Kindred Biosciences, Inc.
Form S-1
March 18, 2014

As filed with the Securities and Exchange Commission on March 18, 2014 Registration No. 333-_____
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

KINDRED BIOSCIENCES, INC.
(Exact name of registrant as specified in its charter)

Delaware	2834	46-1160142
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification No.)

1499 Bayshore Highway, Suite 226
Burlingame, California 94010
(650) 701-7901
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

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Approximate date of commencement of proposed sale to the public: As soon as practicable after this Registration Statement is declared effective.
If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. o
If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

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

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

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

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

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities To Be Registered	Proposed Maximum Aggregate Offering Price [1]	Amount of Registration Fee [2]
Common Stock, $0.0001 par value per share	$86,250,000	$11,109.00

(1) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended. Includes the offering price of shares that the underwriters have the option to purchase to cover over-allotments, if any.

(2) Calculated pursuant to Rule 457(o) based on an estimate of the proposed maximum aggregate offering price.

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

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

SUBJECT TO COMPLETION DATED MARCH 18, 2014

PRELIMINARY PROSPECTUS

Shares

Kindred Biosciences, Inc.

Common Stock

We are offering shares of our common stock.

Our common stock is listed on the NASDAQ Capital Market under the symbol "KIN." On March 14, 2014, the last reported sale price of our common stock on the NASDAQ Capital Market was $24.24.

Investing in our common stock involves a high degree of risk. See "Risk Factors" beginning on page 10.

We are an "emerging growth company" as defined by the Jumpstart Our Business Startups Act of 2012 and, as such, we have elected to comply with certain reduced public company reporting requirements for this prospectus and future filings.

	Per Share	Total
Public offering price	$	$
Underwriting discounts and commissions[(1)]	$	$
Proceeds, before expenses to us	$	$

(1) We refer you to "Underwriting" beginning on page 102 of this prospectus for additional information regarding underwriter compensation.

We have granted the underwriters a 30-day option to purchase a total of up to additional shares of common stock.

The underwriters expect to deliver shares of common stock to purchasers on , 2014.

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

Leerink Partners BMO Capital Markets Guggenheim Securities

The date of this prospectus is , 2014.

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We have not, and the underwriters have not, authorized anyone to provide any information or to make any representations other than those contained in this prospectus or in any free writing prospectus prepared by or on behalf of us or to which we have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus is an offer to sell only the shares offered hereby, but only under the circumstances and in the jurisdictions where it is lawful to do so. The information contained in this prospectus or in any applicable free writing prospectus is current only as of its date, regardless of its time of delivery or any sale of shares of our common stock. Our business, financial condition, results of operations and prospects may have changed since that date.

For investors outside the United States: We have not, and the underwriters have not, 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. Persons outside the United States who come into possession of this prospectus must inform themselves, and observe any restrictions relating to, the offering of the shares of common stock and the distribution of this prospectus outside the United States.

Kindred Biosciences, Kindred Bio, CereKin, AtoKin, SentiKin and "Best Medicines for Our Best Friends" are six of our trademarks that are used in this prospectus. This prospectus also includes trademarks, tradenames and service marks that are the property of other organizations. Solely for convenience, trademarks and tradenames referred to in this prospectus appear without the ® and ™ symbols, but those references are not intended to indicate that we will not assert, to the fullest extent under applicable law, our rights or that the applicable owner will not assert its rights, to these trademarks and tradenames.

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PROSPECTUS SUMMARY

This summary highlights information contained elsewhere in this prospectus. This summary does not contain all of the information you should consider before investing in our common stock. You should read this entire prospectus carefully, especially the section in this prospectus entitled "Risk Factors" beginning on page 10 and our financial statements and the related notes thereto appearing at the end of this prospectus, before making an investment decision. As used in this prospectus, references to "we," "us," "our," "our company" and "Kindred" refer to Kindred Biosciences, Inc. References to "product candidates," "drugs," and "compounds" refer to both small molecules and biologics.

Overview

Our Company

We are a development stage biopharmaceutical company focused on saving and improving the lives of pets. Our mission is to bring to our pets the same kinds of safe and effective medicines that our human family members enjoy. Our core strategy is to identify compounds and targets that have already demonstrated safety and efficacy in humans and to develop therapeutics based on these validated compounds and targets for pets, primarily dogs, cats and horses. We believe this approach will lead to shorter development times and higher approval rates than pursuing new, non-validated compounds and targets. We have three product candidates that are in, or will shortly enter, pivotal field efficacy trials, or pivotal trials, and expect approval of one or more of these product candidates in 2015. In addition, we have seven other product candidates, including several biologics, in various stages of development. We believe there are significant unmet medical needs for pets, and that the pet therapeutics segment of the animal health industry is likely to grow substantially as new therapeutics are identified, developed and marketed specifically for pets.

Our lead product candidates are CereKin for the treatment of osteoarthritis pain and inflammation in dogs, AtoKin for the treatment of atopic dermatitis in dogs, and SentiKin for the treatment of post-operative pain in dogs. All of these product candidates, if approved, would be first-in-class drugs in the pet therapeutic market.

In August 2013, we initiated the pivotal trial for CereKin. In February 2014, we initiated the pivotal trial for AtoKin, and we expect to initiate the pivotal trial for SentiKin in March 2014. Assuming positive results from these trials, we intend to submit New Animal Drug Applications, or NADAs, for marketing approval of CereKin, AtoKin and SentiKin in the United States starting in 2014, and anticipate potential marketing approvals and product launches in the second half of 2015. If approved in the United States, we may make similar regulatory filings for these products with the European Medicines Agency, or EMA, for marketing approval in the European Union, or EU.

We are currently developing product candidates for ten additional indications, with the potential to launch two or more products annually for several years starting in the second half of 2015. We plan to commercialize our products in the United States through a direct sales force complemented by selected distributor relationships, and in the EU through distributors and other third parties. Because we seek to identify product candidates that are not protected by third-party patents, we typically do not need to obtain licenses or make any upfront, milestone or royalty payments in connection with our product candidates.

Relative to human drug development, the development of pet therapeutics is generally faster, more predictable and less expensive, since it requires fewer clinical studies involving fewer subjects and can be conducted directly in the target species. For example, studies that are typically required for approval of human drugs such as QTc studies, which detect cardiac irregularities, elderly patient studies, renal impairment studies, hepatic impairment studies or costly, long-term genotoxicity studies are not required for pet therapeutics. Based on our progress since inception in September 2012, we believe we can develop pet therapeutics from the Investigational New Animal Drug, or INAD, filing with the FDA to marketing approval in three to five years at a cost of approximately $3 million to $5 million per product candidate. The lower cost associated with the development of pet therapeutics permits us to pursue multiple product candidates simultaneously and avoid the binary outcome associated with some human biotechnology companies' development of a single lead therapy. The active ingredients in many of our small molecule product candidates also have established chemistry, manufacturing and controls, or CMC, which can be important gating factors in the regulatory approval process. As a result, we usually do not need to invest further in active pharmaceutical ingredient, or API, process development to comply with good manufacturing practices, or GMP, standards for our small molecule product candidates.

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Product Pipeline

Our current product pipeline consists of small molecules and biologics in various stages of development for a range of indications in dogs, cats and horses. Small molecules are generally chemical compounds administered orally and biologics are generally proteins and vaccines administered by injection. The USDA's Center for Veterinary Biologics and the FDA's Center for Veterinary Medicine have a memorandum of understanding under which animal products are to be regulated by the USDA as biologics, if they are intended for use to diagnose, cure, mitigate, treat, or prevent disease in animals and they work primarily through an immune process, or by the FDA as drugs, if they are intended for use in the diagnosis, cure, mitigation, treatment, or prevention of animal disease if the primary mechanism of action is not immunological or is undefined. Although we believe that most of our current animal biologics will be regulated by the USDA based on their mechanisms of action, it is possible that the agencies may determine that one or more of our animal biologics will be regulated by the FDA instead of the USDA.

The following table illustrates ten product candidates that we are developing for 13 indications. References in the table to "PLA" mean Application for United States Veterinary Biological Product License with the USDA, also called a Product License Agreement.

In addition to our product candidates currently in development, we have identified over 30 potential small molecule and biologic therapeutics that are in the pre-INAD stage, including molecules targeting cancer metabolism, immune checkpoint inhibitors, and feline erythropoietin. We utilize a rigorous screening and review process to identify compounds and targets that have demonstrated safety and efficacy in humans and would address unmet medical needs in veterinary medicine if formulated for use in pets.

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Pet Therapeutics Market

U.S. consumers spent an estimated $55.5 billion on their pets in 2013, according to the American Pet Products Association, or APPA, an increase of 44% from 2006. The veterinary care segment has been among the fastest growing segments of the overall U.S. pet market. This segment accounted for an estimated $14.2 billion in 2013, an increase of 54% from 2006. In 2011, approximately $4.3 billion was spent on parasiticides and vaccines and approximately $2.4 billion was spent on pet therapeutics, our target segment. We believe several factors, including the increased longevity of pets and willingness of pet owners to treat their pets with medications, will contribute to continued growth in the spending on pet therapeutics.

Despite the growing market for pet products, generally, there are relatively few therapeutic treatment options approved for use in pets as compared to humans. As a result, veterinarians often resort to prescribing products approved for use in humans but not approved, formulated or even formally studied in pets. Veterinarians must then rely upon trial and error or untested rules of thumb to assess the proper dosage needed for the human product to be effective in the particular species without undue risk of side effects. The veterinarian also must find a way to administer the human product in animals and determine the amount actually dosed, which are important considerations in treating pets with human drugs. We believe that therapeutics specifically developed for pets can extend and improve the quality of the lives of pets, help veterinarians achieve improved medical outcomes and make the process of administering therapeutics to pets much more convenient.

Although there are many similarities between the businesses of developing and commercializing therapeutics for pets and for humans, there also are a number of important differences, including:

- Faster, less expensive and more predictable development. The development of pet therapeutics requires fewer clinical studies in fewer subject animals than human therapeutics and, unlike human drug development, can be conducted directly in the target animals. We believe our strategy of selecting compounds and targets with demonstrated efficacy and safety in humans enhances the predictability of results and probability of success of our pivotal trials relative to compounds and targets that have not been previously validated.
- Role and incentives for veterinary practices. In the United States, veterinarians generally serve the dual role of doctor and pharmacist, and pet owners typically purchase medicines directly from their veterinarians. Therapeutics specifically developed for pets enable veterinarians to provide potentially superior treatment options, while also increasing revenue from the sale of these therapeutics.
- Primarily private-pay nature of veterinary market. Pet owners in the United States generally pay for pet therapeutics out-of-pocket, and less than 5% of pet owners currently purchase pet insurance. As a result, pet owners must make decisions regarding available treatment options primarily on the advice of their veterinarians, rather than on the treatment options' eligibility for reimbursement by insurance companies or government payers. We believe this results in less pricing pressure compared to human healthcare, although the limited adoption of insurance may also reduce pet owners' ability to pay for therapeutics recommended by their veterinarians.
- Less generic competition and strong brand loyalty. There is less generic competition in the pet therapeutics industry than in the human therapeutics industry. Approximately 14% of veterinary drugs face generic competition, and the percentage of generic prescriptions in the veterinary space is only 7% as compared to approximately 81% for human drugs. We believe that stronger brand loyalty and lack of mandatory generic drug substitution, as is the case for human pharmaceuticals, partially explains the low penetration of generics in veterinary medicine.

Lead Product Candidates

CereKin

CereKin is an oral, chewable, beef-flavored formulation of diacerein, an interleukin-1 beta inhibitor that we are developing for osteoarthritis pain and inflammation in dogs. Human drugs containing the active ingredient in CereKin are marketed extensively outside the United States for the treatment of osteoarthritis and are generally considered to be safe, except for certain gastrointestinal side effects and rare indiosyncratic skin and liver side effects in humans, for which the drug is undergoing review in the EU. These side effects appear to be less frequent or absent in dogs. Several published studies have shown that the active ingredient is effective in treating canine arthritis. We initiated the pivotal trial for CereKin in August 2013 under a Protocol Concurrence with the FDA. A Protocol Concurrence in animal drug development is analogous to a Special

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Protocol Assessment in human drug development, and means that the FDA agrees that the design and analyses proposed in a protocol are acceptable to support regulatory approval of the product candidate with respect to effectiveness of the indication studied and will not change its view of these matters, unless public or animal health concerns arise that were not recognized at the time of Protocol Concurrence or we change the protocol. We expect to have data from the pivotal trial in the second quarter of 2014 and, if positive, intend to submit NADA starting in mid-2014, with potential marketing approval in the second half of 2015. If approved, CereKin would be a first-in-class drug for the veterinary market.

