the code, or any waivers of its requirements on our website to the extent permitted by the applicable rules and exchange requirements. The inclusion of our website address in this prospectus does not include or incorporate by reference the information on our website into this prospectus.

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EXECUTIVE COMPENSATION

Compensation Discussion and Analysis

Overview

This Compensation Discussion and Analysis explains our compensation philosophy, policies and practices for the following executives, our named executive officers:

Richard A. King	President and Chief Executive Officer
James H. Welch	Chief Financial Officer
Thomas A. Schreck	Former Chief Executive Officer and Former Principal Financial Officer
Pamela P. Palmer, M.D., Ph.D.	Chief Medical Officer
Lawrence G. Hamel	Chief Development Officer
Badri Dasu	Chief Engineering Officer

Compensation Philosophy and Objectives

We believe in providing a total compensation package to our executive management team through a combination of base salary, discretionary annual bonuses, grants under our long-term equity incentive compensation plan, and severance and change of control benefits, as well as broad-based health and welfare benefits programs that are available to all salaried employees. Our executive compensation programs are designed to achieve the following objectives:

- attract and retain talented and experienced executives, whose knowledge, skills and performance are critical to our success;
- motivate executives to achieve our business objectives;
- create a meaningful link between pay and performance;
- promote teamwork while also recognizing the role each executive plays in our success; and
- align the interests of our executive officers and stockholders.

We believe that our executive compensation programs should include short-term and long-term components, including cash and equity-based compensation, and should reward performance that consistently meets or exceeds expectations, including by increasing base salary levels, awarding cash bonuses and granting additional equity awards.

When setting executive compensation in any given year, we may consider a number of factors, including the following:

- corporate and/or individual performance, including specific business challenges for a given year, as we believe this encourages our executive officers to focus on achieving our business objectives;

the experiences and individual knowledge of the members of our board of directors regarding compensation programs at other companies, as we believe this approach helps us to compete in hiring and retaining the best possible talent while at the same time maintaining a reasonable and responsible cost structure;

compensation paid by other companies, as publicly reported by such companies or as reported in third party surveys, although in any given year, and with respect to any specific compensation element, we may or may not benchmark to any specified level of compensation;

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- internal pay equity of the compensation paid to one executive officer as compared to another that is, that the compensation paid to each executive should reflect the importance of his or her role to the company as compared to the roles of the other executives;

- the potential dilutive effect on our stockholders of equity awards granted to executive officers, as well as the potentially dilutive effect on our employees of financings undertaken prior to this offering;

- broader economic conditions, in order to ensure that our pay strategies are effective yet responsible, particularly in the face of any unanticipated consequences of the broader economy on our business; and

- individual negotiations with executives, particularly in connection with their initial compensation package, as these executives may be leaving meaningful compensation opportunities at their prior employer in order to work for us, as well as negotiations upon their departures, as we recognize the benefit to our stockholders of smooth transitions.

Our historical practice and our intent going forward is to perform at least an annual review of our executive officers overall compensation packages to determine whether they meet our compensation objectives.

Role of Our Board and Our Compensation Committee in Setting Executive Compensation

Prior to this offering, our compensation committee had the primary responsibility for approving the cash compensation packages for our executive officers and making recommendations to the board with regard to setting equity compensation. Certain elements of our compensation program, such as granting equity incentive awards and approving severance and change of control benefits, were determined by the board in consultation with the compensation committee. As part of its responsibility, the compensation committee has considered both the aggregate level of compensation offered (without necessarily benchmarking to a specific level of total target compensation, although with a view toward providing total cash compensation at or around the 50^{th} to 75^{th} percentile of survey data, as described in more detail below) and the mix of individual compensation elements (without necessarily trying to achieve a specific weighting as between the elements). As further described under the specific elements of compensation below, the compensation committee considered the recommendations of management with respect to the various elements of compensation and then either made a recommendation to the board or, with respect to cash compensation, made the final determination of base salary levels or bonus amounts. Following this offering, our compensation committee will generally be responsible for reviewing, modifying, approving and otherwise overseeing the compensation policies and practices applicable to our employees (including our executive officers), including the administration of our equity and cash incentive plans.

As part of its deliberations in any given year, the board and the compensation committee may review and consider factors such as the achievement of predefined milestones, the company s financial condition, operational data, tax and accounting consequences, the total compensation that may become payable to executives in various hypothetical scenarios, executive stock ownership information, company stock performance, analyses of historical executive compensation levels and current company-wide compensation levels, and the recommendations of our Chief Executive Officer.

Role of Our Management

Our Chief Executive Officer evaluates the performance of the other executive officers and employees on an annual basis and makes recommendations to the compensation committee with respect to salary adjustments, bonuses and stock option grants. Our Chief Executive Officer also makes recommendations on new hire compensation packages. Our board and our compensation committee review the

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performance of our Chief Executive Officer. Our Chief Executive Officer also makes recommendations regarding the design of compensation programs applicable to our executive officers and other senior executives, changes to existing compensation programs, and financial and other performance targets to be achieved under those programs. Our finance department works with our Chief Executive Officer to gather compensation data that he reviews in making his recommendations.

No executive officer participated directly in the final determinations or deliberations of our compensation committee (or our board of directors, as applicable) regarding the amount of any component of his or her own compensation package. From time to time members of our finance team attend meetings (or portions of meetings) of the board and the compensation committee in order to present survey and financial data and answer questions.

Limited Role of Compensation Consultants

Prior to this offering, neither our board nor our compensation committee had retained its own independent compensation consultant. In October 2010, in connection with preparations for this offering, the company retained Kara Halvorson Consulting LLC to assist management in reviewing human resources and compensation matters. The consultant has been working directly with the company s management team to review employment agreements and our compensation practices in connection with preparations for this offering. This consultant is paid by the company and has not been present at the deliberations of the board or the compensation committee. Following this offering, the compensation committee will consider retaining its own independent compensation consultant.

Benchmarking

We have not established a peer group of companies. As is the case with many private companies, our compensation committee and our board have discussed compensation levels in the context of the experiences and individual knowledge of each board member. This approach called for our board members to use their reasonable business judgment in determining compensation levels that would allow us to compete in hiring and retaining the best possible employees, without the cost of engaging a compensation consultant. In making its determinations with respect to 2009 and 2010 compensation, our board members reviewed compensation data as compiled by our finance department from the following surveys:

- 2008 Thelander Pre-IPO Survey: a survey of 193 pre-IPO companies, predominantly in life sciences, located primarily on the west coast, with an average stage of financing of less than $50 million;

- 2008 E&Y Life Sciences Survey: a survey of 189 pre-IPO and post-IPO life science companies located across the country, with an average stage of financing of less than three venture rounds; and

- 2007 BEDC Compensation Survey: a survey of 87 public and private life science companies, many of whom had fewer than 50 employees, located in the greater San Diego area.

In setting compensation for 2009, the finance department provided our compensation committee with the data points from only the Thelander Survey for total cash compensation and percentage stock ownership for each executive officer position, at the 50th and 75th percentiles. In setting compensation for 2010, the finance department provided our compensation committee with an average of all three of the surveys above, as adjusted by 4.5% to reflect cost of living increases since the dates of the surveys, at each of the 50th and 75th percentiles, for total cash compensation and percentage stock ownership for each executive.

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Our compensation committee has used the survey data to check their own assumptions and expectations about compensation levels. The board and the compensation committee may, but do not always, aim to set a specific element of compensation at or around the 50th to 75th percentiles as reflected by this survey data. We believe this approach helps us hire and retain the best possible talent while at the same time maintaining a reasonable and responsible cost structure. The board has not selected a peer group or benchmarking level to be used following this offering. Information about whether a given element of compensation was benchmarked in a given year is provided below under the discussion of each element.

Elements of Executive Compensation

The compensation program for our executive officers consists principally of base salary and long-term compensation in the form of stock options, with discretionary cash bonuses paid from time to time. We also offer limited severance protection through the terms of our stock options and certain employment agreements with our executive officers, with the benefits generally in the form of accelerated vesting of stock options in the case of termination of employment following a change of control. We believe that this mix of compensation elements appropriately retains executives, provides longer term incentives and rewards, and allows us to conserve our cash for use in the development of the our products. We do not affirmatively set out in any given year to apportion compensation in any specific ratio between cash and equity. Rather, in any given year, total compensation may skew more heavily toward either element, as a result of cash constraints, company performance, the value of our common stock and other factors described in the following table and narrative.

Compensation element	Material factors considered in 2009 and 2010	Objective
Base salary	Board members experience and knowledge	Attract and retain experienced executives
	Historical salary levels	Reward executives for achievement of company objectives
	Achievement of corporate objectives	
	Lack of a formal cash bonus plan	
	Expected future cash flows	
	Internal pay equity	
	Survey data	
	Individual negotiations	
Cash bonuses	Board members experience and knowledge	Attract and retain experienced executives
	Achievement of corporate objectives	Reward executives for achievement of company objectives
	Subjective review of each executive s overall individual performance	Link performance with compensation paid
	Internal pay equity	
	Expected future cash flows	
	Survey data	
	Individual negotiations	

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Compensation element	Material factors considered in 2009 and 2010	Objective
Long-term equity incentive awards	Board members experience and knowledge	Attract and retain experienced executives
	Achievement of corporate objectives	Motivate and reward executives for achievement of company objectives
	Subjective review of an executive s overall individual performance	Link performance with compensation paid
	Internal pay equity	Provide incentives to promote our growth and create stockholder value
	Survey data	Align the financial interests of our executive officers with those of our stockholders
	The potential dilutive effect on our stockholders	
	The potential dilutive effect of our financings on our employees equity awards	
	Individual negotiations	
Severance benefits	Board members experience and knowledge	Attract and retain experienced executives
	Internal pay equity	Motivate executives to achieve company objectives
	Individual negotiations	Align the financial interests of the executive officers with those of our stockholders
Employee benefits	Board members experience and knowledge	Attract and retain experienced executives
	Internal pay equity	

Base Salary

We provide base salary as a fixed source of compensation for our executives, allowing them a degree of certainty in the face of working for a privately held biotechnology company and having a meaningful portion of their compensation at risk in the form of options to purchase shares of such private company. The compensation committee recognizes the importance of base salaries as an element of compensation that helps to attract and retain our executives.

Base salaries for our executives are established based in part on individual negotiations with the executives when they join the company, and reflect the scope of their anticipated responsibilities, the individual experience they bring to the company, the committee members experiences and knowledge in compensating similarly situated individuals at other companies, the company s annual budget for salary increases, internal pay equity among executives, reference to survey data, and performance (company and/or individual) in the prior year. Historically, base salaries have been reviewed, and, if necessary, adjusted annually, typically in connection with our annual performance review process. The compensation committee does not apply specific formulas to determine increases. While the compensation committee members consider existing salaries plus any discretionary bonuses awarded as compared to the 50th and 75th percentiles of total cash compensation paid to similarly situated executives using the survey data described above, such reference points are not solely determinative.

In the first quarter of 2009, our compensation committee reviewed the base salaries of our executive officers, as well as Dr. Palmer s then current rate of consulting fees, taking into account the factors described above. In particular, our compensation committee considered the achievement in 2008 of a number of significant company milestones, including successful preparation for Phase 2 studies, efficient completion of the first Phase 2 study and the first positive Phase 2 data for the ARX-01 program, the limited financial budget that the board had allocated for salary increases on a company-wide basis in

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2009, and attention to internal pay equity as among officers. Specifically, given our limited budget for salary increases due to our expected cash flow constraints, more of the salary increase budget was allocated to our Chief Executive Officer and Dr. Palmer (that is, an increase in her consulting fees), reflecting the compensation committee deference to internal pay equity (that is, their greater level of duties and responsibilities in running the company as compared to our other executives) and so that their total cash compensation would be closer to the 50th to 75th percentile of total cash compensation (given that we do not have a formal cash bonus program) as reflected in the survey data. The compensation committee determined that since the majority of the base salary compensation increases were awarded to Mr. Schreck and Dr. Palmer, only limited salary increases were made to Messrs. Hamel and Dasu. Therefore, the compensation committee awarded cash bonuses in respect of 2008 performance in the first quarter of 2009 to Messrs. Hamel and Dasu (and not Mr. Schreck or Dr. Palmer given their salary increases), in recognition of the significant roles Messrs. Hamel and Dasu played in 2008 in achieving the first positive Phase 2 data for the ARX-01 program and advancing the Company s engineering efforts and so that their total cash compensation would be closer to the 50th to 75th percentile of total cash compensation as reflected in the survey data. Based on these factors, our compensation committee decided to adjust base salaries, retroactive to January 1, 2009, as set forth in the table below.

In July 2009, Dr. Palmer transitioned from her role as a consultant to a full time executive officer and employee. In connection with this transition, the compensation committee set her base salary for 2009 at $375,000 on an annual basis, representing, on an annual basis, an increase from her consulting fee rates of $350,000 per year (that is, from the level determined in the first quarter of 2009). The compensation committee set her base salary at this level based on her prior consulting rates, her individual negotiations and through assessment of internal pay equity (that is, the committee believed that as a founder and an executive officer, and given the scope of her responsibility, Dr. Palmer s salary should be closer to that of Mr. Schreck than the other executives).

In the first quarter of 2010, our compensation committee reviewed base salaries for our executive officers. The compensation committee considered the expected transition of Mr. Schreck from CEO and Dr. Palmer s recent hiring (and therefore the adequacy of her salary given her recent transition to full time employment) and did not make any adjustments to their salaries. However, the compensation committee wished to increase the base salary levels for Messrs. Hamel and Dasu to a level more reflective of their responsibilities and the importance of their role to the company s successful development of its products. The adjustments set forth in the table below were made so that their base salaries would be closer to the 50th percentile of total cash compensation (given that we do not have a formal cash bonus program) as reflected in the survey data. Based on these factors, our compensation committee decided to adjust base salaries, retroactive to January 1, 2010, as set forth in the table below.

In the spring of 2010, the company hired Mr. King and in October 2010, hired Mr. Welch. In connection with these new hires, the compensation committee set their base salaries on an annual basis as set forth in the table below. These decisions were based on individual negotiations (which reflect, in part, base salaries that these executives were being paid by their prior employers), internal pay equity (that is, Mr. King s salary should be greater than the other executive officers) and the scope of their expected responsibilities, particularly in connection with the company s preparations for this offering.

Executive Officer	First quarter 2009 increase in base salary for 2009	New 2009 base salary	Percentile against Survey Data[1]	Increase in base salary for 2010	New 2010 base salary	Percentile against Survey Data[1]
Richard A. King	N/A	N/A	N/A	N/A	$ 400,000	>75th[2]
James H. Welch	N/A	N/A	N/A	N/A	$ 290,000	>75th[2]
Thomas A. Schreck	$ 50,000	$ 375,000	<50th		$ 375,000	<50th
Pamela P. Palmer, M.D., Ph.D.	$ 50,000[3]	$ 375,000[4]	<50th		$ 375,000	50th 75th
Lawrence G. Hamel	$ 17,500	$ 262,500	<50th	$ 12,500	$ 275,000	<50th
Badri Dasu	$ 12,500	$ 247,500	50th 75th	$ 15,000	$ 262,500	50th

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(1) Percentile of the executive s base salary, plus any bonus awarded to him or her for the applicable year (as set forth in the table below), as compared to total cash compensation reported in the surveys.
(2) Assumes achievement of target bonus.
(3) Increase in annual consulting fee level from $300,000 to $350,000 that occurred in the first quarter of 2009 prior to Dr. Palmer joining as an employee.
(4) Upon joining as an employee in July 2009.

Cash Bonuses

In addition to base salaries, from time to time we have paid discretionary cash bonuses to reward our executives for achieving our strategic objectives or to provide a one time additional cash payment in lieu of providing a salary increase in order to manage budgetary constraints. As part of our annual performance reviews, the compensation committee reviews the company s performance, as well as each executive s contributions to the company in the prior year and makes decisions regarding cash bonuses to be paid in respect of such performance. Prior to this offering, the company has not set in advance specific performance goals related to bonus amounts that may be earned by our executive officers. Rather, as with many private companies, our compensation committee has decided to use a discretionary cash bonus system that looked at performance at the conclusion of the applicable year, and awarded cash bonuses based on its evaluation of performance, budgetary constraints, internal pay equity, the board members experiences and knowledge in compensating similarly situated individuals at other companies, and, from time to time, compiled survey data.