Canine osteoarthritis is a chronic, progressive, degenerative joint disease, diagnosed in an estimated 20% of dogs over the age of one. Non-steroidal anti-inflammatory drugs, or NSAIDs, are the only approved treatment for canine osteoarthritis (other than steroids and a vitamin-mineral based drug), but some dogs have a sensitivity to NSAIDs that results in renal, hepatic or gastrointestinal, or GI, toxicity and, in extreme cases, death. As a result, dogs that are prescribed NSAIDs must often be monitored with baseline and periodic blood tests, and up to approximately 50% of dogs remain untreated or cannot be treated in chronic cases. If approved, we believe CereKin will be effective in the treatment of canine osteoarthritis pain and inflammation, without the need for blood monitoring tests. In humans, the active ingredient in CereKin has demonstrated added effectiveness when combined with NSAIDs versus NSAIDs alone. Based on published data, we expect CereKin may have disease-modifying effects in dogs and also may protect against NSAID-induced GI tract problems.

AtoKin

AtoKin is a high-dose, oral, chewable, beef-flavored formulation of fexofenadine that we are developing for atopic dermatitis in dogs. The active ingredient in AtoKin is a potent and selective antihistamine that is approved for allergic diseases in humans. Published data indicate that the active ingredient is as effective as steroids in treating canine atopic dermatitis. We have been granted a Protocol Concurrence by the FDA for the pivotal trial of AtoKin, which we initiated in February 2014. We expect to receive data from the trial in late 2014 and, if positive, we intend to submit a NADA in late 2014, with potential marketing approval in late 2015.

Atopic dermatitis is a common, potentially chronic, allergic skin disease that affects up to 10% of all dogs. Dogs with atopic dermatitis often suffer from pruritus, or severe itching, hair loss, tearing of the skin from deep scratching, frequent licking of their paws and excessive tear production. While currently approved drugs such as corticosteroids and oral cyclosporine are effective, they all suppress the dog’s immune system, potentially leading to serious infections. Corticosteroids also have other side effects, including osteoporosis, endocrine problems, cataracts and frequent urination. We believe that, if approved, AtoKin could be effective as both a first-line therapy and as a long-term maintenance therapy for chronic atopic dermatitis in dogs, with a safety profile superior to currently approved therapeutics.

SentiKin

SentiKin is an oral, non-NSAID, non-opioid analgesic, formulation of flupirtine that we are developing for management of post-operative pain in dogs, cats and horses. The active ingredient in SentiKin is approved for the treatment of pain in humans in multiple countries outside the United States and has demonstrated potency comparable to tramadol. Published studies suggest that the active ingredient is effective in treating canine pain. We are currently negotiating a Protocol Concurrence with the FDA for the pivotal trial for SentiKin for post-operative pain in dogs, and we intend to initiate the trial in March 2014. We expect to receive data from the trial in late 2014 and, if positive, we intend to submit a NADA in late 2014, with potential marketing approval in late 2015.

There is no standard of care for the use of pain medications following dog surgeries, and the only systemic drugs approved for treatment of post-operative pain in dogs are NSAIDs, fentanyl and pentazocine. NSAIDs are generally less effective than opioids in controlling pain and have other well-documented side effects described above in our discussion regarding CereKin. Fentanyl is a controlled narcotic drug, and pets are often kept in the hospital while receiving fentanyl. Pentazocine is a controlled narcotic drug, not widely used in dogs. We believe that, if approved, SentiKin may provide post-operative pain relief that is superior to NSAIDs and comparable to some opioids, without the potential for opioid addiction or the risk of possible diversion and abuse by pet owners.

Business Strategy

Our mission is to bring to pets the same kinds of safe and effective medicines that our human family members enjoy. Key elements of our business strategy are as follows:

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- advance CereKin, AtoKin, SentiKin and our other product candidates through development and continue to focus on execution of cost-effective research and development;
- leverage our antibody and biologics experience;
- leverage our current product pipeline in additional animal species;
- expand our pipeline with additional product candidates; and
- commercialize our products with our own direct sales force in the United States and with distributors in other regions.

Risks Related to Our Business

Our ability to successfully implement our business strategy is subject to numerous risks, as more fully described in the section entitled “Risk Factors” immediately following this prospectus summary. These risks include, among others:

- we have a limited operating history, are not profitable and may never become profitable;
- we will have no material product revenue for the foreseeable future, and we may need to raise additional capital to achieve our goals;
- we are substantially dependent on the success of our current lead product candidates, and cannot be certain that any of them will be approved for marketing or successfully commercialized;
- most of our current and future small molecule product candidates are or will be based on generic human drugs, and other companies may develop substantially similar products that may compete with our products;
- the results of earlier studies may not be predictive of the results of our pivotal trials, and we may be unable to obtain regulatory approval for our existing or future product candidates under applicable regulatory requirements;
- development of pet therapeutics is inherently expensive, time-consuming and uncertain, and any delay or discontinuance of our current or future pivotal trials would significantly harm our business and prospects;
- even if we obtain regulatory approval for our current or future product candidates, they may never achieve market acceptance or commercial success;
- we do not own any issued patents covering our product candidates;
- we are dependent upon third-party manufacturers for supplies of our current product candidates and intend to rely on third-party manufacturers for commercial quantities of any of our product candidates that may be approved; and
- if we are not successful in identifying, developing and commercializing additional product candidates, our ability to expand our business and achieve our strategic objectives would be impaired.

Corporate Information

We were incorporated on September 25, 2012 by our co-founder, Richard Chin, M.D., our President and Chief Executive Officer. Our principal executive offices are located at 1499 Bayshore Highway, Suite 226, Burlingame, California 94010, and our telephone number is (650) 701-7901. We also maintain a mailing address at 58 West Portal Avenue, #105, San Francisco, California 94127. Our website address is www.kindredbio.com. The information contained in, or accessible through, our website should not be considered a part of this prospectus.

Implications of Being an Emerging Growth Company

As a company with less than $1.0 billion in revenue during our last fiscal year, we qualify as an “emerging growth company” as defined in the Jumpstart Our Business Startups Act, or JOBS Act, enacted in April 2012. An “emerging growth company” may take advantage of reduced reporting requirements that are otherwise applicable to public companies. These

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reduced reporting requirements include:

- not being required to comply with the auditor attestation requirements of Section 404(b) of the Sarbanes-Oxley Act of 2002, as amended, or the Sarbanes-Oxley Act;
- reduced disclosure obligations regarding executive compensation in this prospectus and in our future periodic reports, proxy statements and registration statements; and
- not being required to hold a nonbinding advisory vote on executive compensation or to seek stockholder approval of any golden parachute payments not previously approved.

We may take advantage of these reduced reporting obligations until the last day of our fiscal year following the fifth anniversary of the date of the first sale of our common equity securities pursuant to an effective registration statement under the Securities Act of 1933, as amended, or the Securities Act, which fifth anniversary will occur in 2018. However, if certain events occur prior to the end of such five-year period, including if we become a “large accelerated filer,” our annual gross revenue exceeds $1.0 billion or we issue more than $1.0 billion of non-convertible debt in any three-year period, we will cease to be an emerging growth company.

We have elected to take advantage of certain of the reduced disclosure obligations regarding executive compensation in this prospectus and may elect to take advantage of other reduced reporting requirements in future filings with the Securities and Exchange Commission, or the SEC. As a result, the information that we provide to our stockholders may be different than the information you might receive from other public reporting companies in which you hold equity interests.

The JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. We have irrevocably elected not to avail ourselves of this exemption and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

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THE OFFERING

Common stock offered by us	shares (or shares if the underwriters exercise their option to purchase additional shares in full)
Common stock to be outstanding after this offering	shares (or shares if the underwriters exercise their option to purchase additional shares in full)
Option to purchase additional shares	We have granted the underwriters a 30-day option to purchase up to additional shares of our common stock to cover over-allotments, if any
Use of proceeds	We intend to use the net proceeds of this offering to accelerate and expand the research and development of our current product candidates and for potential strategic acquisition of additional product candidates or other complementary assets or businesses, and for general corporate and working capital purposes. See “Use of Proceeds” on page 32 for a more detailed description of the intended use of proceeds from this offering
Risk factors	See “Risk Factors” beginning on page 10 and other information included in this prospectus for a discussion of factors that you should consider carefully before deciding to invest in our common stock
NASDAQ Capital Market symbol	“KIN”

The number of shares of our common stock to be outstanding after this offering is based on 16,227,120 shares of our common stock outstanding as of March 10, 2014. The number of shares of our common stock to be outstanding after this offering excludes:

- 2,127,627 shares of common stock issuable upon exercise of stock options outstanding as of March 10, 2014 at a weighted-average exercise price of $6.58 per share;
- 5,000 shares of common stock issuable upon vesting of an award of restricted common stock outstanding as of March 10, 2014; and
- 1,815,448 shares of common stock reserved as of March 10, 2014 for future issuance under our 2012 Equity Incentive Plan.

Unless otherwise indicated, the information in this prospectus assumes the following:

- no exercise of the outstanding stock options and vesting of outstanding restricted stock, and no issuance or award of shares of our common stock reserved for issuance, under our 2012 Equity Incentive Plan as described above; and
- no exercise by the underwriters of their option to purchase additional shares of our common stock.

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SUMMARY SELECTED FINANCIAL DATA

The following tables set forth a summary of our selected historical financial data as of and for the periods indicated. We have derived the summary selected financial data (except the pro forma balance sheet data as of December 31, 2013) from our audited financial statements included elsewhere in this prospectus. You should read this data together with our financial statements and related notes appearing elsewhere in this prospectus and the sections in this prospectus entitled “Selected Financial Data” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations.” The historical results are not necessarily indicative of the results to be expected for any future periods.

	For The Period From September 25, 2012 (Inception) Through December 31, 2012	Year Ended December 31, 2013	Cumulative Period From September 25, 2012 (Inception) Through December 31, 2013
Statement of Operations and Comprehensive Loss Data:			
Operating expenses:			
Research and development	$74,772	$3,140,606	$3,215,378
General and administrative	44,864	1,078,687	1,123,551
Total operating expenses	119,636	4,219,293	4,338,929
Loss from operations	(119,636)	(4,219,293)	(4,338,929)
Other income (expense):			
Interest income	25	5,981	6,006
Interest expense	—	(56)	(56)
Total other income, net	25	5,925	5,950
Net loss and comprehensive loss	$(119,611)	$(4,213,368)	$(4,332,979)
Net loss per share attributable to common stockholders, basic and diluted[(1)]	$(0.06)	$(1.13)	
Weighted-average common shares outstanding, basic and diluted[(1)]	2,112,520	3,731,929	

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		As of December 31, 2013	
	As of December 31, 2012	Actual	Pro Forma (2)(3)
Balance Sheet Data:			
Cash and cash equivalents	$937,516	$65,328,787	$
Total assets	938,020	65,488,070	
Total liabilities	70,281	2,209,596	
Convertible preferred stock	987,050	—	
Deficit accumulated during the development stage	(119,611)	(4,332,979)	
Total stockholders' equity (deficit)	(119,311)	63,278,474	

(1) See Note 11 of the notes to financial statements included elsewhere in this prospectus for an explanation of the method used to calculate the basic and diluted net loss per share attributable to common stockholders and the number of shares used in the computation of the per share amounts.

(2) Pro Forma to give effect to the sale of shares of our common stock in this offering at an assumed public offering price of $24.24 per share (the last reported price of our common stock on The NASDAQ Capital Market on March 14, 2014), after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

(3) A $1.00 increase (decrease) in the assumed public offering price of $24.24 per share (the last reported price of our common stock on The NASDAQ Capital Market on March 14, 2014), would increase (decrease) the as adjusted amount of each of cash and cash equivalents, total assets, and total stockholders' equity by approximately $ million, assuming that the number of shares offered by us, as set forth on the cover of this prospectus, remains the same and after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

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RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the risks described below, as well as the other information in this prospectus, including our financial statements and the related notes and "Management's Discussion and Analysis of Financial Condition and Results of Operations," before deciding whether to invest in our common stock. The occurrence of any of the events or developments described below could harm our financial condition, results of operations, business and prospects. In such an event, the market price of our common stock could decline, and you may lose all or part of your investment. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may have similar adverse effects on us.

Risks Related to Our Business

We have a limited operating history, are not profitable and may never become profitable.

We are a development stage biopharmaceutical company. Since our formation in September 2012, our operations have been limited to the identification of product candidates and research and development of our lead product candidates, primarily CereKin, AtoKin and SentiKin. As a result, we have limited historical operations upon which to evaluate our business and prospects and have not yet demonstrated an ability to obtain marketing approval for any of our product candidates or successfully overcome the risks and uncertainties frequently encountered by companies in emerging fields such as the pet therapeutics industry. We also have not generated any revenue to date, and continue to incur significant research and development and other expenses. Our net loss and comprehensive loss for the fiscal year ended December 31, 2013 was $4,213,368 and for the period from September 25, 2012 (inception) through December 31, 2013 was $4,332,979. As of December 31, 2013, we had a deficit accumulated during the development stage of $4,332,979. For the foreseeable future, we expect to continue to incur losses, which will increase significantly from historical levels as we expand our product development activities, seek regulatory approvals for our product candidates and begin to commercialize them if they are approved by the Center for Veterinary Medicine branch of the U.S. Food and Drug Administration, or FDA, the U.S. Department of Agriculture, or USDA, or the European Medicines Agency, or EMA. Even if we succeed in developing and commercializing one or more product candidates, we expect to continue to incur losses for the foreseeable future, and we may never become profitable. If we fail to achieve or maintain profitability, it would adversely affect the value of our common stock.

We will have no material product revenue for the foreseeable future, and we may need to raise additional capital to achieve our goals.

Until, and unless, we receive approval from the FDA, USDA or EMA, as applicable, for one or more of our product candidates, we cannot market or sell our products in the United States or in the European Union, or EU, and will have no material product revenue. Currently, our only product candidates in a pivotal trial, also known as a field efficacy trial, are CereKin and AtoKin. We expect to initiate the pivotal trial for SentiKin in March 2014. Our other current product candidates will require from three to five years of further development at a cost of approximately $3 million to $5 million per product candidate before we expect to be able to apply for marketing approval in the United States. We also are actively involved in identifying additional human therapeutics for development and commercialization as pet therapeutics, and will continue to expend substantial resources for the foreseeable future to develop our current product candidates and any other product candidates we may develop or acquire. These expenditures will include: costs of identifying additional potential product candidates; costs associated with drug formulation; costs associated with conducting pilot, pivotal, and toxicology studies; costs associated with completing other research and development activities; costs associated with payments to technology licensors and maintaining other intellectual property; costs of obtaining regulatory approvals; costs associated with establishing commercial manufacturing and supply capabilities; and costs associated with marketing and selling any of our products approved for sale. We also may incur unanticipated costs. Because the outcome of our development activities and commercialization efforts is inherently uncertain, the actual amounts necessary to successfully complete the development and commercialization of our current or future product candidates may be greater or less than we anticipate.

We believe our existing cash and cash equivalents, together with the net proceeds of this offering, will be sufficient to fund our operating plan through the anticipated approval and commercial launch of one or more of our lead product candidates.

Even if we believe we have sufficient funds on hand for our current or planned future business and operations, we may seek from time to time to raise additional capital based upon favorable market conditions or strategic considerations such as availability of potential acquisitions. We have no current agreements or arrangements with respect to any financings, and any

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such financings may result in further dilution to our stockholders, the imposition of debt covenants and repayment obligations or other restrictions that may adversely affect our business or the value of our common stock.

Our future capital requirements depend on many factors, including, but not limited to:

- the scope, progress, results and costs of researching and developing our current or future product candidates;
- the timing of, and the costs involved in, obtaining regulatory approvals for any of our current or future product candidates;
- the number and characteristics of the product candidates we pursue;
- the cost of manufacturing our current and future product candidates and any products we successfully commercialize;
- the cost of commercialization activities if any of our current or future product candidates are approved for sale, including marketing, sales and distribution costs;
- the expenses needed to attract and retain skilled personnel;
- the costs associated with being a public company;
- our ability to establish and maintain strategic collaborations, licensing or other arrangements and the financial terms of such agreements; and
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing possible patent claims, including litigation costs and the outcome of any such litigation.

Additional funds may not be available when we need them on terms that are acceptable to us, or at all. If adequate funds are not available to us on a timely basis, we may be required to delay, limit, reduce or terminate one or more of our product development programs or any future commercialization efforts.

We are substantially dependent on the success of our current lead product candidates, and cannot be certain that any of them will be approved for marketing or successfully commercialized even if approved.

We have no product approved for sale in any jurisdiction, and are focused primarily on the development of our lead product candidates, CereKin, AtoKin and SentiKin. Accordingly, our near-term prospects, including our ability to generate material product revenue, or enter into potential strategic transactions, will depend heavily on the successful development and commercialization of one or more of our lead candidates, which in turn will depend on a number of factors, including the following:

- the successful completion of the pivotal trials and toxicology studies of one or more of our current product candidates, which may take significantly longer than we currently anticipate and will depend, in part, upon the satisfactory performance of third-party contractors;
- our ability to demonstrate to the satisfaction of the FDA, the USDA and the EMA the safety and efficacy of our product candidates and to obtain regulatory approvals;
- the ability of our third-party manufacturers to manufacture supplies of any of our product candidates and to develop, validate and maintain viable commercial manufacturing processes that are compliant with Good Manufacturing Practices, or GMP;
- our ability to successfully launch commercial sales of our current product candidates, assuming marketing approval is obtained, whether alone or in collaboration with others;
- the availability, perceived advantages, relative cost, relative safety and relative efficacy of our products compared to alternative and competing treatments;

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- the acceptance of our product candidates as safe and effective by veterinarians, pet owners and the animal health community;
- our ability to achieve and maintain compliance with all regulatory requirements applicable to our business; and
- our ability to obtain and enforce our intellectual property rights and obtain marketing exclusivity for our product candidates, and avoid or prevail in any third-party patent interference, patent infringement claims or administrative patent proceedings initiated by third parties or the U.S. Patent and Trademark Office, or USPTO.

Many of these factors are beyond our control. Accordingly, we cannot assure you that we will be successful in developing or commercializing one or more of our lead product candidates. If we are unsuccessful or are significantly delayed in developing and commercializing CereKin, AtoKin, SentiKin or any of our other current or future product candidates, our business and prospects will be materially adversely affected and you may lose all or a portion of the value of your investment in our common stock.

Most of our current and future small molecule product candidates are or will be based on generic human drugs, and other companies may develop substantially similar products that may compete with our products.

Most of the small molecule product candidates we are currently developing or expect to develop are based on generic human drugs. We do not engage in early-stage research or discovery with respect to our small molecule product candidates, but focus primarily on product candidates whose active pharmaceutical ingredient, or API, has been successfully commercialized or demonstrated to be safe or effective in human trials, which we sometimes refer to as validated. There is little, if any, third-party patent protection of the active ingredient in most of our current small molecule product candidates, and this means that our small molecule product candidates may face competition from their human generic equivalents in countries where such equivalents are available and used in unapproved animal indications, which is known as extra-label use.

While in most cases we select product candidates that are not available as a human generic in the United States, in cases where there is a human generic available there is no assurance that the eventual prices of our products will be lower than or competitive with the prices of human generic equivalents used extra-label, or that a palatable, easy-to-administer formulation such as the chewable, beef-flavored formulation that we utilize will be sufficient to differentiate them from their human equivalents. Human generics available outside the United States cannot be imported into the United States for use in animals, except on a case-by-case basis where the FDA determines it is medically necessary.

We target small molecule product candidates for which the active ingredients have not been previously approved for use in animals. If we are the first to gain approval for the use of such active ingredients in animals, our small molecule products will enjoy five years of marketing exclusivity in the United States and ten years in the EU for the approved indication. We also plan to differentiate our products where possible with specific formulations, including flavors, methods of administration, new patents and other strategies, but we cannot assure you that we will be able to prevent competitors from developing substantially similar products and bringing those products to market earlier than we can. In addition, while we expect to have composition of matter patents on most of our biologic product candidates, we may not ultimately be able to obtain such patents. Although there are no generic regulatory approval pathways for animal biologics in the United States and European Economic Area, or EEA, our competitors may develop biologics that bind to the same target, but do not infringe any patents we may obtain. Thus, our competitors may be able to develop and market competing products if they are willing and able to conduct the full set of required studies, file a New Animal Drug Application, or NADA, with the FDA, or Application for United States Veterinary Biological Product License with the USDA, also called a Product License Application, or PLA, and obtain marketing approval. If such competing products achieve regulatory approval and commercialization prior to our product candidates, or if our intellectual property protection and efforts to obtain regulatory exclusivity fail to provide us with exclusive marketing rights for some of our products, then our business and prospects could be materially adversely affected.

If our product candidates are approved, they may face significant competition and may be unable to compete effectively.

The development and commercialization of pet therapeutics is highly competitive and our success depends on our ability to compete effectively with other products in the market. If our product candidates are approved, we expect to

compete with animal health divisions of major pharmaceutical and biotechnology companies such as Merck Animal Health, Merial, Elanco, Bayer Animal Health, Novartis and Boehringer Ingelheim Animal Health, as well as specialty animal health medicines companies such as Zoetis and, in Europe, Virbac Group, Ceva Animal Health and Dechra Pharmaceuticals. Additionally, we are aware of several early-stage companies that are developing products for use in the pet therapeutics market, including Aratana

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Therapeutics. We also expect to compete with academic institutions, governmental agencies and private organizations that are conducting research in the field of animal health medicines.

If approved, CereKin and SentiKin will face competition from existing products approved for pain in dogs such as Rimadyl, Deramaxx, Previcox and Metacam. Similarly, AtoKin will face competition from existing products such as Atopica and Apoquel and from steroids, and SentiKin will compete against other pain drugs such as Recuvyra. Many of our product candidates also will face competition from various products approved for use in humans that are used extra-label in animals, and all of our products will face potential competition from new products in development. These and other potential competing products may benefit from greater brand recognition and brand loyalty than our product candidates may achieve.

Many of our competitors and potential competitors have substantially more financial, technical and human resources than we do. Many also have far more experience than we have in the development, manufacture, regulation and worldwide commercialization of animal health medicines, including pet therapeutics. We also expect to compete with academic institutions, governmental agencies and private organizations that are conducting research in the field of animal health medicines.

For these reasons, there is no assurance that we and our products can compete effectively.

The development of our biologic product candidates is dependent upon relatively novel technologies and uncertain regulatory pathways.

We plan to develop biologics, including animal antibodies, for pets. Identification, optimization, and manufacture of therapeutic animal biologics is a relatively new field in which unanticipated difficulties or challenges could arise, and we expect the discovery, development, manufacturing and sale of biologic products to be a long, expensive and uncertain process. While many biologics have been approved for use in humans, apart from vaccines, relatively few recombinant proteins or antibodies have been approved for use in animals. There are unique risks and uncertainties with biologics, the development, manufacturing, and sale of which are subject to regulations that are often more complex and extensive than the regulations applicable to other small molecule products. We may be unable to identify biologics suitable for development or to achieve the potency and stability required for use in pets. In particular, canine, feline, and equine antibodies represent new types of product candidates that may be difficult to develop successfully.

In some cases, it may be unclear whether our product candidates meet the definition of a biological product subject to regulation by the USDA or a drug subject to regulation by the FDA. The USDA's Center for Veterinary Biologics and the FDA's Center for Veterinary Medicine have a memorandum of understanding concerning their joint responsibilities for resolving jurisdictional issues over products of this nature. Under the memorandum of understanding, animal products are to be regulated by the USDA as biologics, if they are intended for use to diagnose, cure, mitigate, treat, or prevent disease in animals and they work primarily through an immune process, or by the FDA as drugs, if they are intended for use in the diagnosis, cure, mitigation, treatment, or prevention of animal disease if the primary mechanism of action is not immunological or is undefined.

Although we believe that most of our current animal biologics will be regulated by the USDA based on their mechanisms of action, the USDA and the FDA may not agree with our assessment, or disputes may arise between the USDA and the FDA over regulatory jurisdiction for one or more of such biologics. If so, the development of our biologics may be delayed while any such disputes are adjudicated by the agencies. Furthermore, if the agencies were to determine that one or more of our animal biologics will be regulated by the FDA instead of the USDA, the time and cost of developing such biologics may be longer and more expensive than we currently anticipate, and we may determine to discontinue development of such biologics. It is also possible that the USDA's regulatory standards for novel biologics may be more difficult to satisfy than we anticipate.

Because the regulatory standards for pet biologics are often less stringent than for small molecule animal drugs, we believe that some veterinarians prefer to see further efficacy data before making a new biologic product purchasing decision. Accordingly, we may also find it necessary to conduct additional studies of our biologic product candidates in order to achieve commercial success.

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The results of earlier studies may not be predictive of the results of our pivotal trials, and we may be unable to obtain regulatory approval for our existing or future product candidates under applicable regulatory requirements. The denial or delay of any regulatory approval would prevent or delay our commercialization efforts and adversely affect our potential to generate material product revenue and our financial condition and results of operations.