At the conclusion of 2009, the compensation committee considered the company s financial position, including a reduction in force in December 2009, partnering status, and achievement against financing milestones. As a result, no cash bonuses were earned or paid in respect of 2009 performance.

Historically, the company has not set target bonus amounts, expressed as a percentage of base salary or otherwise, for its executive officers. However, in 2010, in connection with hiring Messrs. King and Welch, the compensation committee approved annual cash bonus targets of 35% of base salary for Mr. King and 30% of base salary for Mr. Welch. The compensation committee approved these levels based on individual negotiations which reflect, in part, target bonus opportunities that these executives were foregoing from their prior employers, the board members experiences, and internal pay equity. On December 17, 2010, upon recommendation of the compensation committee, the board, in its discretion, based on the company s progress toward an IPO and Mr. King s general performance, and without weighting any specific factors, approved Mr. King s bonus of $94,500. The compensation committee has not set any performance goals for Mr. Welch s annual cash bonus for 2010, and any such prorated bonus will be made in the board s discretion when the board makes that determination later in 2011. No other named executive officers are eligible for bonus payments in 2010 pursuant to their offer letters.

Long-Term Equity Incentive Awards

We utilize long-term equity incentive awards in the form of options to purchase our common stock that, prior to this offering, have been granted under our 2006 Stock Plan. We believe that by providing our executives the opportunity to increase their ownership of our stock, the best interests of stockholders and executives will be more aligned and our executives will be encouraged to focus on long-term performance. These stock options enable our executive officers to benefit like stockholders from any increases in the value of our shares, while also exposing them to the risk of loss from any decrease in the value of our shares. We also believe that equity compensation is an integral component of our efforts to attract exceptional executives, senior management and employees.

As noted above, we believe that properly structured equity compensation works to align the long-term interests of stockholders and employees by creating a strong, direct link between employee compensation and stock price appreciation. Specifically, because we grant stock options with an exercise price not less than the fair market value of our common stock on the date of grant (which in the past has been determined by our board of directors, as described below under Equity granting policies), these

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options will have value to our executive officers only if the fair market value of our common stock increases after the date of grant and the date of vesting. Typically, stock options granted to our executive officers vest over 48 months, with 25% of the options vesting after 12 months, and the remainder vesting monthly over the next 36 months. This vesting schedule provides a retention incentive to our executive officers. Typically, the grants are made with a vesting commencement date of January 1 of the year of the grant to reflect that the grants are made with respect to prior year performance. In addition, we have agreed to the accelerated vesting of stock options held by our executive officers upon an involuntary termination of employment following certain material corporate transactions, subject to executing an effective release of claims. We believe these accelerated vesting provisions reflect current market practices, based on the collective knowledge and experiences of our board members (and without reference to any specific peer group data), and allow us to attract and retain highly qualified executives. In addition, these accelerated vesting provisions allow our executive officers to focus on closing a transaction that may be in the best interest of our stockholders even though the transaction may otherwise result in a termination of their employment and, absent such accelerated vesting, a forfeiture of their unvested equity awards. In addition, we believe the automatic accelerated vesting upon a change of control (regardless of a termination event) that was approved by the board in 2010 for Mr. Schreck is appropriate given his transition in 2010 from a member of the company s management team to Chairman of the board as the other board members have this vesting provision. Additional information regarding accelerated vesting prior to, upon or following a change in control is discussed below under Executive Employment Agreements and Termination Benefits.

In early 2008, the board established a fiscal budget and set of corporate objectives against which company performance would generally be evaluated. However, the board did not prospectively establish a specific pool of shares or weighting of individual milestones that would result in equity awards to our executive officers. Major objectives for 2008 included the successful preparation for, initiation and completion of the ARX-01 Phase 2 knee replacement study, advancing ARX-02 towards initiation of a Phase 2 study, and the completion of the ARX-03 Phase 1 study. In mid-2008, the board approved the addition of a second ARX-01 Phase 2 study start in abdominal surgery as a company goal. In early 2009, the compensation committee reviewed achievement against these goals and the recommendations our Chief Executive Officer on grant size. The compensation committee considered the role each executive played in achieving these goals, internal pay equity (that is, more of the grants should be allocated to the Chief Executive Officer and Chief Medical Officer given their responsibilities for running the company), and the compensation committee s judgment based on its experience and knowledge. The board met in March 2009 and tentatively approved the compensation committee s recommendations, including an option grant to Mr. Schreck for 25,000 shares, with all of the option grants to be made at a future board meeting upon receipt of a third party valuation. In July 2009, the board met after considering a third party valuation and other factors, and formally approved the grants that were tentatively approved in March 2009. In addition, the board reflected on the fact that certain anticipated hires had not occurred in the interim, freeing up additional shares to be used for additional grants from the company s available share pool, and their evaluation of the need for an additional grant to Mr. Schreck to reward and motivate him, and granted an additional option award to him covering an additional 25,000 shares on the same date (for a total award on July 1, 2009 of 50,000 shares).

In early 2009, the board established a budget of 150,000 to 180,000 shares for equity grants to be made to all of our employees, including executive officers, in respect of performance in 2009 that is, it was intended that annual equity grants for 2009 would be made from this pool of shares at the end of the year based on achievement of certain performance goals. The pool was set at a level that the board determined would provide adequate compensation for employees while limiting the dilutive impact on stockholders and prior to our preparations for the Series C preferred stock financing. The performance goals focused on milestones in the development of ARX-01, ARX-02 and ARX-03, including the completion of the ARX-01 Phase 2 abdominal surgery study, the completion of the ARX-01 device functionality study, completion of the ARX-01 End of Phase 2 meeting, initiation of the ARX-02 Phase 2

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cancer breakthrough pain study, and completion of the ARX-03 Phase 2 study. These goals were proposed by management and approved by the compensation committee. Any award of options at the end of 2009 after achievement of these goals was to be made entirely in the discretion of the board without any reference to a formula or specific weighting.

In early 2010, the board determined achievement against these goals. However, notwithstanding our actual achievement against these goals, the board used its discretion and eliminated the original pool as a result of the dilution to employees caused by the closing of our Series C preferred stock financing that closed in November 2009. Instead, the board determined the number of shares each executive officer was eligible to receive (based on factors described below) once the fair market value of our common stock could be reasonably determined, but did not make the actual grants of the options, as it was awaiting a third party valuation of our common stock. After considering that valuation and other factors, the board met in June 2010 and made grants to our executive officers as set forth in the table below. The size of these grants reflected the board s subjective consideration of internal pay equity (including the belief that more of the grants should be allocated to the Chief Executive Officer and Chief Medical Officer given their founder status and responsibilities for running the company), the board s judgment based on its experiences and knowledge, and, most importantly the fact that the equity holdings of our employees, including our executive officers, were substantially diluted due to the closing of the Series C preferred stock financing. Prior to the closing of the Series C preferred stock financing, we had approximately 4.75 million shares outstanding; after the closing of the Series C preferred stock financing, we had approximately 11.5 million shares outstanding. Therefore, the grants made in 2010 as set forth in the table below reflect the decision to offset approximately 50% of the dilution the officers suffered as a result of the Series C financing. The grants that were specifically intended to address the impact of the Series C financing contained vesting provisions such that 25% of the stock option shares were vested on January 1, 2010 with the remaining 75% of the stock option shares vesting over three years. Management requested, and the board approved, this special vesting schedule to help ameliorate the impact of the dilution from the financing. The board also, at that time, made an additional merit grant to Mr. Dasu in light of the importance of his role as the engineering leader of the ARX-01 device functionality study that achieved positive Phase 2 results. This grant was made with our standard four year vesting schedule. These grants were priced at 100% of the fair market value of our common stock, as determined by our board based in part on an independent third party valuation as of December 31, 2009.

In early 2010, our board established a budget of 175,000 to 237,500 shares for equity grants to all of our then-current employees (that is, exclusive of Messrs. King and Welch) to be granted in 2011 based on the achievement of certain performance goals in 2010. The pool was set at a level that the board determined would provide adequate compensation for employees while limiting the dilutive impact on stockholders. These performance goals focused on milestones in the development of ARX-01, ARX-02 and ARX-03 as well as broader strategic objectives. These goals were proposed by management and approved by the compensation committee. Any award of options at the end of 2010 after achievement of these goals will be made entirely at the discretion of the board without any reference to a formula or specific weighting.

In the spring of 2010, the company hired Mr. King and in the fall of 2010, the company hired Mr. Welch. In connection with these new hires, the board granted stock options to these executives, in the amounts set forth below, based primarily on individual negotiations (which reflect, in part, equity awards that these executives were eligible for with their prior employers), and survey data providing for grants at the 50th percentile to chief executive officers in an amount equal to 4.8% of the outstanding stock of such companies and chief financial officers in an amount equal to 1% of the outstanding stock of such companies. Mr. King negotiated a limited severance vesting provision for his initial option grant that expired in May 2010, and the board agreed to it as an inducement to have Mr. King join. The grants shown in the table below are equal to approximately 4% of the company for Mr. King and 1% of the company for Mr. Welch, on a fully diluted basis. In addition, Mr. King is eligible to be granted an option

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to purchase 115,208 shares of common stock of the company upon achievement of one of the following corporate milestones prior to June 30, 2011: (i) completion by the company of a qualifying partnering transaction, (ii) completion of this offering, or (iii) completion of a private financing raising at least $15 million from new investors. Mr. Welch is eligible to be granted an option covering 25,000 shares if we complete this offering or a private financing raising at least $15 million from new investors prior to June 30, 2011. All of these new hire grants are separate and apart from the 2010 pool described above, which pool was not increased as a result of the hiring of these executives.

Executive officer	Number of options related to 2008 performance (granted 2009)	Number of options related to Series C dilution (granted in 2010)	Merit and special grants in 2010 (including new hire grants)
Richard A. King	N/A	N/A	456,610
James H. Welch	N/A	N/A	125,000
Thomas A. Schreck	50,000	218,750	N/A
Pamela P. Palmer, M.D., Ph.D.	37,500	250,000	N/A
Lawrence G. Hamel	12,500	62,500	N/A
Badri Dasu	6,250	30,000	25,000

In December 2010, our board of directors, out of an abundance of caution, allowed eligible optionees, including our named executive officers, to increase the exercise price of stock options granted to them on June 15, 2010 in light of the potential risk of adverse tax consequences under Code Section 409A. Under Section 409A, stock options with an exercise price that is less than the fair market value of the stock on the date of grant may be deemed deferred compensation subject to adverse taxation under Section 409A. When setting the exercise price for the June 15, 2010 stock option grants, the board determined the fair market value of our common stock to be $1.20 per share, which valuation was subsequently revisited for financial reporting purposes when our board of directors began to analyze the prospects of an IPO as described in more detail under Management s Discussion and Analysis of our Financial Condition and Results of Operations Critical Accounting Policies and Estimates Stock-Based Compensation . As such, our board of directors subsequently determined a fair value of our common stock for financial reporting purposes to be $2.56 per share. We believe that the board s determination of the fair market value of our common stock on June 15, 2010 in reliance upon all material facts available to the board on that date, was reasonable. However, given the potential adverse tax consequences to the optionees if the Internal Revenue Service determines that our original determination was grossly unreasonable, our board decided, out of an abundance of caution, to make the offer to amend. All of our eligible named executive officers accepted the offer, and their eligible options were amended on December 27, 2010 (as further set forth in the 2010 Grants of Plan-Based Awards Table below).

Equity Granting Policies

We encourage our named executive officers to hold a significant equity interest in our company, but have not set specific ownership guidelines.

While our board of directors has delegated authority to our compensation committee to make stock option grants to executive officers, all stock option grants previously awarded to our executive officers have been granted by our full board of directors.

Prior to this offering, we did not have any program, plan or obligation that required us to grant equity compensation on specified dates and, because we have not been a public company, we have not made equity grants in connection with the release or withholding of material non-public information.

In the absence of a public trading market for our common stock, our board of directors has historically determined the fair market value of our common stock in good faith based upon

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consideration of a number of relevant factors including our financial condition, the likelihood of a liquidity event, the liquidation preference of our participating preferred stock, the price at which our preferred stock was sold, the enterprise values of comparable companies, our cash needs, operating losses, progress in the research and development of our product candidates, market conditions, material risks to our business and valuation reports obtained from independent valuation firms.

Severance and Change in Control Benefits

The employment of all of our executive officers is at will. However, Messrs. King, Welch and Schreck and Dr. Palmer have been eligible to receive cash severance benefits upon certain involuntary terminations of employment under the terms of their respective offer letter agreements. In addition, our executive officers are eligible for accelerated vesting upon an involuntary termination following a change in control and Mr. Schreck, in his capacity as a board member, is now eligible for accelerated single trigger vesting upon a change of control, as described in more detail under Long-term Equity Incentive Awards. The terms of these severance and change in control benefits are further described below under Employment Agreements and Arrangements Executive Employment Agreements and Termination Benefits. These benefits reflect the negotiations of each of the applicable executive officers with the company, as well as a desire to reflect internal pay equity among our executive officers with respect to their potential severance benefits (for instance, only our Chief Executive Officer, Chief Financial Officer and Chief Medical Officer are currently offered cash severance benefits, and the severance benefits offered to our current Chief Executive Officer provide for a greater number of months of salary continuation than to our Chief Financial Officer or Chief Medical Officer, due to the breadth of his responsibilities within the company). We consider these severance benefits critical to attracting and retaining high caliber executives and our board believes the benefits are comparable to benefits provided to similarly situated executives at other private companies. In addition, we believe that change in control severance benefits, including accelerated vesting provisions, if structured appropriately, serve to minimize the distractions to an executive and reduce the risk that an executive officer terminates his employment with us before an acquisition is consummated. We believe that our existing arrangements allow our executive officers to focus on continuing normal business operations and, in the case of change in control benefits, on the success of a potential business combination, rather than being distracted by how business decisions that may be in the best interest of our stockholders will impact each executive officer s own financial security. Specifically, our board believes these existing arrangements help ensure stability among our executive officers, and will help enable our executive officers to maintain a balanced perspective in making overall business decisions during periods of uncertainty.

Other Employee Benefits

We provide the following benefits to the executive officers, on the same terms and conditions as provided to all other eligible employees:

health, dental and vision insurance benefits;

a limited life insurance benefit of $15,000 as part of our health insurance plan; and

participation in a 401(k) plan, with non-discretionary 3% safe harbor profit sharing contribution.

We believe these benefits are important to attracting and retaining experienced executives. Like many private companies, the company does not currently provide perquisites to the executive officers, given our attention to the cost-benefit tradeoff of such benefits, and the boards knowledge of the benefit offerings at other private companies.

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Tax Deductibility of Compensation

Following the offering, Section 162(m) of the Code will limit our deduction for federal income tax purposes to not more than $1.0 million of compensation paid to certain executive officers in a calendar year. Compensation above $1.0 million may be deducted if it is performance-based compensation. The compensation committee has not yet established a policy for determining which forms of incentive compensation awarded to our executive officers will be designed to qualify as performance-based compensation. To maintain flexibility in compensating our executive officers in a manner designed to promote our objectives, the compensation committee has not adopted a policy that requires all compensation to be deductible. However, the compensation committee intends to evaluate the effects of the compensation deduction limits of Section 162(m) on any compensation it proposes to grant, and the compensation committee intends to provide future compensation in a manner consistent with the best interests of our stockholders.