The research, testing, manufacturing, labeling, approval, sale, marketing and distribution of pet therapeutics are subject to extensive regulation. We are usually not permitted to market our products in the United States until we receive approval of an NADA from the FDA or a PLA from the USDA, or in the EU or in other EEA countries until we receive marketing approval from the EMA. To gain approval to market a pet therapeutic for a particular species, we must provide the FDA, the USDA and the EMA, as applicable, with efficacy data from pivotal trials that adequately demonstrate that our product candidates are safe and effective in the target species (e.g., dogs, cats or horses) for the intended indications. In addition, we must provide manufacturing data. For the FDA and EMA, we must provide data from toxicology studies, also called target animal safety studies, and in some cases environmental impact data. We are conducting the pivotal trial of CereKin internally without significant outsourcing, and plan to also conduct the pivotal trials in AtoKin and SentiKin the same way, but we rely on contract research organizations, or CROs, and other third parties to conduct our toxicology studies and for certain other development activities. The results of toxicology studies and other initial development activities, and of any previous studies in humans or animals conducted by us or third parties, may not be predictive of future results of pivotal trials or other future studies, and failure can occur at any time during the conduct of pivotal trials and other development activities by us or our CROs. Our pivotal trials may fail to show the desired safety or efficacy of our product candidates despite promising initial data or the results in previous human or animal studies conducted by others, and success of a product candidate in prior animal studies, or in the treatment of human beings, does not ensure success in subsequent studies. Clinical trials in humans and pivotal trials in animals sometimes fail to show a benefit even for drugs that are effective, because of statistical limitations in the design of the trials or other statistical anomalies. Therefore, even if our studies and other development activities are completed as planned, the results may not be sufficient to obtain regulatory approval for our product candidates.

The FDA, USDA or EMA can delay, limit or deny approval of any of our product candidates for many reasons, including:

- if the FDA, USDA or EMA disagrees with our interpretation of data from our pivotal studies or other development efforts;
- if we are unable to demonstrate to the satisfaction of the FDA, USDA or EMA that the product candidate is safe and effective for the target indication;
- if the FDA, USDA or EMA requires additional studies or changes its approval policies or regulations;
- if the FDA, USDA or EMA does not approve of the formulation, labeling or the specifications of our current and future product candidates; and
- if the FDA, USDA or EMA fails to approve the manufacturing processes of our third-party contract manufacturers.

Further, even if we receive approval of our product candidates, such approval may be for a more limited indication than we originally requested, and the FDA, USDA or EMA may not approve the labeling that we believe is necessary or desirable for the successful commercialization of our product candidates.

Any delay or failure in obtaining applicable regulatory approval for the intended indications of our product candidates would delay or prevent commercialization of such product candidates and would materially adversely impact our business and prospects.

Our Protocol Concurrences with the FDA for our pivotal studies do not guarantee marketing approval in the United States.

We have Protocol Concurrences with the FDA for the pivotal trial of CereKin for the treatment of osteoarthritis in dogs and the pivotal trial of AtoKin for the treatment of atopic dermatitis in dogs. A Protocol Concurrence in animal drug development is analogous to a Special Protocol Assessment in human drug development, and means that the FDA agrees that the design and analyses proposed in a protocol are acceptable to support regulatory approval of the product candidate with respect to effectiveness of the indication studied and will not change its view of these matters,

unless public or animal health concerns arise that were not recognized at the time of Protocol Concurrence or we change the protocol. Even under a Protocol

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Concurrence, approval of an NADA by the FDA is not guaranteed, because a final determination that the agreed-upon protocol satisfies a specific objective, such as the demonstration of efficacy, or supports an approval decision, will be based on a complete review of all the data submitted to the FDA.

Development of pet therapeutics is inherently expensive, time-consuming and uncertain, and any delay or discontinuance of our current or future pivotal trials would significantly harm our business and prospects.

Development of pet therapeutics remains an inherently lengthy, expensive and uncertain process, and there is no assurance that our development activities will be successful. We do not know whether the pivotal trials of CereKin and AtoKin or the planned pivotal trial of SentiKin, or of our other current or future product candidates, will conclude or begin on time, and they may be delayed or discontinued for a variety of reasons, including if we are unable to:

- address any safety concerns that arise during the course of the studies;
- complete the studies due to deviations from the study protocols or the occurrence of adverse events;
- add new study sites;
- address any conflicts with new or existing laws or regulations; or
- reach agreement on acceptable terms with study sites, which can be subject to extensive negotiation and may vary significantly among different sites.

Any delays in completing our development efforts will increase our costs, delay our product candidate development and approval process and jeopardize our ability to commence product sales and generate revenue. Any of these occurrences may significantly harm our business, financial condition and prospects. In addition, factors that may cause a delay in the commencement or completion of our development efforts may also ultimately lead to the denial of regulatory approval of our product candidates which, as described above, would materially, adversely impact our business and prospects.

We currently rely on third parties to conduct some of our development activities, and may rely more heavily on such third parties in the future. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, we may be unable to obtain regulatory approval for or commercialize our current or future product candidates as planned.

We currently plan to conduct our own pivotal trials, including our current and planned pivotal trials of CereKin, AtoKin and SentiKin, but we rely upon CROs to conduct our toxicology studies and for other development activities. We also may rely on CROs in the future to conduct one or more pivotal trials. These CROs are not our employees, and except for contractual duties and obligations, we have limited ability to control the amount or timing of resources that they devote to our programs or manage the risks associated with their activities on our behalf. We are responsible to regulatory authorities for ensuring that each of our studies is conducted in accordance with the development plans and trial protocols, and any failure by our CROs to do so may adversely affect our ability to obtain regulatory approvals, subject us to penalties, or harm our credibility with regulators. The FDA and foreign regulatory authorities also require us and our CROs to comply with regulations and standards, commonly referred to as good clinical practices, or GCPs, or good laboratory practices, or GLPs, for conducting, monitoring, recording and reporting the results of our studies to ensure that the data and results are scientifically credible and accurate.

Our agreements with CROs may allow termination by the CROs in certain circumstances with little or no advance notice to us. These agreements generally will require our CROs to reasonably cooperate with us at our expense for an orderly winding down of the CROs' services under the agreements. If the CROs conducting our studies do not comply with their contractual duties or obligations to us, or if they experience work stoppages, do not meet expected deadlines, terminate their agreements with us or need to be replaced, or if the quality or accuracy of the data they obtain is compromised due to the failure to adhere to our development protocols or GCPs or for any other reason, we may need to secure new arrangements with alternative CROs, which could be difficult and costly. In such event, our studies also may need to be extended, delayed or terminated as a result, or may need to be repeated. If any of the foregoing were to occur, regulatory approval and commercialization of our product candidates may be delayed and we may be required to expend substantial additional resources.

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Even if we obtain regulatory approval of one or more of our current or future product candidates, they may never achieve market acceptance or commercial success.

If we obtain FDA, USDA or EMA approvals for one or more of our current or future product candidates, they may not achieve market acceptance among veterinarians and pet owners, and may not be commercially successful. Market acceptance of any of our current or future product candidates for which we may receive approval depends on a number of factors, including:

- the indications for which our products are approved;
- the potential and perceived advantages of our product candidates over alternative treatments, including generic medicines and competing products currently prescribed by veterinarians, and products approved for use in humans that are used extra-label in animals;
- the cost of treatment in relation to alternative treatments and willingness on the part of veterinarians and pet owners to pay for our products, including other discretionary items, especially during economically challenging times;
- the prevalence and severity of any adverse side effects of our products;
- the relative convenience and ease of administration of our products;
- the effectiveness of our sales and marketing efforts; and
- the proper training and administration of our products by veterinarians and acceptance by veterinarians and pet owners of our products as safe and effective.

Any failure by our product candidates that obtain regulatory approval to achieve market acceptance or commercial success would adversely affect our financial condition and results of operations.

Pet therapeutics, like human therapeutics, are subject to unanticipated post-approval safety or efficacy concerns, which may harm our business and reputation.

The success of our commercialization efforts will depend upon the perceived safety and effectiveness of pet therapeutics, in general, and of our products, in particular. Unanticipated safety or efficacy concerns can arise with respect to approved pet therapeutics after they enter into commerce, which may result in product recalls or withdrawals or suspension of sales, as well as product liability and other claims. It is also possible that the occurrence of significant adverse side effects in approved human generic compounds upon which our product candidates are based could impact our products. Diacerein, the active ingredient in CereKin, has been associated with gastrointestinal side effects and rare skin and liver side effects that occur at a rate of one in a million or less in humans, for which diacerein is undergoing a safety and efficacy review by the EMA. Because reliable detection of such rare events would require exposure of millions or tens of millions of dogs, it is not possible to rule out the risk until well after the launch of the product. The EMA's Pharmacovigilance Risk Assessment Committee has recommended to the Coordination Group for Mutual Recognition and Decentralised Procedures—Human, or CMDh, that diacerein be suspended from marketing for humans because of these side effects, until convincing evidence of a positive benefit-risk balance in a specific human patient population is provided. The recommendation has been appealed by manufacturers of diacerein. Subject to the appeal, the CMDh will undertake its own assessment of the drug, followed possibly by review by the European Commission.

The active ingredient in SentiKin, has been associated with rare idiosyncratic liver adverse reactions. The EMA has conducted a review of the drug and has determined that the risk-benefit profile in humans justifies its use in short-term indications, but not in long-term indications. We intend to develop SentiKin for short-term treatment of post-operative pain, but we may be not able to rule out a potential liver adverse effect until well after the launch of the drug. Any safety or efficacy concerns, or recalls, withdrawals or suspensions of sales of our products or other pet therapeutics, or of their human equivalents, could harm our reputation, in particular, or pet therapeutics, generally, and materially, adversely affect our business and prospects or the potential growth of the pet therapeutics industry, regardless of whether such concerns or actions are justified.

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Future federal and state legislation may result in increased exposure to product liability claims, which could result in substantial losses to us.

Under current federal and state laws, pets are generally considered to be personal property of their pet owners and, as such, pet owners' recovery for product liability claims involving their pets may be limited to the replacement value of the pets. Pet owners and their advocates, however, have filed lawsuits from time to time seeking non-economic damages such as pain and suffering and emotional distress for harm to their pets based on theories applicable to personal injuries to humans. If new legislation is passed to allow recovery for such non-economic damages, or if precedents are set allowing for such recovery, we could be exposed to increased product liability claims that could result in substantial losses to us if successful. In addition, some horses can be worth millions of dollars or more, and product liability for horses may be very high.

Although we maintain product liability insurance, it is possible that our insurance will not be sufficient to cover any future product liability claims against us.

If we fail to retain current members of our senior management, or to attract and keep additional key personnel, our business and prospects could be materially adversely impacted.

Our success depends on our continued ability to attract, retain and motivate highly qualified management and scientific personnel. We are highly dependent upon our senior management, particularly Richard Chin, M.D., our President and Chief Executive Officer, Kevin Schultz, D.V.M., Ph.D., our Head of Research and Development and Chief Scientific Officer, Denise Bevers, our Chief Operating Officer, Stephen Galliker, our Chief Financial Officer, and Stephen Sundlof, D.V.M., Ph.D., our Senior Vice President of Regulatory Affairs. The loss of services of any of our key personnel could adversely affect our ability to successfully develop our current or future product pipeline and commercialize our product candidates. Although we have entered into employment agreements with these key members of senior management, such agreements generally do not prohibit them from leaving our employ at any time. We currently maintain "key man" life insurance on Dr. Chin, but the loss of Dr. Chin or other members of our current senior management could adversely affect the timing or outcomes of our current and planned studies, as well as longer-term prospects for commercializing our product candidates.

In addition, competition for qualified personnel in the animal health fields is intense, because there is a limited number of individuals who are trained or experienced in the field. We will need to hire additional personnel as we expand our product development and commercialization activities, and we may not be able to attract and retain qualified personnel on acceptable terms, or at all.

We are dependent upon third-party manufacturers for supplies of our current product candidates, and intend to rely on third-party manufacturers for commercial quantities of any of our product candidates that may be approved.

We currently have no internal capability to manufacture the formulated product candidates for use in our studies or commercial supplies of any of our product candidates that may be approved, and will be entirely dependent upon third-party manufacturers for such supplies. We and our contract manufacturers have historically been able to obtain supplies of the API for development of our product candidates, but neither we nor our contract manufacturers have long-term supply agreements with the API manufacturers. We also have no agreements for commercial-scale supply of the API or manufacture of any of our product candidates. As a result, we and our contract manufacturers may be unable to procure API in a timely manner on commercially reasonable terms, or at all. Any delay in identifying and contracting with third-party contract manufacturers on commercially reasonable terms would have an adverse impact upon our current product development activities and future commercialization efforts.

The facilities used by our contract manufacturers to manufacture the drugs are subject to inspections by the FDA, USDA, and the EMA, and we depend on our contract manufacturers to comply with GMP. If our contract manufacturers cannot successfully manufacture material in compliance with these strict regulatory requirements, we and they will not be able to secure or maintain regulatory approval for their manufacturing facilities. In some cases, we also are dependent on our contract manufacturers to produce supplies in conformity to our specifications and maintain quality control and quality assurance practices and not to employ disqualified personnel. If the FDA or a comparable foreign regulatory authority does not approve the manufacturing facilities of our contract manufacturers, or if it withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which could result in delays in, or adversely affect our ability to, develop or commercialize our product candidates. We and

our contract manufacturers also may be subject to penalties and sanctions from the FDA and other regulatory authorities for any violations of applicable regulatory requirements. The USDA and EMA employ

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different regulatory standards than the FDA, so we may require multiple manufacturing processes and facilities for the same product candidate or any approved product.

The commercialization of any of our product candidates could be adversely affected if we are unable to secure sufficient quantities and quality of drug products in a timely manner.

The raw materials used to manufacture our current small molecule product candidates are generally readily available in commercial quantities from multiple suppliers, but we will be dependent upon our contract manufacturers to obtain these raw materials. If manufacturers are unable to do so as and when they are needed to supply our development and commercial needs, we will have no other means of producing our product candidates until they are able to do so or we or they procure alternative supplies of the API. If our third-party manufacturers suffer damage or destruction to their facilities or equipment, we may experience disruptions in supplies, or be unable to obtain supplies of product candidates on a timely basis. Any inability to secure sufficient quantities and quality of the API or other raw materials in our products candidates would adversely impact our development activities and commercialization efforts. In some cases, contract manufacturers may be reluctant to manufacture the API in pet therapeutics, because of regulatory or other concerns. This may make it more difficult for us to identify manufacturers needed to supply sufficient quantities of our product candidates for development.

Biologics manufacturing is difficult and costly, and may not be commercially viable.

There are no established sources of the active ingredients in our biologic product candidates, so we or our collaborators will be required to develop the manufacturing process, perform validation and in some cases establish new facilities to manufacture pet biologics. Manufacturing of pet biologics, apart from vaccines, is a relatively new field in which unanticipated difficulties or challenges could arise. Small changes in the manufacturing process can have significant impact on product quality, consistency and yield. Manufacturing biologics, especially in large quantities, is complex and may require the use of innovative technologies that we may need to develop ourselves or in conjunction with third-party collaborators. Such manufacturing requires facilities specifically designed and validated for this purpose and sophisticated quality assurance and quality control procedures. Biologics are also usually costly to manufacture, because production usually requires the use of living organisms. Factors such as these may make it more technically challenging, time-consuming and expensive than we anticipate to manufacture biologics. Animal antibodies also must be manufactured at a sufficiently low cost that they are economically viable for us and for our customers. There is no assurance that we will be able to manufacture biologics at an economical cost, if at all.

If we are unable to establish sales capabilities on our own or through third parties, we may not be able to market and sell our current or future product candidates, if approved, and generate product revenue.

We currently have no sales, marketing or distribution capabilities. If our current or future product candidates receive regulatory approval, we expect to establish a direct sales organization in the United States, which will be expensive and time-consuming. In jurisdictions outside of the United States we intend to utilize companies with an established commercial presence to market our products in those jurisdictions, but we may be unable to enter into such arrangements on acceptable terms, if at all. We have no prior experience in the marketing, sale and distribution of pet therapeutics or other products, and there are significant risks involved in building and managing a sales organization, including our potential inability to hire, retain and motivate qualified individuals, generate sufficient sales leads, provide adequate training to sales and marketing personnel and effectively oversee a geographically-dispersed sales and marketing team. Any failure or delay in the development of our internal sales, marketing and distribution capabilities and entry into adequate arrangements with distributors would adversely impact the commercialization of our product candidates. If we are not successful in commercializing any of our current or future product candidates, either on our own or through one or more distributors, we may never generate significant revenue and may continue to incur significant losses, which would adversely affect our financial condition and results of operations.

If we are not successful in identifying, developing, and commercializing additional product candidates, our ability to expand our business and achieve our strategic objectives would be impaired.

A key element of our strategy is to identify, develop and commercialize a portfolio of products to serve the emerging pet therapeutics market. We expect to identify additional potential pet therapeutic product candidates from targets, molecules, and compounds discovered or developed as part of human biopharmaceutical research. Ideally, we try to identify product candidates that are free from any intellectual property rights of others. If we are unable to identify

human health-generated molecules and compounds to conduct research and development, our ability to develop new products could be limited. In addition, we may in the future enter into license agreements with third parties to provide us with rights to the compounds for

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purposes of our business. Even if we enter into these arrangements, we may not be able to maintain these relationships or establish new ones in the future on acceptable terms, or at all.

Even if we successfully identify or license potential product candidates, we may still fail to yield product candidates for development and commercialization for many reasons, including the following:

- product candidates we develop may be covered by third parties' patents or other exclusive rights unknown to us;
- a product candidate may on further study be shown to have harmful side effects in pets or other characteristics that indicate it is unlikely to be effective or otherwise does not meet applicable regulatory criteria;
- a product candidate may not be capable of being produced in commercial quantities at an acceptable cost, or at all;
- a product candidate may not be accepted as safe and effective by veterinarians, pet owners and the pet therapeutic community; and
- competitors may develop alternatives that render our product candidates obsolete.

Failure to identify further product candidates ultimately suitable for development and commercialization would have an adverse impact on our growth strategy and future business prospects.

Changes in distribution channels for pet therapeutics may make it more difficult or expensive to distribute our products.

In the United States, pet owners typically purchase their pet therapeutics from their local veterinarians who also prescribe such therapeutics. There is a trend, however, toward increased purchases of pet therapeutics from Internet-based retailers, "big-box" retail stores and other over-the-counter distribution channels, which follows a significant shift in recent years away from the traditional veterinarian distribution channel in the sale of parasiticides and vaccines. It is also possible that pet owners may come to rely increasingly on internet-based animal health information rather than on their veterinarians. We currently expect to market our pet therapeutics directly to veterinarians, so any reduced reliance on veterinarians by pet owners could materially adversely affect our business and prospects. Pet owners also may substitute human health products for pet therapeutics if the human health products are less expensive or more readily available, which substitution also could adversely affect our business.

Legislation has been or may be proposed in the United States or abroad that would require veterinarians to provide pet owners with written prescriptions and disclosures that the pet owner has the right to fill the prescriptions through other means. If enacted, such legislation could lead to a reduction in the number of pet owners who purchase their pet therapeutics directly from veterinarians, which also could adversely affect our business.

While most of our biologic products will be delivered by injection and therefore may be insulated to a degree from competition from non-veterinary dispensing, for our small molecule products, over time, these and other competitive conditions may make us reliant upon Internet-based retailers, "big-box" retail stores or other over-the-counter distribution channels, for which we have no current or planned business relationships, to sell our pet products. Any of these events could materially adversely affect our business and prospects or require us to dramatically change our marketing and distribution strategies, which may not be feasible or successful.

Consolidation of our customers could negatively affect the pricing of our products.

Veterinarians will be our primary customers for any approved products. In recent years, there has been a trend towards the consolidation of veterinary clinics and animal hospitals. If this trend continues, these large clinics and hospitals could attempt to leverage their buying power to obtain favorable pricing from us and other pet therapeutics companies. Any resulting downward pressure on the prices of any of our approved products could have a material adverse effect on our results of operations and financial condition.

We will need to increase the size of our organization and may not successfully manage our growth.

We currently have only fifteen full-time employees, and our management systems currently in place are not likely to be adequate to support our future growth, if any. Our ability to manage our growth effectively will require us to hire, train, retain, manage and motivate additional employees and to implement and improve our operational, financial and management systems.

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These demands also may require the hiring of additional senior management personnel or the development of additional expertise by our senior management personnel. If we fail to expand and enhance our operational, financial and management systems in conjunction with our potential future growth, it could have a material adverse effect on our business, financial condition and results of operations.

Our research and development relies on evaluations in animals, which is controversial and may become subject to bans or additional regulations.

The evaluation of our product candidates in target animals is required to develop and commercialize our product candidates. Although our animal testing will be subject to GLP and GCP requirements, as applicable, animal testing in the human pharmaceutical industry and in other industries has been the subject of controversy and adverse publicity. Some organizations and individuals have sought to ban animal testing or encourage the adoption of additional regulations applicable to animal testing. To the extent that such bans or regulations are imposed, our research and development activities, and by extension our operating results and financial condition, could be materially adversely affected. In addition, negative publicity about animal practices by us or in our industry could harm our reputation among potential customers for our products.

If approved, our product candidates may be marketed in the United States only in the target animals and for the indications for which they are approved, and if we want to expand the approved animals or indications, we will need to obtain additional FDA or USDA approvals, which may not be granted.

If our product candidates are approved by regulatory authorities, we may market or advertise them only in the specific species and for treatment of the specific indications for which they were approved, which could limit use of the products by veterinarians and pet owners. We intend to develop, promote and commercialize one or more of our current product candidates for other animals and new treatment indications in the future, but there is no assurance whether or at what additional time and expense we will be able to do so. If we do not obtain marketing approvals for other animals or for new indications, our ability to expand our business may be adversely affected.

Use of a drug outside its cleared or approved indications in the animal context is known as extra-label use. Under the Animal Medicinal Drug Use Clarification Act of 1994, or AMDUCA, veterinarians are permitted to prescribe extra-label uses of certain approved animal drugs and approved human drugs for animals under certain conditions. Thus, although veterinarians may in the future prescribe and use human-approved products or our products for extra-label uses, we may not promote our products for extra-label uses. If the FDA determines that any of our marketing activities constitute promotion of an extra-label use, it could subject us to regulatory enforcement, which could have an adverse impact on our reputation and potential liability to us.

The commercial potential of a product candidate in development is difficult to predict. The market for our product candidates, or for the pet therapeutics industry as a whole, is uncertain and may be smaller than we anticipate, which could significantly and negatively impact our revenue, results of operations and financial condition.

It is very difficult to estimate the commercial potential of any of our product candidates because of the emerging nature of our industry as a whole. The pet therapeutics market continues to evolve and it is difficult to predict the market potential for what we believe to be the unmet medical needs of pets. The market will depend on important factors such as safety and efficacy compared to other available treatments, including potential human generic therapeutic alternatives with similar efficacy profiles, changing standards of care, preferences of veterinarians, the willingness of pet owners to pay for such products, and the availability of competitive alternatives that may emerge either during the product development process or after commercial introduction. If the market potential for our product candidates is less than we anticipate due to one or more of these factors, it could negatively impact our business, financial condition and results of operations. Further, the willingness of pet owners to pay for our product candidates, if approved, may be less than we anticipate, and may be negatively affected by overall economic conditions. The current penetration of pet insurance in the United States is low, pet owners are likely to have to pay for our products, if at all, out-of-pocket, and pet owners may not be willing or able to pay for any approved products of ours.

Risks Related to Intellectual Property

Our commercial success will depend, in part, on obtaining and maintaining patent protection for our products.

Insofar as our business strategy is to develop successful human drugs and biologics for veterinary use, our ability to obtain a proprietary intellectual property position for our products is uncertain. We do not have any issued patents for our lead

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product candidates at this time. However, we have filed patent applications covering various aspects of our drug and biological candidates in animals. Our patent applications may never result in the issuance of patents, and/or patents issued to us may be dominated by the patents of third parties, including for example, patents issued to analogous human drug or biological compositions and their usages. Furthermore, even if they are unchallenged by third parties, our patents, if issued, may not adequately protect our intellectual property or prevent others from designing around their claims. In order to commercialize our drug and biological candidates in one or more species, we could be required to enter into third party licenses or, if a license is not available on terms that we consider reasonable, we could be required to cease development or commercialization of one or more of our drug or biologic products or product candidates. Thus, if we cannot obtain ownership of issued patents covering our product candidates, our business and prospects would be adversely affected.

It is possible that no patents will issue to us to cover our approved products, and/ or that we will have little to no commercial protection against competing products. In such cases, we would then rely solely on other forms of exclusivity, such as regulatory exclusivity provided by the Federal Food, Drug and Cosmetic act, if available, which may provide less protection to our competitive position.

Recent patent reform legislation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of any patents that issue. On September 16, 2011, the Leahy-Smith America Invents Act, or the Leahy-Smith Act, was signed into law. The Leahy-Smith Act includes a number of significant changes to U.S. patent law. These include provisions that affect the way patent applications are prosecuted, redefine prior art, may affect patent litigation, and switch the U.S. patent system from a “first-to-invent” system to a “first-to-file” system. Under a “first-to-file” system, assuming the other requirements for patentability are met, the first inventor to file a patent application generally will be entitled to the patent on an invention regardless of whether another inventor had made the invention earlier. The USPTO recently developed new regulations and procedures to govern administration of the Leahy-Smith Act, and many of the substantive changes to patent law associated with the Leahy-Smith Act, and in particular, the first-to-file provisions, only became effective on March 16, 2013. Accordingly, it is not clear what, if any, impact the Leahy-Smith Act will have on the operation of our business. However, the Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of any patents that issue, all of which could have a material adverse effect on our business and financial condition.