Compensation Recovery Policies

The compensation committee has not determined whether it would attempt to recover bonuses from our executive officers if the performance objectives that led to the bonus determination were to be restated, or found not to have been met to the extent originally believed by the compensation committee. However, as a public company subject to the provisions of Section 304 of the Sarbanes-Oxley Act of 2002, if we are required as a result of misconduct to restate our financial results due to our material noncompliance with any financial reporting requirements under the federal securities laws, our chief executive officer and chief financial officer may be legally required to reimburse us for any bonus or other incentive-based or equity-based compensation they receive. In addition, the company will comply with the requirements of the Dodd-Frank Wall Street Reform and Consumer Protection Act and will adopt a compensation recovery policy once final regulations on the subject have been adopted.

Accounting Considerations

We account for equity compensation paid to our employees under ASC 718, which requires us to estimate and record an expense over the service period of the award. Our cash compensation is recorded as an expense at the time the obligation is accrued. The accounting impact of our compensation programs is one of many factors that are considered in determining the size and structure of our programs.

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Summary Compensation Table

The following table sets forth certain summary information for the year indicated with respect to the compensation earned by our Chief Executive Officer, our Chief Financial Officer, our former President and Chief Executive Officer (and acting principal financial officer) who resigned effective April 30, 2010, and each of our three other most highly compensated executive officers as of December 31, 2010. We refer to these individuals as our named executive officers elsewhere in this prospectus.

2010 and 2009 Summary Compensation Table

Name and Principal Position	Year	Salary ($)	Bonus ($)	Option Awards ($)[1]	All Other Compensation ($)[2]	Total ($)[3]
Richard A. King[4]	2010	306,667	94,500	925,032	6,000	1,332,199
President and Chief Executive Officer	2009					
James H. Welch[5]	2010	72,500	[6]	450,426		522,926
Chief Financial Officer	2009					
Thomas A. Schreck[7]	2010	125,000		432,142	214,082 [8]	771,224
Former President, Chief Executive Officer and Principal Financial Officer	2009	375,000		98,071	7,350	480,421
Lawrence G. Hamel	2010	275,000		123,469	7,350	405,819
Chief Development Officer	2009	262,500		24,518	7,350	294,368
Badri Dasu	2010	262,500		109,912	7,350	379,762
Chief Engineering Officer	2009	247,500		12,259	7,350	267,109
Pamela P. Palmer, M.D., Ph.D.	2010	375,000		493,876	7,350	876,226
Chief Medical Officer	2009	187,500		73,554	177,813 [9]	438,867

[1] The dollar amounts in this column represent the aggregate grant date fair value of all option awards granted during the indicated year. These amounts have been calculated in accordance with FASB ASC Topic 718, or ASC 718, using the Black-Scholes option-pricing model and excluding the effect of estimated forfeitures. For a discussion of valuation assumptions, see Note 10 to our financial statements and the discussion under Management s Discussion and Analysis of Financial Condition and Results of Operations Critical Accounting Policies and Estimates Stock-Based Compensation included elsewhere in this prospectus. These amounts do not necessarily correspond to the actual value that may be recognized from the option awards by the named executive officers. The modification of stock option awards originally granted in June 2010 as described under Employment Agreements and Arrangements Employee Benefit and Stock Plans Option Exercise Price Increase did not result in an increase in the fair value of such stock option awards under ASC 718.

[2] Except as otherwise noted, the dollar amounts in this column represent company profit sharing contributions under our 401(k) plan.

[3] For 2009, represents total compensation earned in 2009. For 2010, represents total compensation earned in 2010 other than with respect to Mr. Welch. For 2010 for Mr. Welch, represents total compensation earned in 2010, not including expected bonus compensation.

[4] Mr. King has served as our President and Chief Executive Officer since May 1, 2010 and did not receive any compensation from us in any capacity during the year ended December 31, 2009. Mr. King also served as our principal financial officer from May 1, 2010 until September 30, 2010.

[5] Mr. Welch has served as our Chief Financial Officer since October 1, 2010 and did not receive any compensation from us in any capacity during the year ended December 31, 2009.

[6] Mr. Welch is eligible to receive a prorated cash bonus for 2010 of up to $21,750, expected to be determined in the first quarter of 2011; however, no bonus determination has been made by the board as of the date of this prospectus.

[7] Mr. Schreck resigned as our President and Chief Executive Officer effective April 30, 2010 but continues to serve on our board of directors. Mr. Schreck also served as our principal financial officer until his resignation.

[8] Represents $7,350 in company profit sharing contributions under our 401(k) plan, $187,500 in base salary continuation and $19,232 in company-paid health coverage and benefits. For more information regarding Mr. Schreck s post-employment

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compensatory arrangements, please see Employment Agreements and Arrangements Executive Employment Agreements and Termination Benefits Thomas Schreck Employment and Resignation Agreements .

(9) Represents $2,813 in company profit sharing contributions under our 401(k) plan and $175,000 in consulting fees.

Grants of Plan-Based Awards Table

The following table provides information regarding grants of plan-based awards to each of our named executive officers during the year ended December 31, 2010. During the year ended December 31, 2010, none of our named executive officers were awarded any equity incentive plan awards, non-equity incentive plan awards or stock awards.

2010 Grants of Plan-Based Awards Table

Name	Grant Date(1)	All Other Option Awards: Number of Securities Underlying Options (#)(2)	Exercise or Base Price of Option Awards ($/Sh)(3)	Grant Date Fair Value of Stock and Option Awards ($)(4)
Richard A. King	06/15/10	456,610 (5)	1.20	925,032
	12/27/10	(6)	2.56	
James H. Welch	11/04/10	125,000 (7)	5.32	450,426
Thomas A. Schreck	06/15/10	218,750 (8)	1.20	432,142
	12/27/10	(6)	2.56	
Lawrence G. Hamel	06/15/10	62,500 (8)	1.20	123,469
	12/27/10	(6)	2.56	
Badri Dasu	06/15/10	30,000 (8)	1.20	59,265
	12/27/10	(6)	2.56	
	06/15/10	25,000 (9)	1.20	50,647
	12/27/10	(6)	2.56	
Pamela P. Palmer, M.D., Ph.D.	06/15/10	250,000 (8)	1.20	493,876
	12/27/10	(6)	2.56	

(1) Grant date of the option awards or, in the case of repriced option awards, the date of repricing.

(2) The stock options reflected in this column were granted under our 2006 Plan. For a description of the terms of stock options granted under our 2006 Plan, please see Employment Agreements and Arrangements Employee Benefit and Stock Plans 2006 Stock Plan.

(3) Our common stock was not publicly traded during 2010, and the exercise price of the options was determined by our board of directors on the grant date based on its determination of the fair market value of our common stock on such grant date. For more information on our methodology for determining the exercise price of the options, see Management s Discussion and Analysis of Financial Condition and Results of Operations Critical Accounting Policies and Estimates Stock-Based Compensation appearing elsewhere in this prospectus.

(4) The dollar amounts in this column represent the grant date fair value of each option award calculated in accordance with ASC 718 using the Black-Scholes option-pricing model and excluding the effect of estimated forfeitures. For a discussion of valuation assumptions, see Note 10 to our financial statements and the discussion under Management s Discussion and Analysis of Financial Condition and Results of Operations Critical Accounting Policies and Estimates Stock-Based Compensation included elsewhere in this prospectus. These amounts do not necessarily correspond to the actual value that may be recognized by the named executive officers.

(5) 28,538 of the shares subject to the option award were vested as of the grant date, 85,614 of the shares subject to the option award will vest on March 3, 2011, and the remaining shares subject to the option award will vest on an equal monthly basis over the following 36 months.

(6) Shows the increase in the exercise price of the option award referenced in the line immediately above. As described under Employment Agreements and Arrangements Employee Benefit and Stock Plans Option Exercise Price Increase, certain of the option awards granted to our named executive officers in 2010 were amended to increase the exercise price of the option awards from $1.20 per share to $2.56 per share. The repricing did not result in an increase in the fair value of these option awards under ASC 718.

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(7) The shares subject to this option award will vest as to 1/4th of the shares subject to the option award on September 30, 2011 with the remaining shares subject to the option award vesting on an equal monthly basis over the following 36 months.
(8) The shares subject to this option award vested as to 1/2 of the shares subject to the option award on December 31, 2010 with the remaining shares subject to the option award vesting on an equal monthly basis over the following 24 months.
(9) The shares subject to this option award vested as to 1/4th of the shares subject to the option award on December 31, 2010 with the remaining shares subject to the option award vesting on an equal monthly basis over the following 36 months.

Employment Agreements and Arrangements

Executive Employment Agreements and Termination Benefits

Thomas Schreck Employment and Resignation Agreements

In August 2006, we entered into an employment agreement with Mr. Schreck that provides for an initial base salary and discretionary bonus eligibility, as well as certain severance benefits. Under the employment agreement, in the event that Mr. Schreck s employment had terminated without cause or had terminated as a result of a voluntary termination by Mr. Schreck for certain stated reasons within 18 months after a change of control, as these terms are used in the employment agreement, Mr. Schreck would have been entitled to the following severance benefits, subject to Mr. Schreck executing a general release of claims in favor of us:

- a single lump-sum payment equal to six months of his base salary in effect as of the date of his termination;
- full vesting acceleration of all stock options and stock awards granted to Mr. Schreck under the 2006 Plan; and
- the same level of company-paid health coverage and benefits in effect for Mr. Schreck as of immediately prior to his termination date for a period of up to six months provided, among other things, that Mr. Schreck would have timely elected continuation under the Consolidated Omnibus Budget Reconciliation Act of 1985, or COBRA.

In addition, under the employment agreement, in the event that Mr. Schreck s employment had terminated without cause or had terminated as a result of a voluntary termination by Mr. Schreck for certain stated reasons before a change of control, as these terms are used in the employment agreement, Mr. Schreck would have been entitled to the same benefits described above except for the stock option and stock award vesting acceleration.

Effective April 30, 2010, Mr. Schreck resigned as our President and Chief Executive Officer, but continues to serve on our board of directors. In connection with his resignation, we entered into a resignation letter agreement with Mr. Schreck that provides for continuation of his base salary in effect as of the effective date of resignation ($375,000) for six months, commencing within 30 days after the effective date of his resignation, and the same level of company-paid health coverage and benefits in effect for Mr. Schreck as of the effective date of his termination for a period of six months (subject to his timely COBRA election). The resignation letter agreement also provides for continued vesting of his stock option awards and restricted stock for so long as he continues to serve on our board of directors or as a consultant to us, and provides for a general release of claims in favor of us. Please refer to Stock Option Vesting Acceleration below for description of Mr. Schreck s current stock option vesting acceleration.

Offer Letter Agreements

We have entered into offer letter agreements with each of our executive officers, other than Mr. Schreck, in connection with each named executive officer s commencement of employment with us. These offer letter agreements provide for the named executive officer s initial base salary, eligibility to participate in our standard benefit plans and in certain cases, the named executive officer s initial stock option grant along with vesting provisions with respect to that initial stock option grant. We amended and restated

these offer letter agreements in December 2010 to clarify certain terms for compliance with tax laws, to specify the terms of the option to be granted to Mr. King upon achievement of certain milestones and to provide additional change of control severance benefits to Mr. Welch and Dr. Palmer.

Under Mr. King s, Mr. Welch s and Dr. Palmer s respective offer letter agreements, in the event that such executive s employment is terminated by us without cause, or such executive resigns for good reason, or in a manner that constitutes an involuntary termination, in each case within one year following a change in control, as these terms are defined in the offer letters, each will be entitled to base salary and health benefits continuation for a period of twelve months in the case of Mr. King, and six months in the case of each of Mr. Welch and Dr. Palmer. Mr. King is also entitled to base salary and health benefits continuation for a period of twelve months in connection with a termination by us without cause that is not in connection with a change of control. Dr. Palmer s offer letter agreement also provides for a lump sum cash severance payment if she is terminated by us without cause (other than in connection with a change of control) during the first two years of her employment, which commenced on July 1, 2009, equal to four months of Dr. Palmer s base salary at the time of her termination plus two weeks of salary for every full year of regular, full time employment she has completed with us as of her termination. Please refer to Stock Option Vesting Acceleration below for description of the current stock option vesting acceleration for each of our executive officers. In order to receive severance benefits, each such executive must sign a waiver and release of claims.

Mr. King s and Mr. Welch s offer letters also provide for an opportunity to earn a target annual bonus of 35% and 30% of base salary, respectively, and Mr. King is entitled to an additional option grant covering 115,208 shares of our common stock upon achievement of one of the following corporate milestones prior to June 30, 2011: (i) completion by the company of a qualifying partnering transaction, (ii) completion of this offering, or (iii) completion of a private financing raising at least $15 million from new investors. Mr. Welch is entitled to an additional option grant covering 25,000 shares if we complete this offering or a private financing raising at least $15 million from new investors prior to June 30, 2011.

Each of our executive officers are employed at-will, and each such executive officer s employment may be terminated at any time by us or the named executive officer.

Stock Option Vesting Acceleration

Each of our executive officers, other than Mr. Schreck, are entitled to full double-trigger stock option vesting acceleration benefits (for all currently outstanding stock options and any stock options that may be granted in the future) in the event their service with us is terminated by us without cause, or such executive resigns for good reason, or in a manner that constitutes an involuntary termination, in each case within 18 months following a change in control, subject to signing an effective release of claims. Mr. Schreck was entitled to double-trigger vesting acceleration benefits while he served as our President and Chief Executive Officer. In September 2010, we amended the terms of each of Mr. Schreck s stock options to provide for full stock option vesting acceleration on a single-trigger basis, meaning that he is entitled to full stock option vesting acceleration immediately upon such a change in control transaction.

Founder s Vesting Agreements

Each of Mr. Schreck and Dr. Palmer, our co-founders, entered into founder s vesting agreements with us in August 2006. Under these agreements, 125,000 of the 250,000 shares of our common stock held by each of Mr. Schreck and Dr. Palmer became restricted and made subject to vesting in equal monthly installments over a four year period commencing on September 15, 2006. As of August 15, 2010, all of these restricted shares had vested in full. Under the founder s vesting agreement with Dr. Palmer, in the event that Dr. Palmer s service with us as an employee or consultant had terminated without cause or

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had terminated as a result of a voluntary termination by Dr. Palmer for certain stated reasons within 18 months after a change of control, as these terms are used in her founder s vesting agreement, and Dr. Palmer had signed a general release of claims in favor of us, any of her unvested restricted shares then held would have become fully vested as of the date of her termination.

Employee Benefit and Stock Plans

2006 Stock Plan

Our board of directors adopted, and our stockholders approved, the 2006 Stock Plan, or 2006 Plan, in August 2006. The 2006 Plan was subsequently amended by our board or directors and approved by our stockholders in each of February 2008 and November 2009. The 2006 Plan provides for the grant of incentive stock options, nonstatutory stock options and rights to acquire restricted stock. Upon the execution and delivery of the underwriting agreement for this offering, no additional stock options or other stock awards will be granted under the 2006 Plan. All outstanding stock options and other stock awards previously granted under the 2006 Plan will remain subject to the terms of the 2006 Plan.

Share reserve. There are 2,093,059 shares of common stock reserved for issuance under the 2006 Plan. As of September 30, 2010, 32,569 shares of common stock had been issued upon the exercise of stock options or pursuant to stock awards granted under the 2006 Plan, options to purchase 1,892,860 shares of common stock were outstanding at a weighted average exercise price at September 30, 2010 of $1.88 per share (or $2.77 per share assuming that the December 2010 stock option modification described under Management s Discussion and Analysis of Financial Condition and Results of Operations Critical Accounting Policies and Estimates Stock-Based Compensation had occurred as of September 30, 2010) and 167,630 shares remained available for future grant under the 2006 Plan.

Administration. Our board of directors administers our 2006 Plan. Our board of directors, referred to as the plan administrator, has the authority to interpret, amend, suspend and terminate the 2006 Plan, as well as to determine the terms of a stock award or amend the terms of a stock award. No amendment to the 2006 Plan or any award agreement thereunder may adversely affect the rights under any outstanding stock award unless the holder consents to that amendment. However, the plan administrator may unilaterally amend the 2006 Plan or the terms of an outstanding award agreement to conform the 2006 Plan or such stock award to any law, regulation or rule applicable to the 2006 Plan, including, but not limited to, Section 409A of the Code, as the plan administrator deems necessary or advisable.