We may become subject to third parties’ claims alleging infringement of patents and proprietary rights or priority of invention, which would be costly, time-consuming and, if successfully asserted against us, delay or prevent the development and commercialization of our current or future product candidates.

There has been substantial litigation regarding patents and other intellectual property rights in the field of therapeutics, as well as patent challenge proceedings, including interference and administrative law proceedings before the United States Patent and Trademark Office, or the USPTO, and oppositions and other comparable proceedings in foreign jurisdictions. Under U.S. patent reform laws, new procedures, including inter partes review and post-grant review, were implemented as of March 16, 2013, and the implementation of such reform laws presents uncertainty regarding the outcome of any challenges to our future patents, if any. We are aware of several issued patents and pending patent applications with claims directed to long-acting or extended-release pharmaceutical formulations and uses of the same small molecules as in some of our small molecule product candidates, and other patents and pending patent applications with claims directed to pharmaceutical formulations and use of human biologics conceptually similar to some of our biologics product candidates. There also may be other patents already issued of which we are unaware that might be infringed by one of our current or future product candidates. Because patent applications can take many years to issue and may be confidential for eighteen months or more after filing, there may be applications now pending of which we are unaware and which may later result in issued patents that may be infringed by our current or future product candidates. There is no assurance that our current or future product candidates will not infringe these or other existing or future third-party patents. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents.

To the extent we become subject to future third-party claims against us or our collaborators, we could incur substantial expenses and, if any such claims are successful, we could be liable to pay substantial damages, including treble

damages and attorney's fees if we or our collaborators are found to be willfully infringing a third-party's patents. If a patent infringement suit were brought against us or our collaborators, we or they could be forced to stop or delay research, development, manufacturing or sales of the product candidate that is the subject of the suit. Even if we are successful in defending such claims, infringement and other intellectual property claims can be expensive and time-consuming to litigate and divert management's attention from our business and operations. As a result of or in order to avoid potential patent infringement claims, we or our collaborators may be compelled to seek a license from a third party for which we would be required to pay license fees or royalties, or both.

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Moreover, these licenses may not be available on acceptable terms, or at all. Even if we or our collaborators were able to obtain such a license, the rights may be nonexclusive, which could allow our competitors access to the same intellectual property. Any of these events could harm our business and prospects.

In addition to possible infringement claims against us, we may be subject to third-party preissuance submission of prior art to the USPTO, or become involved in opposition, derivation, reexamination, inter partes review, post-grant review, or other patent office proceedings or litigation in the United States or elsewhere, challenging our patent rights or the patent rights of others. If third parties have prepared and filed patent applications in the United States that also claim technology to which we have rights, we may have to participate in interference proceedings in the USPTO to determine the priority of invention. We may also become involved in similar opposition proceedings in the European Patent Office or similar offices in other jurisdictions regarding our intellectual property rights with respect to our products and technology. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate, our future patent rights, if any, allow third parties to commercialize our technology or products and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third-party patent rights.

If our efforts to protect the proprietary nature of the intellectual property related to any of our current or future product candidates are not adequate, we may not be able to compete effectively in our market.

We intend to rely upon a combination of regulatory exclusivity periods, patents, trade secret protection, confidentiality agreements, and license agreements to protect the intellectual property related to our current product candidates and our development programs.

Composition-of-matter patents on the active ingredients in pharmaceutical products, including pet therapeutics, are generally considered to be the strongest form of intellectual property protection, since such patents provide protection without regard to any particular method of use or manufacture. We do not have composition-of-matter patents for the active ingredient in our small molecule product candidates, and there is little, if any, such composition-of-matter patent protection available. Moreover, we cannot be certain that the claims in our patent applications covering composition-of-matter of our biologics product candidates will be considered patentable by the USPTO and courts in the United States, or by the patent offices and courts in foreign countries.

Method-of-use patents protect the use of a product for the specified method. This type of patent does not prevent a competitor from developing or marketing an identical product for an indication that is outside the scope of the patented method. Moreover, even if competitors do not actively promote their product for our targeted indications for which we may obtain patents, veterinarians may recommend that pet owners use these products extra-label, or pet owners may do so themselves. Although extra-label use may infringe or contribute to the infringement of method-of-use patents, the practice is common and such infringement is difficult to prevent or prosecute.

If the breadth or strength of protection provided by any patent applications or future patents we may own, in-license, or pursue with respect to any of our current or future product candidates is threatened, it could threaten our ability to commercialize any of our current or future product candidates. Further, if we encounter delays in our development efforts, the period of time during which we could market any of our current or future product candidates under any patent protection we obtain would be reduced.

Even where laws provide protection or we are able to obtain patents, costly and time-consuming litigation may be necessary to enforce and determine the scope of our proprietary rights, and the outcome of such litigation would be uncertain. Moreover, any actions we may bring to enforce our intellectual property against our competitors could provoke them to bring counterclaims against us, and some of our competitors have substantially greater intellectual property portfolios than we have.

We also rely on trade secret protection and confidentiality agreements to protect proprietary know-how that is not patentable or for which we have not filed patent applications, processes for which patents are difficult to enforce and other elements of our product development processes that involve proprietary know-how, information or technology that is not covered by patents. Although we require all of our employees to assign their inventions to us, and endeavor to execute confidentiality agreements with all of our employees, consultants, advisors and any third parties who have access to our proprietary know-how, information or technology, we cannot be certain that we have executed such agreements with all parties who may have helped to develop our intellectual property or had access to our proprietary

information, or that our agreements will not be breached. We cannot guarantee that our trade secrets and other confidential proprietary information will not be disclosed or that competitors will not otherwise gain access to our trade secrets or independently develop substantially

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equivalent information and techniques. If we are unable to prevent material disclosure of the intellectual property related to our technologies to third parties, we will not be able to establish or maintain a competitive advantage in our market, which could materially adversely affect our business, results of operations and financial condition.

Any disclosure to or misappropriation by third parties of our confidential proprietary information could enable competitors to quickly duplicate or surpass our technological achievements, thus eroding our competitive position in our market.

We may be involved in lawsuits to protect or enforce any future patents issued to us, which could be expensive, time-consuming and unsuccessful.

Competitors may infringe any patents that may issue to us, or any patents that we may license. To counter infringement or unauthorized use of any patents we may obtain, we may be required to file infringement claims, which can be expensive and time-consuming to litigate. In addition, if we or one of our future collaborators were to initiate legal proceedings against a third party to enforce a patent covering our current product candidates, or one of our future products, the defendant could counterclaim that the patent is invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO, or made a materially misleading statement, during prosecution. Third parties may also raise similar claims before the USPTO, even outside the context of litigation. The outcome following legal assertions of invalidity and unenforceability is unpredictable. We cannot be certain that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity or unenforceability, we would lose at least part, and perhaps all, of any future patent protection on our current or future product candidates. Such a loss of patent protection could have a material adverse impact on our business.

Litigation proceedings may fail and, even if successful, may result in substantial costs and distract our management and other employees. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be unsuccessful, it could have an adverse effect on the price of our common stock. Finally, we may not be able to prevent, alone or with the support of our licensors, misappropriation of our trade secrets or confidential information, particularly in countries where the laws may not protect those rights as fully as in the United States.

Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our products.

As is the case with other biopharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biopharmaceutical industry involves both technological and legal complexity. Therefore, obtaining and enforcing biopharmaceutical patents is costly, time-consuming and inherently uncertain. In addition, the United States has recently enacted and is currently implementing wide-ranging patent reform legislation. The U.S. Supreme Court has ruled on several patent cases in recent years, either narrowing the scope of patent protection available in certain circumstances or weakening the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts, and the USPTO, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce patents that we might obtain in the future.

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

Filing, prosecuting and defending patents on product candidates throughout the world would be prohibitively expensive. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and, further, may export otherwise infringing products to territories where we may obtain patent protection, but where patent enforcement is not as strong as that in the United States. These products may

compete with our products in jurisdictions where we do not have any issued or licensed patents and any future patent claims or other intellectual property rights may not be effective or sufficient to prevent them from so competing.

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Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents and other intellectual property protection, particularly those relating to biopharmaceuticals, which could make it difficult for us to stop the infringement of our future patents, if any, or marketing of competing products in violation of our proprietary rights generally. Further, the laws of some foreign countries do not protect proprietary rights to the same extent or in the same manner as the laws of the United States. As a result, we may encounter significant problems in protecting and defending our intellectual property both in the United States and abroad. Proceedings to enforce our future patent rights, if any, in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business.

We have no registered trademarks for our company name or for our current product candidates in the United States or any other countries, and failure to obtain those registrations could adversely affect our business.

Although we have filed trademark applications for our company name and for our CereKin, AtoKin and SentiKin product candidates in the United States, our applications have not been granted and the corresponding marks have not been registered in the United States. We have not filed for these or other trademarks in any other countries. During trademark registration proceedings, we may receive rejections. If so, we will have an opportunity to respond, but we may be unable to overcome such rejections. In addition, USPTO and comparable agencies in many foreign jurisdictions may permit third parties to oppose pending trademark applications and to seek to cancel registered trademarks. If opposition or cancellation proceedings are filed against any of our trademark applications or any registered trademarks, our trademarks may not survive such proceedings. Moreover, any name we propose to use with our product candidates in the United States must be approved by the FDA or the USDA, regardless of whether we have registered or applied to register as a trademark. The FDA typically conducts a review of proposed product names, including an evaluation of potential for confusion with other product names. If the FDA or the USDA objects to any of our proposed proprietary product names, we may be required to expend significant additional resources in an effort to identify a suitable substitute name that would qualify under applicable trademark laws, not infringe the existing rights of third parties and be acceptable to the FDA or USDA.

We may be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information of third parties.

We have received confidential and proprietary information from third parties. In addition, we employ individuals who were previously employed at other biotechnology, pharmaceutical or animal health companies. We may be subject to claims that we or our employees, consultants or independent contractors have inadvertently or otherwise improperly used or disclosed confidential information of these third parties or our employees' former employers. Litigation may be necessary to defend against any such claims. Even if we are successful in defending against any such claims, such litigation could result in substantial cost and be a distraction to our management and employees.

Risks Related to Government Regulation

Even if we receive regulatory approval for any of our current or future product candidates, we will be subject to ongoing FDA, USDA, and EMA obligations and continued regulatory review, which may result in significant additional expense. Additionally, any product candidates, if approved, will be subject to labeling and manufacturing requirements and could be subject to other restrictions. Failure to comply with these regulatory requirements or the occurrence of unanticipated problems with our products could result in significant penalties.

If the FDA, USDA, or EMA approves any of our current or future product candidates, the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, advertising, promotion and recordkeeping for the product will be subject to extensive and ongoing regulatory requirements. These requirements include submissions of safety and other post-marketing information and reports, establishment registration, and product listing, as well as continued compliance with GMP, GLP and GCP for any studies that we conduct post-approval. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on the marketing or manufacturing of the product, withdrawal of the product from the market, or voluntary product recalls;

- fines, warning letters or holds on target animal studies;

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- refusal by the FDA, USDA, or EMA to approve pending applications or supplements to approved applications filed by us or our strategic collaborators, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; and
- injunctions or the imposition of civil or criminal penalties.

The FDA, USDA, or EMA's policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability, which would adversely affect our business.

If approved, any of our current or future products may cause or contribute to adverse medical events that we are required to report to regulatory authorities and, if we fail to do so, we could be subject to sanctions that would materially harm our business.

If we are successful in commercializing any of our current or future product candidates, at least certain regulatory authorities will require that we report certain information about adverse medical events if those products may have caused or contributed to those adverse events. The timing of our obligation to report would be triggered by the date we become aware of the adverse event as well as the nature of the event. We may fail to report adverse events we become aware of within the prescribed timeframe. We may also fail to appreciate that we have become aware of a reportable adverse event, especially if it is not reported to us as an adverse event or if it is an adverse event that is unexpected or removed in time from the use of our products. If we fail to comply with our reporting obligations, the regulatory authorities could take action including criminal prosecution, seizure of our products or delay in approval or clearance of future products.

Legislative or regulatory reforms with respect to pet therapeutics may make it more difficult and costly for us to obtain regulatory clearance or approval of any of our current or future product candidates and to produce, market, and distribute our products after clearance or approval is obtained.