Eligibility. The 2006 Plan provides for the grant of options and stock awards to our employees, directors and consultants. Incentive stock options may be granted only to employees. Nonstatutory stock options and stock awards may be granted to employees, directors and consultants.

Stock option provisions generally. In general, the exercise price of a stock option cannot be less than 100% of the fair market value of our common stock on the date of grant. However, an incentive stock option granted to a person who on the date of grant owns more than 10% of the combined voting power of all classes of our stock or any of our affiliates stock must have an exercise price that is at least 110% of the fair market value on the date of grant.

Generally, an optionee may not transfer his or her stock option other than by will or by the laws of descent and distribution. Shares subject to options under the 2006 Plan generally vest and become exercisable in periodic installments. With the exception of stock options issued to an officer, a director or a consultant, shares subject to stock options under the 2006 Plan must vest and become exercisable at a rate not less than 20% per year over a period of five years from the date of grant of the option, subject to the optionee s continued service.

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The aggregate fair market value, determined at the time of grant, of shares of our common stock with respect to which incentive stock options are exercisable for the first time by an optionee during any calendar year under all of our stock plans may not exceed $100,000. Options or portions thereof that exceed such limit will be treated as nonstatutory stock options.

The plan administrator determines the term of stock options granted under the 2006 Plan, up to a maximum of 10 years, provided that incentive stock options granted to persons who own more than 10% of the combined voting power of all classes of our stock or any of our affiliates stock may not have a term of more than five years. Unless the terms of an optionee s stock option agreement provide otherwise, if an optionee s service relationship with us, or any of our affiliates, ceases for any reason other than disability, death or cause, the optionee generally may exercise the vested portion of any stock options for a period of three months following the cessation of service. If an optionee s service relationship with us, or any of our affiliates, ceases due to disability or death, or an optionee dies within three months following cessation of service, the optionee or a beneficiary may generally exercise any vested options for a period of 12 months. The option term may be further extended in the event that exercise of the stock option following termination of the optionee s service is prohibited by applicable securities laws. In no event may an option be exercised beyond the expiration of its term. In the event of a termination for cause, options generally terminate immediately upon the termination of the optionee s service. Unless otherwise defined in an optionee s award agreement or in a written employment agreement or contract of service between an optionee and us, cause refers to an optionee s termination due to (1) the optionee s theft, dishonesty, willful misconduct, breach of fiduciary duty for personal profit, or falsification of any of our documents or records; (2) the optionee s material failure to abide by a code of conduct or other policies of ours (including, without limitation, policies relating to confidentiality and reasonable workplace conduct); (3) the optionee s unauthorized use, misappropriation, destruction or diversion of any tangible or intangible asset or corporate opportunity of ours (including, without limitation, the optionee s improper use or disclosure of our confidential or proprietary information); (4) any intentional act by the optionee which has a material detrimental effect on our reputation or business; (5) the optionee s repeated failure or inability to perform any reasonable assigned duties after written notice from us of, and a reasonable opportunity to cure, such failure or inability; (6) any material breach by the optionee of any employment or service agreement between the optionee and us, which breach is not cured pursuant to the terms of such agreement; or (7) the optionee s conviction (including any plea of guilty or nolo contendere) of any criminal act involving fraud, dishonesty, misappropriation or moral turpitude, or which impairs the optionee s ability to perform his or her duties with us.

Acceptable consideration for the purchase of common stock issued upon the exercise of a stock option will be determined by the plan administrator and may include (a) cash, check or cash equivalent, (b) the tender to us, or attestation to the ownership, of shares of our common stock previously owned by the optionee, (c) a broker-assisted cashless exercise, (d) other legal consideration approved by the plan administrator or (e) any combination of the foregoing.

Stock purchase rights generally. Rights to acquire restricted stock may be granted pursuant to restricted stock purchase agreements adopted under the 2006 Plan. The purchase price for restricted stock purchase rights cannot be less than 85% of the fair market value of our common stock on the date of grant or the date the purchase is consummated, provided that the purchase price for restricted stock purchase rights granted to a person who on the date of grant owns or is deemed to own more than 10% of the total combined voting power of all classes of our stock or any of our affiliates stock must be at least 100% of the fair market value on the date of grant or the date the purchase is consummated. Payment of the purchase price for restricted stock purchase rights may be made using (1) cash, check or a cash equivalent, (2) past services provided to us or our affiliates, (3) other legal consideration permitted by the plan administrator or (4) any combination of the foregoing. Shares of common stock acquired under a restricted stock purchase right may, but need not, be subject to a share repurchase option in our

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favor in accordance with a vesting schedule to be determined by the plan administrator, in which case, if a participant s service relationship with us terminates, we may repurchase any or all of the shares of common stock subject to the restricted stock purchase award that have not vested as of the date of termination. With the exception of shares acquired under a restricted stock purchase right award by an officer, a director or a consultant, our repurchase right with respect to shares subject to vesting in connection with a restricted stock purchase award must lapse at the rate of at least 20% of the shares per year over the period of five years from the date of grant of the restricted stock purchase right. A holder of a stock purchase right may not transfer his or her stock purchase right other than by will or by the laws of descent and distribution.

Changes to capital structure. In the event that there is a specified type of change in our capital structure, such as a stock split or recapitalization, appropriate adjustments will be made to the number of shares subject to the 2006 Plan and to the number of shares and price per share of all outstanding options and stock awards.

Change in control. In the event of certain change in control transactions involving us, such as our liquidation or dissolution or an event that results in a material change in the ownership of our company, the plan administrator has the discretion to take any of the following actions with respect to stock awards under the 2006 Plan:

- accelerate the vesting of a stock award;
- arrange for the assumption, continuation or substitution of a stock award by the surviving or acquiring entity or its parent company; or
- cancel or arrange for the cancellation of the stock award in exchange for a payment in (1) cash, (2) stock, or (3) other property, and in any such case in an amount equal to the fair market value of the consideration to be paid per share of stock in the change of control over the exercise price per share.

Stock awards that are neither assumed or continued by the surviving or acquiring entity or its parent company nor exercised as of the effective time of the change in control will terminate and cease to be outstanding as of the effective time of the change in control.

Option Exercise Price Increase

In December 2010, our board of directors, out of an abundance of caution, allowed eligible optionees, including our named executive officers, to increase the exercise price of stock options granted to them on June 15, 2010 in light of the potential risk of adverse tax consequences under Code Section 409A. Under Section 409A, stock options with an exercise price that is less than the fair market value of the stock on the date of grant may be deemed deferred compensation subject to adverse taxation under Section 409A. When setting the exercise price for the June 15, 2010 stock option grants, the board determined the fair market value of our common stock to be $1.20 per share, which valuation was subsequently revisited for financial reporting purposes when our board of directors began to analyze the prospects of an IPO as described in more detail under Management s Discussion and Analysis of our Financial Condition and Results of Operations Critical Accounting Policies and Estimates Stock-Based Compensation . As such, our board of directors subsequently determined a fair value of our common stock for financial reporting purposes to be $2.56 per share. We believe that the board s determination of the fair market value of our common stock on June 15, 2010 in reliance upon all material facts available to the board on that date, was reasonable. However, given the potential adverse tax consequences to the optionees if the Internal Revenue Service determines that our original determination was grossly unreasonable, our board decided, out of an abundance of caution, to make the offer to amend. All of our eligible named executive officers accepted the offer, and their eligible options were amended on December 27, 2010 (as further set forth in the 2010 Grants of Plan-Based Awards Table above).

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2011 Equity Incentive Plan

Our board of directors adopted, and our stockholders approved, the 2011 Equity Incentive Plan, or 2011 Incentive Plan, in January 2011 as a successor to the 2006 Plan. We expect the 2011 Incentive Plan will become effective immediately upon the execution and delivery of the underwriting agreement for this offering. The 2011 Incentive Plan will terminate on January 4, 2021, unless sooner terminated by our board of directors. Our board of directors may amend or suspend the 2011 Incentive Plan at any time, although no such action may impair the rights under any then-outstanding award without the holder s consent.

Stock awards. The 2011 Incentive Plan provides for the grant of incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards, performance-based stock awards, and other forms of equity compensation, or collectively, stock awards, all of which may be granted to employees, including officers, and to non-employee directors and consultants. Additionally, the 2011 Incentive Plan provides for the grant of performance cash awards. Incentive stock options may be granted only to employees. All other awards may be granted to employees, including officers, and to non-employee directors and consultants.

Share reserve. Initially, the aggregate number of shares of our common stock that may be issued pursuant to stock awards under the 2011 Incentive Plan after the 2011 Incentive Plan becomes effective is 1,875,000 shares. Then, the number of shares of our common stock reserved for issuance under the 2011 Incentive Plan will automatically increase on January 1st each year, starting on January 1, 2012 and continuing through January 1, 2020, by 4% of the total number of shares of our common stock outstanding on December 31 of the preceding calendar year, or such lesser number of shares of common stock as determined by our board of directors. The maximum number of shares that may be issued pursuant to the exercise of incentive stock options under the 2011 Incentive Plan is 10,000,000 shares.

No person may be granted stock awards covering more than 1,000,000 shares of our common stock under our 2011 Incentive Plan during any calendar year pursuant to stock options, stock appreciation rights and other stock awards whose value is determined by reference to an increase over an exercise or strike price of at least 100% of the fair market value on the date the stock award is granted. Additionally, no person may be granted in a calendar year a performance stock award covering more than 750,000 shares or a performance cash award having a maximum value in excess of $1,000,000. Such limitations are designed to help assure that any deductions to which we would otherwise be entitled with respect to such awards will not be subject to the $1,000,000 limitation on the income tax deductibility of compensation paid to any covered executive officer imposed by Section 162(m) of the Code.

If a stock award granted under the 2011 Incentive Plan expires or otherwise terminates without being exercised in full, or is settled in cash, the expiration, termination or settlement shall not reduce (or otherwise offset) the number of shares of common stock that may be available for issuance under the 2011 Incentive Plan. In addition, the following types of shares under the 2011 Incentive Plan may become available for the grant of new stock awards under the 2011 Incentive Plan: (1) shares that are forfeited to or repurchased by us prior to becoming fully vested; (2) shares withheld to satisfy income or employment withholding taxes; or (3) shares used to pay the exercise price of an option. Shares issued under the 2011 Incentive Plan may be previously unissued shares or reacquired shares bought by us on the open market. As of the date hereof, no awards have been granted and no shares of our common stock have been issued under the 2011 Incentive Plan.

Administration. Our board of directors, or a duly authorized committee thereof, has the authority to administer the 2011 Incentive Plan. Our board of directors has delegated its authority to administer the 2011 Incentive Plan to our compensation committee under the terms of the compensation committee s

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charter. Our board of directors may also delegate to one or more of our officers the authority to (1) designate employees (other than other officers) to be recipients of stock options or stock appreciation rights, and (2) determine the number of shares of common stock to be subject to such stock awards, provided that our board of directors must specify the total number of shares of common stock that may be subject to stock awards granted by such officer and that such officer may not grant a stock award to himself or herself. Subject to the terms of the 2011 Incentive Plan, our board of directors or the authorized committee or officer, referred to as the plan administrator, determines recipients, dates of grant, the numbers and types of stock awards to be granted and the terms and conditions of the stock awards, including the period of their exercisability and vesting schedule applicable to a stock award. Subject to the limitations set forth below, the plan administrator will also determine the exercise price, strike price or purchase price of awards granted and the types of consideration to be paid for the award.

The plan administrator has the authority to reduce the exercise price (or strike price) of any outstanding option or stock appreciation right, cancel and re-grant any outstanding option or stock appreciation right or take any other action that is treated as a repricing under U.S. generally accepted accounting principles, with the consent of any adversely affected participant.

Stock options. Incentive and nonstatutory stock options are granted pursuant to stock option agreements adopted by the plan administrator. The plan administrator determines the exercise price for a stock option, within the terms and conditions of the 2011 Incentive Plan, provided that the exercise price of a stock option generally cannot be less than 100% of the fair market value of our common stock on the date of grant. Options granted under the 2011 Incentive Plan vest at the rate specified by the plan administrator.

The plan administrator determines the term of stock options granted under the 2011 Incentive Plan, up to a maximum of 10 years. Unless the terms of an optionee s stock option agreement provides otherwise, if an optionee s service relationship with us, or any of our affiliates, ceases for any reason other than disability, death or cause, the optionee may generally exercise any vested options for a period of three months following the cessation of service. The option term may be extended in the event that exercise of the option or sale of shares received upon exercise of the option following such a termination of service is prohibited by applicable securities laws or our insider trading policy. If an optionee s service relationship with us, or any of our affiliates, ceases due to disability or death, or an optionee dies within a certain period following cessation of service, the optionee or a beneficiary may generally exercise any vested options for a period of 12 months in the event of disability and 18 months in the event of death. In the event of a termination for cause, options generally terminate immediately upon the occurrence of the event giving rise to the right to terminate the individual for cause. In no event may an option be exercised beyond the expiration of its term.

Acceptable consideration for the purchase of common stock issued upon the exercise of a stock option will be determined by the plan administrator and may include (1) cash, check, bank draft or money order, (2) a broker-assisted cashless exercise, (3) the tender of shares of our common stock previously owned by the optionee, (4) a net exercise of the option if it is a nonstatutory option, and (5) other legal consideration approved by the plan administrator.

Unless the plan administrator provides otherwise, options generally are not transferable except by will, the laws of descent and distribution, or pursuant to a domestic relations order. An optionee may designate a beneficiary, however, who may exercise the option following the optionee s death.

Tax limitations on incentive stock options. The aggregate fair market value, determined at the time of grant, of our common stock with respect to incentive stock options that are exercisable for the first time by an optionee during any calendar year under all of our stock plans may not exceed $100,000. Options or portions thereof that exceed such limit will generally be treated as nonstatutory stock options. No

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incentive stock option may be granted to any person who, at the time of the grant, owns or is deemed to own stock possessing more than 10% of our total combined voting power or that of any of our affiliates unless (1) the option exercise price is at least 110% of the fair market value of the stock subject to the option on the date of grant, and (2) the term of the incentive stock option does not exceed five years from the date of grant.

Restricted stock awards. Restricted stock awards are granted pursuant to restricted stock award agreements adopted by the plan administrator. Restricted stock awards may be granted in consideration for (1) cash, check, bank draft or money order, (2) past services rendered to us or our affiliates, or (3) any other form of legal consideration. Common stock acquired under a restricted stock award may, but need not, be subject to a share repurchase option in our favor in accordance with a vesting schedule to be determined by the plan administrator. Rights to acquire shares under a restricted stock award may be transferred only upon such terms and conditions as set by the plan administrator.

Restricted stock unit awards. Restricted stock unit awards are granted pursuant to restricted stock unit award agreements adopted by the plan administrator. The plan administrator will determine the vesting terms of restricted stock unit awards. The plan administrator will determine the consideration to be paid, if any, by the participant upon delivery for each share subject to a restricted stock unit award, which may be paid in any form of legal consideration acceptable to the plan administrator. A restricted stock unit award may be settled by cash, delivery of stock, a combination of cash and stock as deemed appropriate by the plan administrator, or in any other form of consideration set forth in the restricted stock unit award agreement. Additionally, dividend equivalents may be credited in respect of shares covered by a restricted stock unit award. Except as otherwise provided in the applicable award agreement, restricted stock units that have not vested will be forfeited upon the participant s cessation of continuous service for any reason.

Stock appreciation rights. Stock appreciation rights are granted pursuant to stock appreciation right grant agreements adopted by the plan administrator. The plan administrator determines the strike price for a stock appreciation right, which generally cannot be less than 100% of the fair market value of our common stock on the date of grant. Upon the exercise of a stock appreciation right, we will pay the participant an amount equal to the product of (1) the excess of the per share fair market value of our common stock on the date of exercise over the strike price, multiplied by (2) the number of shares of common stock with respect to which the stock appreciation right is exercised. A stock appreciation right granted under the 2011 Incentive Plan vests at the rate specified in the stock appreciation right grant agreement as determined by the plan administrator.

The plan administrator determines the term of stock appreciation rights granted under the 2011 Incentive Plan, up to a maximum of ten years. Unless the terms of a participant s stock appreciation right grant agreement provides otherwise, if a participant s service relationship with us, or any of our affiliates, ceases for any reason other than cause, disability or death, the participant may generally exercise any vested stock appreciation right for a period of three months following the cessation of service. The stock appreciation right term may be further extended in the event that exercise of the stock appreciation right or the sale of shares received upon exercise of the stock appreciation right following such a termination of service is prohibited by applicable securities laws. If a participant s service relationship with us, or any of our affiliates, ceases due to disability or death, or a participant dies within a certain period following cessation of service, the participant or a beneficiary may generally exercise any vested stock appreciation right for a period of 12 months in the event of disability and 18 months in the event of death. In the event of a termination for cause, stock appreciation rights generally terminate immediately upon the occurrence of the event giving rise to the right to terminate the individual for cause. In no event may a stock appreciation right be exercised beyond the expiration of its term.

Performance awards. The 2011 Incentive Plan permits the grant of performance-based stock and cash awards that may qualify as performance-based compensation not subject to the $1,000,000 limitation on

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the income tax deductibility of compensation paid to a covered executive officer imposed by Section 162(m) of the Code. To help assure that the compensation attributable to performance-based awards will so qualify, our compensation committee can structure such awards so that stock or cash will be issued or paid pursuant to such award only after the achievement of certain pre-established performance goals during a designated performance period.

The performance goals that may be selected include one or more of the following: (1) earnings (including earnings per share and net earnings); (2) earnings before interest, taxes and depreciation; (3) earnings before interest, taxes, depreciation and amortization; (4) total stockholder return; (5) return on equity or average stockholders equity; (6) return on assets, investment, or capital employed; (7) stock price; (8) margin (including gross margin); (9) income (before or after taxes); (10) operating income; (11) operating income after taxes; (12) pre-tax profit; (13) operating cash flow; (14) sales or revenue targets; (15) increases in revenue or product revenue; (16) expenses and cost reduction goals; (17) improvement in or attainment of working capital levels; (18) economic value added (or an equivalent metric); (19) market share; (20) cash flow; (21) cash flow per share; (22) share price performance; (23) debt reduction; (24) implementation or completion of projects or processes; (25) customer satisfaction; (26) stockholders equity; (27) capital expenditures; (28) debt levels; (29) operating profit or net operating profit; (30) workforce diversity; (31) growth of net income or operating income; (32) billings; and (33) to the extent that an award is not intended to comply with Section 162(m) of the Code, other measures of performance selected by our board of directors.

The performance goals may be based on a company-wide basis, with respect to one or more business units, divisions, affiliates, or business segments, and in either absolute terms or relative to the performance of one or more comparable companies or the performance of one or more relevant indices. Unless specified otherwise (1) in the award agreement at the time the award is granted or (2) in such other document setting forth the performance goals at the time the goals are established, the plan administrator will appropriately make adjustments in the method of calculating the attainment of performance goals as follows: (1) to exclude restructuring and/or other nonrecurring charges; (2) to exclude exchange rate effects, as applicable, for non-U.S. dollar denominated goals; (3) to exclude the effects of changes to U.S. generally accepted accounting principles; (4) to exclude the effects of any statutory adjustments to corporate tax rates; (5) to exclude the effects of any extraordinary items as determined under U.S. generally accepted accounting principles; (6) to exclude the dilutive effects of acquisitions or joint ventures; (7) to assume that any business divested by us achieved performance objectives at targeted levels during the balance of a performance period following such divestiture; (8) to exclude the effect of any change in the outstanding shares of our common stock by reason of any stock dividend or split, stock repurchase, reorganization, recapitalization, merger, consolidation, spin-off, combination or exchange of shares or other similar corporate change, or any distributions to common stockholders other than regular cash dividends; (9) to exclude the effects of stock based compensation and/or the award of bonuses under our bonus plans; and (10) to exclude the effect of any other unusual, non-recurring gain or loss or other extraordinary item. In addition, the plan administrator retains the discretion to reduce or eliminate the compensation or economic benefit due upon attainment of the goals and to define the manner of calculating the performance criteria it selects to use for a performance period. The performance goals may differ from participant to participant and from award to award.

Other stock awards. The plan administrator may grant other awards based in whole or in part by reference to our common stock. The plan administrator will set the number of shares under the stock award and all other terms and conditions of such awards.

Changes to capital structure. In the event that there is a specified type of change in our capital structure, such as a stock split or recapitalization, the plan administrator shall appropriately and proportionately adjust: (a) the class(es) and maximum number of shares reserved for issuance under the 2011 Incentive Plan and the class(es) and maximum number of shares by which the share reserve may

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increase automatically each year, (b) the class(es) and maximum number of shares that may be issued upon the exercise of incentive stock options, (c) the class(es) and maximum number of shares subject to stock awards that can be granted in a calendar year (as established under the 2011 Incentive Plan pursuant to Section 162(m) of the Code) and (d) the class(es) and number of shares and price per share of stock subject to outstanding stock awards.

Corporate transactions. In the event of certain specified significant corporate transactions, unless otherwise provided in the instrument evidencing the stock award or any other written agreement between us or any affiliate and the holder of the stock award, the plan administrator has the discretion to take any of the following actions with respect to stock awards:

- arrange for the assumption, continuation or substitution of a stock award by a surviving or acquiring entity or parent company;
- arrange for the assignment of any reacquisition or repurchase rights held by us to the surviving or acquiring entity or parent company;
- accelerate the vesting of the stock award and provide for its termination prior to the effective time of the corporate transaction;
- arrange for the lapse of any reacquisition or repurchase right held by us;
- cancel or arrange for the cancellation of the stock award in exchange for such cash consideration, if any, as our board of directors may deem appropriate; or
- make a payment equal to the excess of (a) the value of the property the participant would have received upon exercise of the stock award over (b) the exercise price otherwise payable in connection with the stock award.

Our board of directors is not obligated to treat all stock awards, even those that are of the same type, in the same manner.

Change in control. The plan administrator may provide, in an individual award agreement or in any other written agreement between a participant and us, that the stock award will be subject to additional acceleration of vesting and exercisability in the event of a certain specified change in control. However, in the absence of such a provision, no such acceleration of the stock award will occur.

2011 Employee Stock Purchase Plan

Our board of directors adopted, and our stockholders approved, the 2011 Employee Stock Purchase Plan, or ESPP, in January 2011. We expect the ESPP will become effective immediately upon the execution and delivery of the underwriting agreement for this offering.

Share reserve. The ESPP initially authorizes the issuance of 250,000 shares of our common stock pursuant to purchase rights granted to our employees or to employees of any of our designated affiliates. The number of shares of our common stock reserved for issuance will automatically increase on January 1st each year, starting January 1, 2012 and continuing through January 1, 2020, in an amount equal to the lower of (1) 2% of the total number of shares of our common stock outstanding on December 31 of the preceding calendar year, or (2) a number of shares of common stock as determined by our board of directors. If a purchase right granted under the ESPP terminates without having been exercised, the shares of our common stock not purchased under such purchase right will be available for issuance under the ESPP.

Administration. Our board of directors, or a duly authorized committee thereof, has the authority to administer the ESPP. Our board of directors has delegated its authority to administer the ESPP to our

compensation committee. Our board of directors or the authorized committee is referred to as the plan administrator.

Purchase rights. The ESPP is implemented through a series of offerings of purchase rights to eligible employees. Purchase rights are generally not transferable. Under the ESPP, we may specify offerings with a duration of not more than 27 months, and may specify one or more shorter purchase periods within each offering. Each offering will have one or more purchase dates on which shares of our common stock will be purchased for the employees who are participating in the offering. An offering may be terminated early under certain circumstances such as a material change in control of AcelRx. The plan administrator has the discretion to structure an offering so that if the fair market value of the shares of our common stock on the first day of a new purchase period within such offering is less than or equal to the fair market value of the shares of our common stock on the first day of the offering, then (a) that offering shall terminate immediately, and (b) the participants in such terminated offering shall be automatically enrolled in a new offering beginning on the first day of such new purchase period.

Payroll deductions. Generally, all regular employees, including executive officers, employed by us or by any of our designated affiliates, may participate in the ESPP and may contribute, normally through payroll deductions, up to 15% of their earnings toward the purchase of our common stock under the ESPP. Unless otherwise determined by the plan administrator, common stock will be purchased for participating employees at a price per share equal to the lower of (a) 85% of the fair market value of a share of our common stock on the first date of an offering, or (b) 85% of the fair market value of a share of our common stock on the date of purchase.

Limitations. Employees may have to satisfy one or more of the following service requirements before participating in the ESPP, as determined by the plan administrator: (a) customary employment with us or one of our affiliates for more than 20 hours per week and more than five months per calendar year or (b) continuous employment with us or one of our affiliates for a minimum period of time prior to the first date of an offering, provided that such minimum period may not to exceed two years. No employee may purchase shares under the ESPP at a rate in excess of $25,000 worth of our common stock, based on the fair market value per share of our common stock at the beginning of an offering, for each calendar year in which such purchase right is outstanding. Finally, no employee will be eligible for the grant of any purchase rights under the ESPP if, immediately after such rights are granted, such employee owns our stock possessing five percent or more of the total combined voting power or value of all classes of our outstanding capital stock.

Changes to capital structure. In the event that there is a specified type of change in our capital structure such as a stock split or recapitalization, appropriate adjustments will be made to (a) the class(es) and maximum number of shares reserved under the ESPP, (b) the class(es) and maximum number of shares by which the share reserve may increase automatically each year, (c) the class(es) and number of shares subject to, and purchase price applicable to, all outstanding purchase rights, and (d) any limits on the class(es) and number of shares that may be purchased in an ongoing offering.

Corporate transactions. In the event of certain significant corporate transactions, such as an acquisition of the AcelRx that results in a material change in the ownership of AcelRx, any then-outstanding purchase rights under the ESPP may be assumed, continued or substituted for by any surviving or acquiring entity or its parent company, provided that the rights of any participant under any such assumption, continuation or substitution will not be impaired. If the surviving or acquiring entity or its parent company elects not to assume, continue or substitute for such purchase rights, then the participants accumulated contributions will be used to purchase shares of our common stock within 10 business days prior to such corporate transaction, and such purchase rights will terminate immediately thereafter.

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Plan amendments. The plan administrator has the authority to amend, suspend or terminate the ESPP, provided any such action will not be taken without the consent of an adversely affected participant except as necessary to comply with any laws, listing requirements or governmental regulations or to maintain favorable tax, listing or regulatory treatment. We will obtain stockholder approval of any amendment to our ESPP as required by applicable law.

401(k) Plan

We maintain a tax-qualified 401(k) retirement plan for all employees who satisfy certain eligibility requirements, including requirements relating to age and length of service. Under our 401(k) plan, employees may elect to defer a portion of their eligible compensation subject to applicable annual Internal Revenue Code limits. We provide a discretionary safe harbor profit sharing contribution equal to 3% of a participant s compensation to our eligible participants, which is 100% vested when made. We intend for the 401(k) plan to qualify under Section 401(a) and 501(a) of the Code so that contributions by employees to the 401(k) plan, and income earned on those contributions, are not taxable to employees until withdrawn from the 401(k) plan.

Pension Benefits

We do not maintain any pension or retirement plans.

Nonqualified Deferred Compensation

We do not maintain any nonqualified deferred compensation plans.

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Outstanding Equity Awards at December 31, 2010

The following table presents information regarding outstanding equity awards held by our named executive officers as of December 31, 2010.

2010 Outstanding Equity Awards at Fiscal Year-End Table

	Option Awards			
Name	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Option Exercise Price ($)[1]	Option Expiration Date
Richard A. King	28,538	428,072 [2]	2.56	06/15/2020
James H. Welch		125,000 [3]	5.32	11/04/2020
Thomas A. Schreck	109,375	109,375 [4]	2.56	06/15/2020
	12,500	12,500 [4]	5.52	07/01/2019
	12,500	12,500 [4]	5.52	07/01/2019
	28,125	9,375 [6]	4.00	08/14/2018
	18,750	[7]	1.32	04/03/2017
Lawrence G. Hamel	31,250	31,250 [4]	2.56	06/15/2020
	6,250	6,250 [4]	5.52	07/01/2019
	14,062	4,688 [8]	1.20	12/05/2017
	25,000	[9]	1.20	04/03/2017
	12,500	[7]	1.20	04/03/2017
Badri Dasu	15,000	15,000 [4]	2.56	06/15/2020
	6,250	18,750 [5]	2.56	06/15/2020
	3,125	3,125 [4]	5.52	07/01/2019
	30,468	7,032 [10]	1.20	10/25/2017
Pamela P. Palmer, M.D., Ph.D.	125,000	125,000 [4]	2.56	06/15/2020
	18,750	18,750 [4]	5.52	07/01/2019
	28,125	9,375 [6]	4.00	08/14/2018
	25,000	[7]	1.32	04/03/2017

(1) The dollar amounts in this column reflect the increase in the exercise price of the options we granted to our named executive officers on June 15, 2010 as described under Employment Agreements and Arrangements Employee Benefit and Stock Plans Option Exercise Price Increase.

(2) The shares subject to this stock option vested as to 28,538 of the shares subject to the option on June 15, 2010, with 85,614 of the shares subject to the stock option vesting on March 3, 2011 and the remaining shares subject to the stock option vesting on an equal monthly basis over the following 36 months.

(3) The shares subject to this stock option will vest as to 1/4th of the shares subject to the option on September 30, 2011, with the remaining shares subject to the stock option vesting on an equal monthly basis over the following 36 months.

(4) The shares subject to this stock option vested as to 1/2 of the shares subject to the option on December 31, 2010 with the remaining shares subject to the stock option vesting on an equal monthly basis over the following 24 months.

(5) The shares subject to this stock option vested as to 1/4th of the shares subject to the option on December 31, 2010 with the remaining shares subject to the stock option vesting on an equal monthly basis over the following 36 months.

(6) The shares subject to this stock option vested as to 1/4th of the shares subject to the option on December 31, 2008, with the remaining shares subject to the stock option vesting on an equal monthly basis over the following 36 months.

(7)

The shares subject to this stock option vested as to 1/4th of the shares subject to the option on December 31, 2007, with the remaining shares subject to the stock option vesting on an equal monthly basis over the following 36 months.

(8) The shares subject to this stock option vested as to 1/4th of the shares subject to the option on December 4, 2008, with the remaining shares subject to the stock option vesting on an equal monthly basis over the following 36 months.

(9) The shares subject to this stock option vested as to 1/4th of the shares subject to the option on September 20, 2007, with the remaining shares subject to the stock option vesting on an equal monthly basis over the following 36 months.

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(10) The shares subject to this stock option vested as to 1/4th of the shares subject to the option on September 25, 2008, with the remaining shares subject to the stock option vesting on an equal monthly basis over the following 36 months.

Option Exercises and Stock Vested

The following table shows information regarding the vesting of restricted stock held by our named executive officers during the year ended December 31, 2010. No stock options were exercised by our named executive officers during the year ended December 31, 2010.

2010 Option Exercises and Stock Vested Table

	Stock Awards	
Name	Number of Shares Acquired on Vesting (#)	Value Realized on Vesting ($)(1)
Richard A. King		
James H. Welch		
Thomas A. Schreck	20,833	104,165
Lawrence G. Hamel		
Badri Dasu		
Pamela P. Palmer, M.D., Ph.D.	20,833	104,165

(1) The value realized on vesting has been calculated based on the initial public offering price per share of $5.00 multiplied by the number of shares vested. More information about the restricted stock held by Mr. Schreck and Dr. Palmer can be found under Employment Agreements and Arrangements Executive Employment Agreements and Termination Benefits Founder s Vesting Agreements.