From time to time, legislation is drafted and introduced in the U.S. Congress or EU that could significantly change the statutory provisions governing the testing, regulatory clearance or approval, manufacture, and marketing of regulated products. In addition, FDA and USDA regulations and guidance are often revised or reinterpreted by the FDA and USDA in ways that may significantly affect our business and our products. Similar changes in laws or regulations can occur in other countries. Any new regulations or revisions or reinterpretations of existing regulations in the United States or in other countries may impose additional costs or lengthen review times of any of our current or future product candidates. We cannot determine what effect changes in regulations, statutes, legal interpretation or policies, when and if promulgated, enacted or adopted may have on our business in the future. Such changes could, among other things, require:

- changes to manufacturing methods;
- recall, replacement, or discontinuance of certain products; and
- additional record keeping.

Each of these would likely entail substantial time and cost and could materially harm our financial results. In addition, delays in receipt of or failure to receive regulatory clearances or approvals for any future products would harm our business, financial condition, and results of operations.

Certain of our product candidates currently in development may be classified as controlled substances, the manufacture, use, sale, importation, exportation, and distribution of which are subject to additional regulation by state, federal, and foreign law enforcement and other regulatory agencies.

Certain of our product candidates may be subject to regulation as controlled substances under the federal Controlled Substances Act of 1970, or CSA, and regulations of the U.S. Drug Enforcement Administration, or DEA. The DEA regulates controlled substances as Schedule I, II, III, IV or V substances. Schedule I substances by definition have no established medicinal use and may not be marketed or sold in the United States. An animal drug product may be listed

as Schedule II, III,

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IV or V, with Schedule II substances considered to present the highest risk of abuse and Schedule V substances the lowest relative risk of abuse among such substances.

Various states also independently regulate controlled substances. Though state controlled substances laws often mirror federal law, because the states are separate jurisdictions, they may separately schedule drugs as well. While some states automatically schedule a drug when the DEA does so, in other states there must be rulemaking or a legislative action. State scheduling may delay commercial sale of any controlled substance drug product for which we obtain federal regulatory approval and adverse scheduling could impair the commercial attractiveness of such product. We would also be required to obtain separate state registrations in order to be able to obtain, handle and distribute controlled substances for target animal studies, and failure to meet applicable regulatory requirements could lead to enforcement and sanctions from the states in addition to those from the DEA or otherwise arising under federal law.

For any of our product candidates classified as controlled substances, we and our suppliers, manufacturers, contractors, customers and distributors will be required to obtain and maintain applicable registrations from state, federal and foreign law enforcement and regulatory agencies and comply with state, federal and foreign laws and regulations regarding the manufacture, use, sale, importation, exportation and distribution of controlled substances. There is a risk that DEA regulations may limit the supply of the compounds used in pivotal trials of our product candidates, and, in the future, the ability to produce and distribute our products in the volume needed to meet commercial demand.

Regulations associated with controlled substances govern manufacturing, labeling, packaging, testing, dispensing, production and procurement quotas, recordkeeping, reporting, handling, shipment and disposal. These regulations increase the personnel needs and the expense associated with development and commercialization of product candidates containing controlled substances. The DEA and some states conduct periodic inspections of registered establishments that handle controlled substances. Failure to obtain and maintain required registrations or comply with any applicable regulations could delay or preclude us from developing and commercializing our product candidates containing controlled substances and subject us to enforcement action. The DEA may seek civil penalties, refuse to renew necessary registrations or initiate proceedings to revoke those registrations. In some circumstances, violations could lead to criminal proceedings. Because of their restrictive nature, these regulations could limit commercialization of any of our product candidates that are classified as controlled substances.

Risks Related to this Offering and Our Common Stock

The price of our common stock could be subject to volatility related or unrelated to our operations.

Since our initial public offering in December 2013, the trading price of our common stock has ranged from a low of $8.75 to a high of $26.99, and could be subject to wide fluctuations in the future in response to various factors, some of which are beyond our control. These factors include those discussed previously in this “Risk Factors” section of this prospectus and others, such as:

- any delays in, or suspension or failure of, our current and future studies;
- announcements of regulatory approval or disapproval of any of our current or future product candidates or of regulatory actions affecting us or our industry;
- delays in the commercialization of our current or future product candidates;
- manufacturing and supply issues related to our development programs and commercialization of our current or future product candidates;
- quarterly variations in our results of operations or those of our competitors;
- changes in our earnings estimates or recommendations by securities analysts or adverse publicity about us or our product candidates;
- announcements by us or our competitors of new product candidates, significant contracts, commercial relationships, acquisitions or capital commitments;
- announcements relating to future development or license agreements including termination of such agreements;

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- adverse developments with respect to our intellectual property rights or those of our principal collaborators;
- commencement of litigation involving us or our competitors;
- any major changes in our board of directors or management;
- new legislation in the United States relating to the prescription, sale, distribution or pricing of pet therapeutics;
- product liability claims, other litigation or public concern about the safety of our product candidates or future products;
- market conditions in the animal health industry, in general, or in the pet therapeutics sector, in particular, including performance of our competitors; and
- general economic conditions in the United States and abroad.

In addition, the stock market, in general, or the market for stocks in our industry, in particular, may experience broad market fluctuations, which may adversely affect the market price or liquidity of our common stock. Any sudden decline in the market price of our common stock could trigger securities class-action lawsuits against us. If any of our stockholders were to bring such a lawsuit against us, we could incur substantial costs defending the lawsuit and the time and attention of our management would be diverted from our business and operations. We also could be subject to damages claims if we are found to be at fault in connection with a decline in our stock price.

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

The public offering price of our common stock is substantially higher than the pro forma net tangible book value per share of our common stock before giving effect to this offering. Accordingly, if you purchase our common stock in this offering, you will incur immediate dilution of approximately $ per share, representing the difference between the assumed public offering price of $24.24 per share (the last reported price of our common stock on The NASDAQ Capital Market on March 14, 2014) and our net tangible book value per share as of December 31, 2013. In addition, following this offering, purchasers in this offering will have contributed approximately % of the total gross consideration paid by stockholders to us to purchase shares of our common stock through December 31, 2013, but will own only approximately % of the shares of common stock outstanding immediately after this offering. Furthermore, if the underwriters exercise their option to purchase additional shares of our common stock or our outstanding stock options are exercised, you will experience further dilution. For a further description of the dilution that you will experience immediately after this offering, see the section in this prospectus entitled “Dilution.”

If securities or industry analysts do not publish research or reports about our company, or if they issue an adverse or misleading opinions regarding us or our stock, our stock price and trading volume could decline.

Although we have research coverage by securities and industry analysts, if coverage is not maintained, the market price for our stock may be adversely affected. Our stock price also may decline if any analyst who covers us issues an adverse or erroneous opinion regarding us, our business model, our intellectual property or our stock performance, or if our target animal studies and operating results fail to meet analysts’ expectations. If one or more analysts cease coverage of us or fail to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our stock price or trading volume to decline and possibly adversely affect our ability to engage in future financings.

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

Upon the closing of this offering, based on shares outstanding as of March 10, 2014, our executive officers, directors, holders of 5% or more of our common stock and their respective affiliates will beneficially own in the aggregate approximately % of our outstanding shares of common stock. As a result of their stock ownership, these stockholders may have the ability to influence our management and policies, and will be able to significantly affect the outcome of matters requiring stockholder approval such as elections of directors, amendments of our organizational documents or approvals 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 feel are in your best interest as one of our stockholders.

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Sales of a substantial number of shares of our common stock in the public market could cause our stock price to fall. If our existing stockholders sell, or indicate an intention to sell, substantial amounts of our common stock in the public market after the expiration or termination of the lock-up and other legal restrictions on resale discussed in this prospectus, the trading price of our common stock could decline. Based upon the number of shares outstanding as of March 10, 2014, upon the closing of this offering, we will have outstanding a total of shares of common stock. Of these shares, approximately shares, plus any shares sold upon exercise of the underwriters' option to purchase additional shares of our common stock, will be freely tradable in the public market immediately following this offering.

The lock-up agreements pertaining to our initial public offering will expire on June 10, 2014. After the lock-up agreements expire, up to approximately 7,630,120 shares of common stock will be eligible for sale in the public market, of which approximately 4,166,006 shares are held by directors, executive officers and other stockholders and will be subject to vesting schedules or volume limitations under Rule 144 under the Securities Act. The lock-up agreements pertaining to this offering will expire 90 days from the date of this prospectus. After the lock-up agreements expire, up to an additional 3,292,819 shares of common stock will be eligible for sale in the public market, all of which are held by our directors and executive officers and will be subject to vesting schedules or volume limitations under Rule 144 under the Securities Act. The representatives of the underwriters of our initial public offering or of this offering may, in their sole, joint discretion, permit our officers, directors and other stockholders who are subject to lock-up agreements to sell shares even prior to the expiration of the lock-up agreements pertaining to our initial public offering or to this offering. In addition, shares of common stock that are subject to outstanding options under our 2012 equity incentive plan will become eligible for sale in the public market to the extent permitted by the provisions of various vesting schedules, the lock-up agreements and Rule 144 and Rule 701 under the Securities Act. The sale or possible sale of these additional shares may adversely affect the trading price of our common stock.

We will have broad discretion to use the net proceeds of this offering, and may use them in ways that do not enhance our operating results or the market price of our common stock.

Our management will have broad discretion regarding the use of proceeds of this offering, and we could spend the net proceeds in ways our stockholders may not agree with or that do not yield a favorable return, if at all. We intend to use the net proceeds of this offering in connection with possible future in-licenses or acquisitions of products or product candidates or other complementary assets or businesses or other strategic transactions, to accelerate the research and development of some of our current product candidates and the establishment of our commercial infrastructure and other general corporate and working capital purposes. We currently have no agreements or commitments to in-license or acquire any product, product candidate or other asset or business or to enter into any strategic transaction. Our use of these proceeds may differ substantially from our current plans. If we do not invest or apply the proceeds of this offering in ways that improve our operating results or our prospects, our stock price could decline.

We may acquire other businesses, or form joint ventures, that may be unsuccessful and could adversely dilute your ownership of our company.

We intend to use a portion of the net proceeds of the offering to pursue possible acquisitions or strategic alliances. Our company has no experience in acquiring other assets or businesses and has limited experience in forming such alliances. We may not be able to successfully integrate any acquisitions into our existing business, and we could assume unknown or contingent liabilities or become subject to possible stockholder claims in connection with any related-party or third-party acquisitions or other transactions. We also could experience adverse effects on our reported results of operations from acquisition-related charges, amortization of acquired technology and other intangibles and impairment charges relating to write-offs of goodwill and other intangible assets from time to time following an acquisition. Integration of an acquired company requires management resources that otherwise would be available for ongoing development of our existing business. We may not realize the anticipated benefits of any acquisition, technology license or strategic alliance.

To finance future acquisitions, we may choose to issue shares of our common stock as consideration, which would dilute your ownership interest in us. Alternatively, it may be necessary for us to raise additional funds through public or private financings. Additional funds may not be available on terms that are favorable to us and, in the case of equity

financings, may result in dilution to our stockholders.

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If we fail to maintain effective internal control over financial reporting, we may not be able to accurately report our operating results or prevent fraud and, as a result, our business could be harmed and current and potential stockholders could lose confidence in us, which could cause our stock price to fall.

Prior to our recent initial public offering, we were not subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and had limited accounting personnel and other resources with which to address our internal controls and procedures. As a public reporting company, we are required, among other obligations, to maintain effective internal control over financial reporting suitable to prepare our publicly reported financial statements in a timely and accurate manner. In connection with our initial public offering, we identified two material weaknesses in our internal control over financial reporting. A material weakness is defined as a control deficiency, or combination of control deficiencies, that adversely affects an entity's ability to initiate, authorize, record, process or report financial data reliably in accordance with accounting principles generally accepted in the United States, or GAAP, such that there is more than a remote likelihood that a material misstatement of the entity's financial statements will not be prevented or detected by the entity's internal control over financial reporting. The material weaknesses we identified related to our accounting for complex equity transactions and our lack of segregation of duties within the accounting function due to a limited number of personnel. We implemented corrective actions during the year ended December 31, 2013 to address these material weaknesses, including the hiring of a Chief Financial Officer and additional employees and accounting consultants, and realigned roles and responsibilities to strengthen internal controls over financial reporting through enhanced segregation of duties. Our independent registered public accounting firm did not perform an evaluation of our internal control over financial reporting during any period in accordance with the provisions of the Sarbanes-Oxley Act of 2002, or Sarbanes-Oxley Act. As a public company, our management is required to comply with Section 404(a) of the Sarbanes-Oxley Act in the course of preparing our financial statements; however, so long as we remain an emerging growth company, we will not be required to comply with the auditor attestation requirements of Section 404(b) of the Sarbanes-Oxley Act. Had our independent registered public accounting firm performed an evaluation of our internal control over financial reporting in accordance with the provisions of the Sarbanes-Oxley Act, additional control deficiencies amounting to material weaknesses may have been identified. If we fail to comply with the requirements of Section 404, we might be subject to sanctions or investigation by regulatory agencies such as the SEC. In addition, failure to comply with Section 404 or the report by us of a material weakness may cause investors to lose confidence in our financial statements, and the trading price of our common stock may decline. If we fail to remedy any material weakness, our financial statements may be inaccurate, our access to the capital markets may be restricted and the trading price of our ordinary shares may suffer.