Potential Payments Upon Termination or Change in Control

Please refer to the section entitled Employment Agreements and Arrangements Executive Employment Agreements and Termination Benefits above for a description of the compensation and benefits payable to each of our named executive officers in certain termination situations. The amount of compensation and benefits payable to each named executive officer, other than Mr. Schreck, in various termination situations has been estimated in the tables below, assuming the applicable termination event occurred on December 31, 2010. All of the potential compensation and benefits listed in the tables below are compensation or benefits that would have been made, pursuant to the terms of the offer letter agreements with our named executive officers and the terms of the 2006 Plan and the stock option agreements thereunder. For purposes of the tables below, we have assumed that none of the potential compensation and benefits would be subject to the excise tax imposed pursuant Section 4999 of the Code and therefore reduced in accordance with the terms of the applicable agreements.

We entered into a resignation letter agreement with Mr. Schreck in connection with his resignation as our President and Chief Executive Officer as described under Employment Agreements and Arrangements Executive Employment Agreements and Termination Benefits. Pursuant to the resignation letter agreement with Mr. Schreck, we continued to pay his base salary that was in effect as of the effective date of his resignation for a six month period following his resignation, or a total of $187,500 in base salary continuation payments, and provided Mr. Schreck with six months of continued company-paid health coverage and benefits at a cost to us of $19,232 in the aggregate. The resignation letter agreement also provides for continued vesting of his stock option awards and restricted stock for so long as he continues to serve on our board of directors or as a consultant to us, and provides for a general release of claims in favor of us.

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Richard A. King

Compensation and Benefits	Termination Without Cause Not in Connection With a Change in Control ($)	Change in Control and Termination Without Cause or For Good Reason ($)
Base continuation[1]	400,000	400,000
Continued health coverage[2]	19,320	19,320
Stock option vesting acceleration[3]		1,044,495

(1) Represents twelve months of base salary continuation payments.
(2) Represents twelve months of continued company-paid health coverage.
(3) The value of vesting acceleration is calculated based on the initial public offering price per share of $5.00 with respect to unvested option shares subject to acceleration minus the exercise price of these unvested option shares.

James H. Welch

Compensation and Benefits	Change in Control and Termination Without Cause or Eligible Voluntary Termination ($)
Base continuation[1]	145,000
Continued health coverage[2]	11,197
Stock option vesting acceleration[3]	0

(1) Represents six months of base salary continuation payments.
(2) Represents six months of continued company-paid health coverage.
(3) The value of vesting acceleration is calculated based on the initial public offering price per share of $5.00 with respect to unvested option shares subject to acceleration minus the exercise price of these unvested option shares.

Pamela P. Palmer, M.D., Ph.D.

Compensation and Benefits	Upon Termination Prior to Employment Anniversary Not in Connection With a Change in Control ($)[1]	Change in Control and Termination Without Cause or Eligible Voluntary Termination ($)
Severance payment	140,625	
Base continuation[2]		187,500
Continued health coverage[3]		5,742
Stock option vesting acceleration[4]		304,625

(1) Dr. Palmer is entitled to severance in the event her employment is terminated during the first two years of her employment, which commenced on July 1, 2009. The amount listed in this column represents a severance payment equal to four months of Dr. Palmer s base salary plus two weeks of salary for the full year of regular, full time employment Dr. Palmer had completed with us as of December 31, 2010.
(2) Represents six months of base salary continuation payments.
(3) Represents six months of continued company-paid health coverage.
(4)

The value of stock option vesting acceleration is calculated based on the initial public offering price per share of $5.00 with respect to unvested option shares subject to acceleration minus the exercise price of these unvested option shares.

Other Named Executive Officers

Name	Change in Control and Termination Without Cause or Eligible Voluntary Termination Stock Option Vesting Acceleration ($)[1]
Lawrence G. Hamel	93,738
Badri Dasu	107,444

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(1) The value of vesting acceleration is calculated based on the initial public offering price per share of $5.00 with respect to unvested option shares subject to acceleration minus the exercise price of these unvested option shares.

Non-Employee Director Compensation

Cash Compensation Arrangements

Other than respect to Mr. Rosen, our non-employee directors do not currently receive any cash compensation for their services as members of our board of directors or any committee of our board of directors. Mr. Rosen currently receives an annual retainer of $30,000 per year. Our non-employee directors are reimbursed for travel, lodging and other reasonable expenses incurred in connection with their attendance at board of director or committee meetings.

In January, 2011, our board of directors adopted a non-employee director compensation policy, which will be effective for all of our non-employee directors effective upon the execution and delivery of the underwriting agreement for this offering. Pursuant to the non-employee director compensation policy, each member of our board of directors who is not our employee will receive an annual retainer of $30,000 plus $2,000 as a meeting fee for each board meeting attended by the non-employee director in person. In addition, our non-employee directors will receive the following cash compensation for board services, as applicable:

- the board chair will receive an additional annual retainer of $25,000;
- the audit committee chair will receive an additional annual retainer of $10,000;
- the compensation committee chair will receive an additional annual retainer of $5,000;
- the nominating and corporate governance committee chair will receive an additional annual retainer of $5,000; and
- each committee member will receive $1,000 as a meeting fee for each committee meeting attended by the non-employee director in person.

All board and committee retainers accrue and are payable on a quarterly basis at the end of each calendar quarter of service. After this offering, we will continue to reimburse our non-employee directors for their travel and other reasonable expenses incurred in attending board of director or committee meetings.

Equity Compensation Arrangements

Our non-employee directors are currently eligible to receive stock awards under our 2006 Stock Plan, as amended, or the 2006 Plan. To date, Mr. Rosen is our only non-employee director who has received any stock awards under the 2006 Plan while serving in such capacity. In August 2008, we granted a stock option to purchase 22,500 shares of common stock at an exercise price of $4.00 per share to Mr. Rosen under the 2006 Plan. This option has a four year vesting schedule, with 1/4th of the shares vesting one day prior to the one year anniversary of the vesting commencement date and the remaining shares vesting on an equal monthly basis over the following 36 months. We also granted a stock option to Mr. Rosen to purchase 16,250 shares of common stock at an exercise price of $1.20 per share under the 2006 Plan in June 2010. This option was subsequently amended in December 2010 to increase the exercise price to $2.56 per share as described in more detail under Employment Agreements and Arrangements Employee Benefit and Stock Plans Option Exercise Price Increase. This option has a three year vesting schedule, with 1/4th of the shares vested on the vesting commencement date and the remaining shares subject to the stock option vesting on an equal monthly basis over the following 36 months. In the event of a change in control transactions involving us, such as our liquidation or dissolution of or an event that results in a material change in the ownership of our company, the vesting of all shares subject to each option granted to Mr. Rosen will accelerate in full and be fully exercisable. Upon the execution and

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delivery of the underwriting agreement for this offering, no additional stock options or other stock awards will be granted under the 2006 Plan. For a description of the terms of the 2006 Plan, see Executive Compensation Employment Agreements and Arrangements Employee Benefit and Stock Plans 2006 Stock Plan.

Our non-employee director compensation policy, which will be effective for all of our non-employee directors effective upon the execution and delivery of the underwriting agreement for this offering, provides for automatic grants of stock options to our non-employee directors under our 2011 Incentive Plan following this offering. Upon election or appointment to our board, each non-employee director will receive an initial grant of a stock option to purchase 15,000 shares of our common stock, which will vest as to 1/36th of the shares subject to the option on an equal monthly basis over a three-year period. Additionally, on the date of each annual meeting of stockholders, each non-employee director who is then serving as a director or who is elected to the board on the date of such annual meeting will receive a grant of a stock option to purchase 12,500 shares of our common stock, which will vest as to 1/24th of the shares subject to the option on an equal monthly basis over a two-year period. All these options will be granted with an exercise price equal to the fair market value of our common stock on the date of the grant, and shall be entitled to full vesting acceleration as of immediately prior to the effective date of certain change in control transactions involving us, such as our liquidation or a dissolution of or an event that results in a material change in the ownership of our company. For a description of the terms of the 2011 Incentive Plan, see Executive Compensation Employment Agreements and Arrangements Employee Benefit and Stock Plans 2011 Equity Incentive Plan.

Director Compensation Table

The following table sets forth certain summary information for the year ended December 31, 2010 with respect to the compensation of our non-employee directors. Neither Mr. King (who has served as our President and Chief Executive Officer since May 1, 2010) nor Dr. Palmer, each of whom are executive officers, received or receives any additional compensation for serving on our board of directors or its committees. In addition, Mr. Schreck, who served as our President and Chief Executive Officer until April 30, 2010, did not receive any additional compensation for serving on our board of directors or its committees during the year ended December 31, 2010, and all of his compensation for 2010 is summarized under Summary Compensation Table above.

2010 Director Compensation Table

Name	Fees Earned or Paid in Cash ($)	Option Awards ($)[1]	Total ($)
Howard B. Rosen	30,000	32,102	62,102
Stephen J. Hoffman Ph.D., M.D.			
Guy P. Nohra			
Mark Wan			

(1) The dollar amount in this column for Mr. Rosen represents the grant date fair value of the stock option award granted to Mr. Rosen on June 15, 2010. This amount has been calculated in accordance with ASC 718 using the Black-Scholes option-pricing model and excluding the effect of estimated forfeitures. For a discussion of valuation assumptions, see Note 10 to our financial statements and the discussion under Management s Discussion and Analysis of Financial Condition and Results of Operations Critical Accounting Policies and Estimates Stock-Based Compensation included elsewhere in this prospectus. These amounts do not necessarily correspond to the actual value that may be recognized from the option award by Mr. Rosen. The modification of Mr. Rosen s stock option award originally granted on June 15, 2010 as described under Employment Agreements and Arrangements Employee Benefit and Stock Plans Option Exercise Price Increase did not result in an increase in the fair value of the stock option award under ASC 718. As of December 31, 2010, Mr. Rosen held stock options exercisable for 22,656 shares of our common stock. A description of the terms of these options can be found under the heading Equity Compensation Arrangements above. None of the other non-employee directors listed in the table above were granted any option awards during 2010 nor did they hold any outstanding stock options at December 31, 2010.

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Limitation on Liability and Indemnification Matters

Our amended and restated certificate of incorporation and amended and restated bylaws, each to be effective upon the completion of this offering, will provide that we will indemnify our directors and officers, and may indemnify our employees and other agents, to the fullest extent permitted by the Delaware General Corporation Law. However, Delaware law prohibits our amended and restated certificate of incorporation from limiting the liability of our directors for the following:

- any breach of the director s duty of loyalty to us or to our stockholders;
- acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;
- unlawful payment of dividends or unlawful stock repurchases or redemptions; and
- any transaction from which the director derived an improper personal benefit.

If Delaware law is amended to authorize corporate action further eliminating or limiting the personal liability of a director, then the liability of our directors will be eliminated or limited to the fullest extent permitted by Delaware law, as so amended. Our amended and restated certificate of incorporation does not eliminate a director s duty of care and, in appropriate circumstances, equitable remedies, such as injunctive or other forms of non-monetary relief, remain available under Delaware law. This provision also does not affect a director s responsibilities under any other laws, such as the federal securities laws or other state or federal laws. Under our amended and restated bylaws, we will also be empowered to enter into indemnification agreements with our directors, officers, employees and other agents and to purchase insurance on behalf of any person whom we are required or permitted to indemnify.

In addition to the indemnification required in our amended and restated certificate of incorporation and amended and restated bylaws, we have entered into indemnification agreements with each of our current directors, officers and some employees before the completion of this offering. These agreements provide for the indemnification of such persons for all reasonable expenses and liabilities incurred in connection with any action or proceeding brought against them by reason of the fact that they are or were serving in such capacity. We believe that these bylaw provisions and indemnification agreements are necessary to attract and retain qualified persons as directors, officers and employees. Furthermore, we have obtained director and officer liability insurance to cover liabilities our directors and officers may incur in connection with their services to us and expect to increase the level upon completion of this offering.

The limitation of liability and indemnification provisions in our amended and restated certificate of incorporation and amended and restated bylaws may discourage stockholders from bringing a lawsuit against directors for breach of their fiduciary duties. They may also reduce the likelihood of derivative litigation against directors and officers, even though an action, if successful, might benefit us and our stockholders. A stockholder s investment may be harmed to the extent we pay the costs of settlement and damage awards against directors and officers pursuant to these indemnification provisions. Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers and controlling persons pursuant to the foregoing provisions, or otherwise, we have been advised that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act, and is, therefore, unenforceable. There is no pending litigation or proceeding naming any of our directors or officers as to which indemnification is being sought, nor are we aware of any pending or threatened litigation that may result in claims for indemnification by any director or officer.

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CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

The following is a summary of transactions since January 1, 2007 to which we have been a party in which the amount involved exceeded $120,000 and in which any of our executive officers, directors or holders of more than 5% of our capital stock, or any member of the immediate family of any of the foregoing persons, had or will have a direct or indirect material interest, other than compensation arrangements which are described under the section of this prospectus entitled Executive Compensation.

Private Placement Financings

Preferred Stock Financings

The following table summarizes purchases of our Series B preferred stock and Series C preferred stock since January 1, 2007 by holders of more than 5% of our capital stock and their affiliated entities.

Name	Series B Preferred Stock	Aggregate Purchase Price of Series B Preferred Stock	Series C Preferred Stock	Aggregate Purchase Price of Series C Preferred Stock
Funds affiliated with Three Arch Partners[1]	656,249	$ 10,500,000	1,752,337	$ 6,909,117
Funds affiliated with Skyline Venture Partners[2]	312,500	5,000,000	915,798	3,610,810
Funds affiliated with Alta Partners[3]	218,750	3,500,000	810,129	3,194,178
Funds affiliated with Kaiser Foundation Hospitals[4]	62,500	1,000,000	278,989	1,100,001
Approximate price per share	$16.00		$3.94	
Dates of purchase	2/4/08-2/15/08		11/23/09	

(1) Includes 16,741 shares of Series B preferred stock held by Three Arch Associates III, L.P., 7,088 shares of Series B preferred stock held by Three Arch Associates IV, L.P., 311,384 shares of Series B preferred stock held by Three Arch Partners III, L.P. and 321,036 shares of Series B preferred stock held by Three Arch Partners IV, L.P. Includes 44,702 shares of Series C preferred stock held by Three Arch Associates III, L.P., 18,928 shares of Series C preferred stock held by Three Arch Associates IV, L.P., 831,466 shares of Series C preferred stock held by Three Arch Partners III, L.P. and 857,241 shares of Series C preferred stock held by Three Arch Partners IV, L.P. Mark Wan, one of our directors, is managing partner of Three Arch Management III, L.L.C. and Three Arch Management IV, L.L.C., and in such capacities he may be deemed to beneficially own the shares owned by the funds affiliated with Three Arch Partners. Mr. Wan disclaims beneficial ownership of these shares.

(2) These shares are held by Skyline Venture Partners Qualified Purchaser Fund IV, L.P. Stephen Hoffman, one of our directors, is a Managing Director of Skyline Ventures and as such may be deemed to share voting and dispositive power with respect to all shares of stock held by Skyline Venture Partners Qualified Purchasers Fund IV, L.P. Dr. Hoffman disclaims beneficial ownership of these shares.

(3) These shares are held by ACP IV, L.P. Guy Nohra is one of our directors and is a director of ACMP IV, LLC, the general partner of ACP IV, L.P., and shares voting and investment power with respect to such shares. Mr. Nohra disclaims beneficial ownership of these shares.

(4) Includes 31,250 shares of Series B preferred stock held by Kaiser Foundation Hospitals and 31,250 shares of Series B preferred stock held by The Permanente Federation LLC Series G. Includes 139,494 shares of Series C preferred stock held by Kaiser Foundation Hospitals and 139,495 shares of Series C preferred stock held by The Permanente Federation LLC Series I.

2010 Bridge Loan Financing

On September 14, 2010, we sold convertible promissory notes, or the 2010 notes, and warrants, or the 2010 warrants, to purchase shares of our equity securities to certain of our existing investors for an aggregate purchase price of $8.0 million. Upon the election of the holders of a majority of the aggregate principal amount payable under the 2010 notes outstanding, we will sell an additional $4.0 million of 2010 notes and corresponding 2010 warrants. However, this $4.0 million call option will expire upon the closing of this offering.

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The 2010 notes accrue interest at a rate of 4.0% per annum. No payment of principal or interest has been paid on the 2010 notes since their issuance and the aggregate amount of principal outstanding is $8.0 million as of September 30, 2010. In connection with this offering, the outstanding principal and interest of the 2010 notes will automatically convert into common stock at a conversion price equal to eighty percent of the initial public offering price.

The 2010 warrants are not currently exercisable but will become exercisable by their terms for an aggregate of 507,245 shares of Series C preferred stock at an exercise price of approximately $3.94 immediately prior to this offering. The 2010 warrants terminate if they are not exercised prior to the closing of this offering. Each 2010 warrant contains a customary net issuance feature, which allows the warrant holder to pay the exercise price of the warrant by forfeiting a portion of the exercised warrant shares with a value equal to the aggregate exercise price. All of the holders of the 2010 warrants have elected to exercise the 2010 warrants on a net issuance basis contingent upon and effective immediately prior to the completion of this offering.

2010 Bridge Loan Financing Participation

The following table summarizes the participation in the 2010 bridge financing by holders of more than 5% of our capital stock and their affiliated entities:

Name	Aggregate Loan Amount	Aggregate Shares of Series C Preferred Stock Issuable Upon Exercise of 2010 Warrants Prior to this Offering[1]
Funds affiliated with Three Arch Partners[2]	$ 3,793,273	240,516
Funds affiliated with Skyline Venture Partners[3]	1,977,503	125,386
Funds affiliated with Alta Partners[4]	1,742,044	110,457
Funds affiliated with Kaiser Foundation Hospitals[5]	487,180	30,890

(1) The above table and footnotes do not give effect to the exercise, on a net issuance basis, of the 2010 warrants, which exercise is contingent upon and effective immediately prior to the completion of this offering.

(2) Includes a note held by Three Arch Associates III, L.P. with a principal amount of $96,767, a note held by Three Arch Associates IV, L.P. with a principal amount of $40,973, a note held by Three Arch Partners III, L.P. with a principal amount of $1,799,869 and a note held by Three Arch Partners IV, L.P. with a principal amount of $1,855,663. Includes a warrant held by Three Arch Associates III, L.P., exercisable into 6,135 shares of Series C preferred stock, a warrant held by Three Arch Associates IV, L.P., exercisable into 2,597 shares of Series C preferred stock, a warrant held by Three Arch Partners III, L.P., exercisable into 114,123 shares of Series C preferred stock and a warrant held by Three Arch Partners IV, L.P., exercisable into 117,661 shares of Series C preferred stock. Mark Wan, one of our directors, is managing partner of Three Arch Management II, L.L.C. and Three Arch Management IV, L.L.C., and in such capacities he may be deemed to beneficially own the securities owned by the funds affiliated with Three Arch Partners. Mr. Wan disclaims beneficial ownership of these securities.

(3) This note and warrant are held by Skyline Venture Partners Qualified Purchaser Fund IV, L.P. Stephen Hoffman, one of our directors, is a Managing Director of Skyline Ventures and as such may be deemed to share voting and dispositive power with respect to all securities held by Skyline Venture Partners Qualified Purchasers Fund IV, L.P. Dr. Hoffman disclaims beneficial ownership of these securities.

(4) This note and warrant were originally purchased by ACP IV, L.P. Guy Nohra is one of our directors and is a director of ACMP IV, LLC, the general partner of ACP IV, L.P., and shares voting and investment power with respect to such securities. Mr. Nohra disclaims beneficial ownership of these securities. In February 2011, ACP IV, L.P. agreed to transfer a portion of the note and the associated portion of the warrant held by ACP IV, L.P. as described under Bridge Note and Warrant Transfer below.

(5) Includes a note held by Kaiser Foundation Hospitals with a principal amount of $243,590 and a note held by The Permanente Federation LLC Series I with a principal amount of $243,590. Includes a warrant held by Kaiser Foundation Hospitals, exercisable into 15,445 shares of Series C preferred stock and a warrant held by The Permanente Federation LLC Series I, exercisable into 15,445 shares of Series C preferred stock.

Bridge Note and Warrant Transfer

In February 2011, ACP IV, L.P. agreed to transfer a 37% interest in the 2010 note and the associated portion of the 2010 warrant held by ACP IV, L.P. for nominal consideration to funds affiliated with

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Three Arch Partners, Skyline Venture Partners and Kaiser Foundation Hospitals pro rata among them based on each entity s affiliated funds current beneficial ownership of our outstanding capital stock, with such transfer to be effective immediately prior to the closing of this offering. As a result of the foregoing transfer, effective immediately prior to the closing of this offering:

- funds affiliated with Three Arch Partners will acquire 2010 warrants exercisable into an aggregate of 24,771 shares of Series C preferred stock and 2010 notes in an aggregate principal amount of $ $390,704.05;
- funds affiliated with Skyline Venture Partners will acquire a 2010 warrant exercisable into 12,914 shares of Series C preferred stock and a 2010 note in a principal amount of $203,675.95;
- funds affiliated with Kaiser Foundation Hospitals will acquire 2010 warrants exercisable into an aggregate of 3,180 shares of Series C preferred stock and 2010 notes in an aggregate principal amount of $50,176.10; and
- funds affiliated with ACP IV, L.P. will continue to hold a 2010 warrant exercisable into 69,588 shares of Series C preferred stock and a 2010 note in a principal amount of $1,097,487.42.

Investors Rights Agreement

We entered into an investors rights agreement with certain purchasers of our preferred stock and warrants to purchase our preferred stock, including our principal stockholders with which certain of our directors are affiliated. Pursuant to the investor s rights agreement, these holders are entitled to rights with respect to the registration of their shares under the Securities Act. For a description of these registration rights, please see the section entitled Description of Capital Stock Registration Rights.

Voting Agreement

We are party to a voting agreement under which holders of our preferred stock, including our principal stockholders with which certain of our directors are affiliated, have agreed to vote in a certain way on certain matters, including with respect to the election of directors. Pursuant to the voting agreement, holders of our preferred stock have agreed to vote such that one director be a designee of Three Arch Partners IV, L.P. or its affiliates, who is currently Mark Wan; one director be a designee of ACP IV, L.P. or its affiliates, who is currently Guy Nohra; and one director be a designee of Skyline Venture Partners Qualified Purchaser Fund IV, L.P. or its affiliates, who is currently Stephen Hoffman. Upon the closing of this offering, the voting agreement will terminate in its entirety and none of our stockholders will have any special rights regarding the election or designation of members of our board of directors.

Participation in this Offering

Entities affiliated with Three Arch Partners, Skyline Venture Partners, Alta Partners and Kaiser Foundation Hospitals, each of which is a current stockholder, have agreed to purchase an aggregate of 4,800,000 shares of our common stock in this offering.

Other Transactions

We have entered into various employment related agreements and compensatory arrangements with our directors and executive officers that, among other things, provide for compensatory and certain severance and change in control benefits. For a description of these agreements and arrangements, see the sections entitled Executive Compensation Employment Agreements and Arrangements and Executive Compensation Non-Employee Director Compensation.

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We have entered into indemnification agreements with each of our current directors and officers. See Executive Compensation Limitation on Liability and Indemnification Matters.

Policies and Procedures for Related Party Transactions

In January 2011, our board of directors adopted an audit committee charter that will be in effect prior to the closing of this offering that provides that the audit committee will review and approve all related party transactions. Accordingly, following this offering, all future related party transactions will be reviewed and approved by our audit committee. This review will cover any material transaction, arrangement or relationship, or any series of similar transactions, arrangements or relationships, in which we were or are to be a participant, and a related party had or will have a direct or indirect material interest, including, purchases of goods or services by or from the related party or entities in which the related party has a material interest, indebtedness, guarantees of indebtedness and employment by us of a related party. All of the transactions described above were entered into prior to the adoption of this audit committee charter and were approved by our board of directors.

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PRINCIPAL STOCKHOLDERS

The following table sets forth information known to us about the beneficial ownership of our common stock at December 31, 2010, as adjusted to reflect the sale of the shares of common stock in this offering, by:

- each named executive officer;
- each of our directors;
- each person known to us to be the beneficial owner of more than 5% of our common stock; and
- all of our executive officers and directors as a group.

Unless otherwise noted below, the address of each beneficial owner listed on the table is c/o AcelRx Pharmaceuticals, Inc., 575 Chesapeake Drive, Redwood City, CA 94063. We have determined beneficial ownership in accordance with the rules of the SEC. Except as indicated by the footnotes below, we believe, based on the information furnished to us, that the persons and entities named in the tables below have sole voting and investment power with respect to all shares of common stock that they beneficially own, subject to applicable community property laws.

In computing the number of shares of common stock beneficially owned by a person and the percentage ownership of that person, we deemed outstanding shares of common stock subject to options held by that person that are currently exercisable or exercisable within 60 days of December 31, 2010. We did not deem these shares outstanding, however, for the purpose of computing the percentage ownership of any other person.

Entities affiliated with Three Arch Partners, Skyline Venture Partners, Alta Partners and Kaiser Foundation Hospitals, each of which is a current stockholder and which we refer to collectively as the Current Stockholders, have agreed to purchase an aggregate of 4,800,000 shares of our common stock in this offering at the price offered to the public. The information set forth in the table below assumes the purchase of these shares, or the Allocated Shares, in this offering by the Current Stockholders, with each Current Stockholder purchasing the respective number of Allocated Shares indicated in the footnotes to the table below.

We have based our calculation of beneficial ownership prior to the offering on 9,230,066 shares of common stock outstanding on December 31, 2010, which assumes the automatic conversion of all outstanding shares of our convertible preferred stock into an aggregate of 8,555,713 shares of common stock. We have based our calculation of beneficial ownership after the offering on 19,371,750 shares of our common stock outstanding immediately after the completion of this offering, which gives effect to the issuance of 8,000,000 shares of common stock in this offering (including the 4,800,000 Allocated Shares to be purchased by the Current Stockholders as described in the preceding paragraph) and the automatic conversion of all outstanding shares of our convertible preferred stock into an aggregate of 8,555,713 shares of common stock and further assumes:

- the exercise, on a net issuance basis, of warrants outstanding as of December 31, 2010 that we issued in connection with a bridge loan financing in September 2010, or the 2010 warrants, which will be exercisable for shares of our Series C convertible preferred stock immediately prior to this offering, and the concomitant conversion of the shares of Series C convertible preferred stock acquired upon exercise into 107,246 shares of common stock upon completion of this offering, based on the initial public offering price of $5.00 per share;

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the automatic conversion of the principal and accrued interest outstanding under our $8.0 million in aggregate principal amount of convertible promissory notes, or the 2010 notes, into 2,034,438 shares of common stock immediately prior to the closing of this offering at a conversion price equal to 80% of the initial public offering price, based on the initial public offering price of $5.00 per share and assuming the conversion occurs on February 16, 2011; and

the transfer of a portion of the 2010 note and the associated portion of the 2010 warrant held by ACP IV, L.P. to funds affiliated with Three Arch Partners, Skyline Venture Partners and Kaiser Foundation Hospitals immediately prior to the closing of this offering as described under the section of this prospectus entitled Certain Relationship and Related Party Transactions 2010 Bridge Loan Financing Bridge Note and Warrant Transfer .

The actual numbers of shares issued upon conversion of the 2010 notes is based on the assumptions set forth above and may differ from the numbers appearing in this discussion and the following table and footnotes. See Prospectus Summary The Offering. Ownership information assumes no exercise of the underwriters over-allotment option.

	Number of Shares Beneficially Owned		Percentage of Common Stock Beneficially Owned Prior	
Name and Address of Beneficial Owner	Prior to Offering	After Offering	to Offering	After Offering
5% Stockholders:				
Funds affiliated with Three Arch Partners[1]	3,965,752	7,665,425	42.97%	39.57%
Funds affiliated with Skyline Venture Partners[2]	2,067,366	3,887,235	22.40%	20.07%
Funds affiliated with Alta Partners[3]	1,821,097	2,794,907	19.73%	14.43%
Funds affiliated with Kaiser Foundation Hospitals[4]	509,301	957,633	5.52%	4.94%
Named Executive Officers and Directors:				
Richard King[5]	28,538	28,538	0.31%	0.15%
Jim Welch				
Pamela Palmer[6]	460,415	460,415	4.88%	2.35%
Anil Dasu[7]	58,957	58,957	0.63%	0.30%
Thomas Schreck[8]	509,941	509,941	5.41%	2.61%
Lawrence G. Hamel[9]	92,967	92,967	1.00%	0.48%
Mark Wan[10]	3,965,752	7,665,425	42.97%	39.57%
Stephen J. Hoffman[11]	2,067,366	3,887,235	22.40%	20.07%
Guy Nohra[12]	1,821,097	2,794,907	19.73%	14.43%
Howard Rosen[13]	24,270	24,270	0.26%	0.13%
All executive officers and directors as a group (10 persons)[14]	9,029,303	15,522,655	97.58%	80.08%

(1) Includes 101,165 shares held by Three Arch Associates III, L.P., 42,835 shares held by Three Arch Associates IV, L.P., 1,881,711 shares held by Three Arch Partners III, L.P. and 1,940,041 shares held by Three Arch Partners IV, L.P. In addition, the number of shares beneficially owned after the offering includes (a) 27,142 shares of common stock issuable upon conversion of 2010 notes held by Three Arch Associates III, L.P., 11,492 shares of common stock issuable upon conversion of 2010 notes held by Three Arch Associates IV, L.P., 504,860 shares of common stock issuable upon conversion of 2010 notes held by Three Arch Partners III, L.P. and 520,510 shares of common stock issuable upon conversion of 2010 notes held by Three Arch Partners IV, L.P., (b) 1,430 shares of common stock issuable upon the net exercise of 2010 warrants held by Three Arch Associates III, L.P. and the concomitant conversion of the underlying Series C convertible preferred stock into common stock, 605 shares of common stock issuable upon the net exercise of 2010 warrants held by Three Arch Associates IV, L.P. and the concomitant conversion of the underlying Series C convertible preferred stock into common stock, 26,615 shares of common stock issuable upon the net exercise of 2010 warrants held by Three Arch Partners III, L.P. and the concomitant conversion of the underlying Series C convertible preferred stock into common stock, and 27,440 shares of common stock issuable upon the net exercise of 2010 warrants held by held by Three Arch Partners IV, L.P. and the concomitant conversion of the underlying Series C convertible preferred stock into common stock, and (c) 2,579,579 Allocated Shares to be purchased by funds affiliated with

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Three Arch Partners in this offering. The voting and dispositive decisions with respect to the shares held by Three Arch Associates III, L.P. and Three Arch Partners III, L.P., are made by the following Managing Members of its general partner Three Arch Management III, L.L.C.: Mark Wan and Wilfred Jaeger, each of whom disclaims beneficial ownership of such shares. The voting and dispositive decisions with respect to the shares held by Three Arch Partners IV, L.P. and Three Arch Associates IV, L.P. are made by the following Managing Members of its general partner, Three Arch Management IV, L.L.C.: Mark Wan and Wilfred Jaeger, each of whom disclaims beneficial ownership of such shares. The address for the funds affiliated with Three Arch Partners is 3200 Alpine Road, Portola Valley, CA 94028.

(2) The 2,067,366 shares are held by Skyline Venture Partners Qualified Purchaser Fund IV, L.P. In addition, the number of shares beneficially owned after the offering includes (a) 554,685 shares of common stock issuable upon conversion of 2010 notes held by Skyline Venture Partners Qualified Purchaser Fund IV, L.P., (b) 29,241 shares of common stock issuable upon the net exercise of 2010 warrants held by Skyline Venture Partners Qualified Purchaser Fund IV, L.P. and the concomitant conversion of the underlying Series C convertible preferred stock into common stock, and (c) 1,235,943 Allocated Shares to be purchased by funds affiliated with Skyline Venture Partners in this offering. John G. Freund and Yasunori Kaneko are the Managing Members of Skyline Venture Management IV, LLC, which is the general partner of Skyline Venture Partners Qualified Purchaser Fund IV, L.P., and as such Drs. Freund and Kaneko may be deemed to share voting and dispositive power with respect to all shares of common stock held by Skyline Venture Partners Qualified Purchaser Fund IV, L.P. In addition, Dr. Hoffman, one of our directors, is a Managing Director of Skyline Ventures and as such may be deemed to share voting and dispositive power with respect to all shares of common stock held by Skyline Venture Partners Qualified Purchasers Fund IV, L.P. Each of Drs. Freund, Kaneko and Hoffman disclaims beneficial ownership of such shares. The address for Skyline Ventures is 525 University Avenue, Ste. 520, Palo Alto, CA 94301.

(3) The 1,821,097 shares are beneficially owned by ACP IV, L.P., or ACPIV. In addition, the number of shares beneficially owned after the offering includes (a) 279,097 shares of common stock issuable upon conversion of a 2010 note held by ACPIV, (b) 14,713 shares of common stock issuable upon the net exercise of a 2010 warrant held by ACPIV and the concomitant conversion of the underlying Series C convertible preferred stock into common stock, and (c) 680,000 Allocated Shares to be purchased by funds affiliated with ACPIV in this offering. ACMP IV, LLC, or ACMPIV, is the general partner of ACPIV. Jean Deleage, Dan Janney, David Mack, and Guy Nohra are directors of ACMPIV and they exercise shared voting and investment power with respect to the securities held by ACPIV. Mr. Deleage, Mr. Janney, Mr. Mack, and Mr. Nohra disclaim beneficial ownership of such shares. The address for ACPIV is One Embarcadero Center 37th Floor, San Francisco, CA 94111.

(4) Includes 254,650 shares held by Kaiser Foundation Hospitals, or KFH, 115,156 shares held by The Permanente Federation LLC-Series G, or PFG, and 139,495 shares held by The Permanente Federation LLC-Series I, or PFI. In addition, the number of shares beneficially owned after the offering includes (a) 68,326 shares of common stock issuable upon conversion of 2010 notes held by KFH and 68,326 shares of common stock issuable upon conversion of 2010 notes held by PFI and (b) 3,601 shares of common stock issuable upon the net exercise of 2010 warrants held by KFH and the concomitant conversion of the underlying Series C convertible preferred stock into common stock, and 3,601 shares of common stock issuable upon the net exercise of 2010 warrants held by PFI and the concomitant conversion of the underlying Series C convertible preferred stock into common stock, and (c) 304,478 Allocated Shares to be purchased by funds affiliated with Kaiser Foundation Hospitals in this offering. The voting and dispositive decisions with respect to the shares held by KFH, PFI and PFG are made by Jordan M. Kramer, Robert Ward, Dave Schulte, Chris M. Grant and other employees of KFH, PFI and PFG, each of whom disclaims beneficial ownership of such shares. The address for the funds affiliated with Kaiser Foundation Hospitals is One Kaiser Plaza, 22nd Floor, Oakland, CA 94612.

(5) Represents 28,538 shares issuable pursuant to stock options exercisable within 60 days of December 31, 2010.

(6) Includes 210,415 shares issuable pursuant to stock options exercisable within 60 days of December 31, 2010.

(7) Represents 58,957 shares issuable pursuant to stock options exercisable within 60 days of December 31, 2010.

(8) Includes 194,008 shares issuable pursuant to stock options exercisable within 60 days of December 31, 2010, and 16,482 shares held in trust for Mr. Schreck s children. Mr. Schreck disclaims beneficial ownership of the shares held in trust for Mr. Schreck s children.

(9) Represents 92,967 shares issuable pursuant to stock options exercisable within 60 days of December 31, 2010.

(10) Mr. Wan is a managing partner of Three Arch Management III, L.L.C. and Three Arch Management IV, L.L.C., and in such capacities he may be deemed to beneficially own the shares owned by the funds affiliated with Three Arch Partners. Mr. Wan disclaims beneficial ownership of these shares. The address of Mr. Wan is c/o Three Arch Partners, 3200 Alpine Road, Portola Valley, CA 94028.

(11) Dr. Hoffman, one of our directors, is a Managing Director of Skyline Ventures and as such may be deemed to share voting and dispositive power with respect to all shares of common stock held by Skyline Venture Partners Qualified Purchasers Fund IV, L.P. Dr. Hoffman disclaims beneficial ownership of such shares. The address for Dr. Hoffman is c/o Skyline Ventures, 525 University Avenue, Suite 520, Palo Alto, CA 94301.

(12) Mr. Nohra is a director of ACMPIV, and in such capacity he may be deemed to beneficially own the shares owned by ACPIV. Mr. Nohra disclaims beneficial ownership of these shares. The address for Mr. Nohra is c/o Alta Partners, One Embarcadero Center 37th Floor, San Francisco, CA 94111.

(13) Represents 24,270 shares issuable pursuant to stock options exercisable within 60 days of December 31, 2010.

(14) Includes 609,155 shares issuable pursuant to stock options exercisable within 60 days of December 31, 2010.

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DESCRIPTION OF CAPITAL STOCK

Upon the completion of this offering, our amended and restated certificate of incorporation will authorize us to issue up to 100,000,000 shares of common stock, $0.001 par value per share, and 10,000,000 shares of preferred stock, $0.001 par value per share. As of September 30, 2010, after giving effect to the adjustments described below, there were outstanding:

- 11,371,750 shares of our common stock held by approximately 35 stockholders;
- 231,678 shares of common stock issuable upon the exercise of outstanding warrants that are expected to remain outstanding upon completion of this offering; and
- 1,892,860 shares of our common stock issuable upon exercise of outstanding stock options.

The number of shares of our common stock outstanding as of September 30, 2010 as shown above assumes:

- the automatic conversion of all outstanding shares of our convertible preferred stock into an aggregate of 8,555,713 shares of common stock upon completion of this offering;
- the exercise, on a net issuance basis, of warrants outstanding as of September 30, 2010, or the 2010 warrants, which will be exercisable for shares of our Series C convertible preferred stock immediately prior to this offering, and the concomitant conversion of the shares of Series C convertible preferred stock into 107,246 shares of common stock upon completion of this offering, based on the initial public offering price of $5.00 per share; and
- the automatic conversion of the principal and accrued interest outstanding under our $8.0 million in aggregate principal amount of convertible promissory notes into 2,034,438 shares of common stock immediately prior to the closing of this offering at a conversion price equal to 80% of the initial public offering price, based on the initial public offering price of $5.00 per share, and assuming the conversion occurs on February 16, 2011.

The following description 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 that will be in effect upon completion of this offering. Copies of these documents will be filed with the SEC as exhibits to our registration statement, of which this prospectus forms a part. The descriptions of the common stock and preferred stock reflect changes to our capital structure that will occur immediately upon completion of this offering.

Common Stock

Voting Rights

Each holder of our common stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, including the election of directors. Our stockholders do not have cumulative voting rights in the election of directors. Accordingly, holders of a majority of the voting shares are able to elect all of the directors.

Dividends

Subject to preferences that may be applicable to any then outstanding preferred stock, holders of our common stock are entitled to receive dividends, if any, as may be declared from time to time by our board of directors out of legally available funds.

Liquidation

In the event of our liquidation, dissolution or winding up, holders of our common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all

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of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then outstanding shares of preferred stock.

Rights and Preferences

Holders of our common stock have no preemptive, conversion, subscription or other rights, and there are no redemption or sinking fund provisions applicable to our common stock. The rights, preferences and privileges of the holders of our common stock are subject to and may be adversely affected by the rights of the holders of shares of any series of our preferred stock that we may designate in the future.

Fully Paid and Nonassessable

All of our outstanding shares of common stock are, and the shares of common stock to be issued pursuant to this offering will be, fully paid and nonassessable.

Preferred Stock

Upon the completion of this offering, our board of directors will have the authority, without further action by our stockholders, to issue up to 10,000,000 shares of preferred stock in one or more series and to fix the number, rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences, and sinking fund terms, and the number of shares constituting any series or the designation of such series, any or all of which may be greater than the rights of common stock. The issuance of our preferred stock could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing a change of control or other corporate action. Upon completion of this offering, no shares of preferred stock will be outstanding and we have no present plan to issue any shares of preferred stock.

2010 Notes

We issued convertible promissory notes in connection with our bridge loan financing in September 2010, or the 2010 notes. The 2010 notes accrue interest at a rate of 4.0% per annum. No payment of principal or interest has been paid on the 2010 notes since their issuance, and the aggregate amount of principal outstanding was $8.0 million as of September 30, 2010. In connection with this offering, the outstanding principal and interest of 2010 notes will automatically convert into common stock at a conversion price equal to 80% of the initial public offering price.

Warrants

As of September 30, 2010, 2,500 shares of our Series A preferred stock were issuable upon exercise of an outstanding warrant to purchase Series A preferred stock with an exercise price of $10.00 per share. This warrant was issued in connection with the execution of an equipment financing agreement we entered into with a lender. This warrant is immediately exercisable and will expire on March 15, 2017. This warrant has a net exercise provision under which the holder may, in lieu of payment of the exercise price in cash, surrender the warrant and receive a net amount of shares based on the fair market value of our common stock at the time of exercise of the warrant after deduction of the aggregate exercise price. The warrant contains provisions for the adjustment of the exercise price and the number of shares issuable upon the exercise of the warrant in the event of dilutive issuances affecting the Series A preferred stock and stock dividends, stock splits, reorganizations and reclassifications and consolidations.

As of September 30, 2010, 228,264 shares of our Series C preferred stock were issuable upon exercise of an outstanding warrant to purchase Series C preferred stock with an exercise price of approximately $3.94 per share. This warrant was issued in connection with the execution of a loan and security agreement we entered into with a lender. This warrant is immediately exercisable and will expire on

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September 16, 2018. This warrant has a net exercise provision under which the holder may, in lieu of payment of the exercise price in cash, surrender the warrant and receive a net amount of shares based on the fair market value of our common stock at the time of exercise of the warrant after deduction of the aggregate exercise price. The warrant contains provisions for the adjustment of the exercise price and the number of shares issuable upon the exercise of the warrant in the event of diluting issuances affecting the Series C preferred stock and stock dividends, stock splits, reorganizations and reclassifications and consolidations.

In connection with the automatic conversion of all of our outstanding shares of preferred stock into common stock upon the closing of this offering:

- the warrant to purchase 2,500 shares of Series A preferred stock will automatically become exercisable for 3,414 shares of common stock; and

- the warrant to purchase 228,264 shares of Series C preferred stock will become exercisable for 228,264 shares of common stock.

We issued the 2010 warrants in connection with our bridge loan financing in September 2010. The 2010 warrants are not currently exercisable but will become exercisable by their terms for an aggregate of 507,245 shares of our Series C preferred stock at an exercise price of approximately $3.94 per share immediately prior to the closing of this offering. The 2010 warrants terminate if they are not exercised prior to the closing of this offering. Each 2010 warrant contains a customary net issuance feature, which allows the warrant holder to pay the exercise price of the warrant by forfeiting a portion of the exercised warrant shares with a value equal to the aggregate exercise price. All of the holders of the 2010 warrants have elected to exercise the 2010 warrants on a net issuance basis contingent upon and effective immediately prior to the completion of this offering, which, if effected, would result in the issuance of 107,246 shares of common stock upon completion of this offering, based on the initial public offering price of $5.00 per share.

Registration Rights

Immediately following the closing of this offering, the holders of an aggregate of 8,894,637 shares of our common stock issued or issuable upon conversion of our preferred stock and the warrants described above (including 107,246 shares of our common stock issued upon the expected net exercise of the 2010 warrants and the concomitant conversion of the shares of Series C convertible preferred stock acquired upon exercise of the 2010 warrants into common stock upon completion of this offering, based on the initial public price of $5.00 per share), which shares we refer to as registrable securities, will have the right to demand that we file a registration statement or request that their shares be covered by a registration statement that we are otherwise filing pursuant to an investors rights agreement we entered into with certain of our stockholders. In the event that we propose to register any of our securities under the Securities Act, either for our own account or for the account of other security holders, these holders are entitled to notice of our registration and are entitled to certain piggyback registration rights allowing the holders to include their registrable securities in such registration, subject to certain marketing and other limitations. Pursuant to the investors rights agreement, the holders of registrable securities have the right to require us to file a registration statement under the Securities Act in order to register the resale of their shares of registrable securities, provided that the registration meets certain thresholds. We may, in certain circumstances, defer such registrations. In an underwritten offering, the managing underwriter has the right, subject to specified conditions, to limit the number of registrable securities such holders may include. The holders of registrable securities have waived their rights to include any of their shares in this offering prior to the completion of this offering.

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Anti-Takeover Provisions

Certificate of Incorporation and Bylaws to be in Effect Upon the Completion of this Offering

Our amended and restated certificate of incorporation and amended and restated bylaws, each to become effective immediately prior to the completion of this offering, will include a number of provisions that may deter or impede hostile takeovers or changes of control or management. These provisions include:

Issuance of undesignated preferred stock. After the filing of our amended and restated certificate of incorporation, our board of directors will have the authority, without further action by the stockholders, to issue up to shares of undesignated preferred stock with rights and preferences, including voting rights, designated from time to time by the board of directors. The existence of authorized but unissued shares of preferred stock enables our board of directors to make it more difficult or to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise.

Classified board. Our amended and restated certificate of incorporation provides for a classified board of directors consisting of three classes of directors, with staggered three-year terms. Only one class of directors will be elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms. This provision may have the effect of delaying a change in control of the board.

Board of directors vacancies. Our amended and restated certificate of incorporation and amended and restated bylaws authorize only our board of directors to fill vacant directorships. In addition, the number of directors constituting our board of directors may be set only by resolution adopted by a majority vote of our entire board of directors. These provisions prevent a stockholder from increasing the size of our board of directors and gaining control of our board of directors by filling the resulting vacancies with its own nominees.

Stockholder action; special meetings of stockholders. Our amended and restated certificate of incorporation provides that our stockholders may not take action by written consent, but may only take action at annual or special meetings of our stockholders. Stockholders will not be permitted to cumulate their votes for the election of directors. Our amended and restated bylaws further provide that special meetings of our stockholders may be called only by a majority of our board of directors, the chairman of our board of directors, or our chief executive officer.

Advance notice requirements for stockholder proposals and director nominations. Our amended and restated bylaws provide advance notice procedures for stockholders seeking to bring business before our annual meeting of stockholders, or to nominate candidates for election as directors at our annual meeting of stockholders. Our bylaws also specify certain requirements as to the form and content of a stockholder s notice. These provisions may make it more difficult for our stockholders to bring matters before our annual meeting of stockholders or to nominate directors at our annual meeting of stockholders.

These provisions are intended to enhance the likelihood of continued stability in the composition of our board of directors and its policies and to discourage certain types of transactions that may involve an actual or threatened acquisition of us. These provisions are designed to reduce our vulnerability to an unsolicited acquisition proposal. The provisions also are intended to discourage certain tactics that may be used in proxy fights. However, these provisions could have the effect of discouraging others from making tender offers for our shares and, as a consequence, they may also reduce fluctuations in the market price of our shares that could result from actual or rumored takeover attempts.

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Section 203 of the Delaware General Corporation Law

We are subject to Section 203 of the Delaware General Corporation Law, which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, with the following exceptions:

- before such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested holder;
- upon completion of the transaction that 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 began, excluding for purposes of determining the voting stock outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned (a) by persons who are directors and also officers and (b) pursuant to 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 after such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock that is not owned by the interested stockholder.

In general, Section 203 defines business combination to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;