Provisions in our charter documents and under Delaware law could discourage a takeover that stockholders may consider favorable and may lead to entrenchment of management.

Our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that could delay or prevent changes in control or changes in our management without the consent of our board of directors. These provisions include the following:

- a classified board of directors with three-year staggered terms, which may delay the ability of stockholders to change the membership of a majority of our board of directors;
- no cumulative voting in the election of directors, which limits the ability of minority stockholders to elect director candidates;
- the exclusive right of our board of directors to elect a director to fill a vacancy created by the expansion of the board of directors or the resignation, death or removal of a director, which prevents stockholders from being able to fill vacancies on our board of directors;
- the ability of our board of directors to authorize the issuance of shares of preferred stock and to determine the terms of those shares, including preferences and voting rights, without stockholder approval, which could adversely affect the rights of our common stockholders or be used to deter a possible acquisition of our company;
- the ability of our board of directors to alter our bylaws without obtaining stockholder approval;
- the required approval of the holders of at least two-thirds of the shares entitled to vote at an election of directors to adopt, amend or repeal our bylaws or repeal the provisions of our amended and restated certificate of incorporation regarding the election and removal of directors;

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- a prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders;
- the requirement that a special meeting of stockholders may be called only by the chairman of the board of directors, the chief executive officer, the president or the board of directors, which may delay the ability of our stockholders to force consideration of a proposal or to take action, including the removal of directors; and
- advance notice procedures that stockholders must comply with in order to nominate candidates to our board of directors or to propose matters to be acted upon at a stockholders' meeting, which may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of us.

These provisions could inhibit or prevent possible transactions that some stockholders may consider attractive.

We are also subject to the anti-takeover provisions contained in Section 203 of the Delaware General Corporation Law. Under Section 203, a corporation generally may not engage in a business combination with any holder of 15% or more of its capital stock unless the holder has held the stock for three years or, among other exceptions, the board of directors has approved the transaction.

Our amended and restated by-laws designate the Court of Chancery of the State of Delaware as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or other employees.

Our amended and restated by-laws provide that, unless we consent in writing to an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of a fiduciary duty owed by any director, officer or other employee to us or our stockholders, (iii) any action asserting a claim arising pursuant to any provision of the Delaware General Corporation Law, or (iv) any action asserting a claim that is governed by the internal affairs doctrine. Any person purchasing or otherwise acquiring any interest in any shares of our capital stock shall be deemed to have notice of and to have consented to this provision of our amended and restated by-laws. This choice-of-forum provision may limit our stockholders' ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage such lawsuits. Alternatively, if a court were to find this provision of our amended and restated by-laws inapplicable or unenforceable with respect to one or more of the specified types of actions or proceedings, we may incur additional costs associated with resolving such matters in other jurisdictions, which could adversely affect our business and financial condition.

We do not intend to pay dividends on our common stock, and your ability to achieve a return on your investment will depend on appreciation in the market price of our common stock.

As described in the section entitled "Dividend Policy" in this prospectus, we currently intend to invest our future earnings, if any, to fund our growth and not to pay any cash dividends on our common stock. Since we do not intend to pay dividends, your ability to receive a return on your investment will depend on any future appreciation in the market price of our common stock. There is no assurance that our common stock will appreciate in price.

As a newly public company, we will incur significant additional costs, and our management will be required to devote substantial management time and attention to our public reporting obligations.

Prior to our initial public offering, we were not required to comply with public reporting, corporate governance and financial accounting practices and policies required of a publicly-traded company. As a publicly-traded company, we will incur significant additional legal, accounting and other expenses compared to historical levels. In addition, new and changing laws, regulations and standards relating to corporate governance and public disclosure, including the Dodd-Frank Wall Street Reform and Consumer Protection Act and the rules and regulations thereunder, as well as under the Sarbanes-Oxley Act, the JOBS Act and the rules and regulations of the U.S. Securities and Exchange Commission, or SEC, and The NASDAQ Stock Market, may result in an increase in our costs and the time that our board of directors and management must devote to our compliance with these rules and regulations. We expect these rules and regulations to substantially increase our legal and financial compliance costs from their historical levels and to divert management time and attention from our product development and other business activities.

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We are an "emerging growth company" and we cannot be certain if the reduced disclosure requirements applicable to "emerging growth companies" will make our common stock less attractive to investors.

We are an "emerging growth company," as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, and we may take advantage of certain exemptions and relief from various reporting requirements that are applicable to other public companies that are not "emerging growth companies." In particular, while we are an "emerging growth company" (i) we will not be required to comply with the auditor attestation requirements of Section 404(b) of the Sarbanes-Oxley Act, (ii) we will be exempt from any rules that may be adopted by the Public Company Accounting Oversight Board requiring mandatory audit firm rotations or a supplement to the auditor's report on financial statements, (iii) we will be subject to reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements and (iv) we will not be required to hold nonbinding advisory votes on executive compensation or stockholder approval of any golden parachute payments not previously approved. In addition, the JOBS Act provides that an emerging growth company can delay its adoption of any new or revised accounting standards, but we have irrevocably elected not to avail ourselves of this exemption and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

We may remain an "emerging growth company" until as late as December 31, 2018 (the fiscal year-end following the fifth anniversary of the completion of this initial public offering), though we may cease to be an "emerging growth company" earlier under certain circumstances, including (i) if the market value of our common stock that is held by non-affiliates exceeds $700 million as of any June 30, in which case we would cease to be an "emerging growth company" as of the following December 31, or (ii) if our gross revenue exceeds $1 billion in any fiscal year.

The exact implications of the JOBS Act are still subject to interpretations and guidance by the SEC and other regulatory agencies, and we cannot assure you that we will be able to take advantage of all of the benefits of the JOBS Act. In addition, investors may find our common stock less attractive if we rely on the exemptions and relief granted by the JOBS Act. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may decline and/or become more volatile.

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," the corporation's ability to use its pre-change net operating loss carryforwards and other pre-change tax attributes (such as research and development tax credits) to offset its post-change income and taxes may be limited. In general, an "ownership change" occurs if there is a cumulative change in our ownership by "5% shareholders" that exceeds 50 percentage points over a rolling three-year period. Similar rules may apply under state tax laws. If we experience one or more ownership changes as a result of our initial public offering or future transactions in our stock, we may be limited in our ability to use our net operating loss carryforwards and other tax assets to reduce taxes owed on the net taxable income that we earn. Any such limitations on the ability to use our net operating loss carryforwards and other tax assets could potentially result in increased future tax liability to us.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements. All statements other than statements of historical facts contained in this prospectus, including statements regarding our future results of operations and financial position, business strategy, prospective products, product approvals, research and development costs, timing and likelihood of success, plans and objectives of management for future operations, and future results of current and anticipated products are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as "may," "will," "should," "expect," "plan," "aim," "anticipate," "could," "intend," "target," "project," "contemplate," "believe," "estimate," "predict," "potential" or "continue" o of these terms or other similar expressions. The forward-looking statements in this prospectus are only predictions.

We have based these forward-looking statements largely on our current expectations and projections about

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future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements speak only as of the date of this prospectus and are subject to a number of risks, uncertainties and assumptions described under the sections in this prospectus entitled “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and elsewhere in this prospectus. Forward-looking statements are subject to inherent risks and uncertainties, some of which cannot be predicted or quantified and some of which are beyond our control. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Moreover, we operate in a dynamic industry and economy. New risk factors and uncertainties may emerge from time to time, and it is not possible for management to predict all risk factors and uncertainties that we may face. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise.

INDUSTRY DATA

Unless otherwise indicated, information contained in this prospectus concerning our industry and the markets in which we operate, including our general expectations and market position, market opportunity and market share, is based on information from our own management estimates and research, as well as from industry and general publications and research, surveys and studies conducted by third parties. Management estimates are derived from publicly available information, our knowledge of our industry and assumptions based on such information and knowledge, which we believe to be reasonable. In addition, assumptions and estimates of our and our industry’s future performance are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described in “Risk Factors.” These and other factors could cause our future performance to differ materially from our assumptions and estimates. See also the “Special Note Regarding Forward-Looking Statements,” above.

USE OF PROCEEDS

We estimate that the net proceeds to us from the sale of shares of common stock that we are offering will be approximately $ million (or $ million if the underwriters exercise their option to purchase additional shares in full) at the assumed price of $24.24 per share (the last reported price of our common stock on the NASDAQ Capital Market on March 14, 2014), after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. Each $1.00 increase or decrease in the assumed public offering price of $24.24 per share (the last reported price of our common stock on The NASDAQ Capital Market on March 14, 2014) would increase or decrease our net proceeds by approximately $ million, assuming the number of shares offered by us, as set forth on the cover of this prospectus, remains the same and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us.

We intend to use the net proceeds of this offering to accelerate and expand the research and development of our product candidates, and for potential strategic acquisitions of additional product candidates or other complementary assets or businesses, We believe that there are multiple additional product opportunities that we could pursue that can yield attractive returns on investment and we intend to pursue them with the additional capital from this offering. In addition, we believe there are attractive potential assets and businesses that we could acquire. We believe that having readily available cash to fund such acquisitions on a short notice will put us at a competitive advantage compared to potential other competitive acquirers. More specifically, we expect to use:

- approximately $40 million to $45 million to fund potential acquisitions;
- approximately $10 million to $15 million to accelerate and expand our pipeline; and
- the balance, together with our existing cash and cash equivalents for other general corporate and working capital purposes.

We currently have no agreements or commitments to in-license or acquire any product, product candidate or other asset or business or to complete any strategic transaction.

Pending use of the proceeds as described above, we intend to invest the net proceeds of this offering in short-term, interest-bearing, investment-grade securities or certificates of deposit.

Our management will have broad discretion regarding the use of proceeds of this offering, and investors will be relying

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on the judgment of our management regarding the application of the proceeds from this offering. We may change the use of these proceeds from those described above as a result of various factors such as changes in available acquisition opportunities, competitive developments, the results of our early clinical development and commercialization efforts, and other factors.

MARKET PRICE OF OUR COMMON STOCK

Our common stock has been listed on The NASDAQ Capital Market under the symbol "KIN" since December 12, 2013. Prior to that, there was no public market for our common stock. The following table sets forth for the periods indicated the high and low sales prices per share of our common stock as reported on The NASDAQ Capital Market:

2013:	High	Low
Fourth quarter [(1)]	$14.06	$8.75
2014:		
First quarter (through March 14, 2014)	$26.99	$9.99

(1) Represents the period from December 12, 2013, the date on which our common stock first began to trade on The NASDAQ Capital Market, through December 31, 2013.

A recent reported closing price for our common stock is set forth on the cover of this prospectus. As of March 10, 2014, there were 80 holders of record of our common stock.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock. We intend to retain future earnings, if any, to finance the operation and expansion of our business and do not anticipate paying any cash dividends in the foreseeable future. Any future determination related to dividend policy will be made at the discretion of our board of directors after considering our financial condition, results of operations, capital requirements, business prospects and other factors the board of directors deems relevant, and subject to the restrictions contained in any future credit facilities or other financing arrangements.

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CAPITALIZATION

The following table sets forth our cash and cash equivalents and capitalization as of December 31, 2013 as follows:

- on an actual basis; and
- on a pro forma basis to give effect to our issuance and sale of shares of common stock in this offering at the assumed public offering price of $24.24 per share (the last reported price of our common stock on the NASDAQ Capital Market on March 14, 2014), after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

You should read this information in conjunction with our financial statements and the related notes appearing at the end of this prospectus and the sections in this prospectus entitled “Selected Financial Data,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and other financial information contained in this prospectus.

	As of December 31, 2013	
	Actual	Pro forma[1]
Cash and cash equivalents	$65,328,787	$
Preferred stock, par value $0.0001 per share; 10,000,000 shares authorized, no shares issued and outstanding, actual and pro forma	$—	$
Common stock, par value $0.0001 per share; 100,000,000 shares authorized, 16,214,620 shares issued and outstanding, actual; shares issued and outstanding, pro forma	1,621	
Additional paid-in capital	67,609,832	
Deficit accumulated during the development stage	(4,332,979)	
Total stockholders’ equity	63,278,474	
Total capitalization	$63,278,474	$

(1) A $1.00 increase (decrease) in the assumed public offering price of $24.24 per share (the last reported price of our common stock on The NASDAQ Capital Market on March 14, 2014), would increase (decrease) the pro forma amount of each of cash and cash equivalents and total stockholders' equity by approximately $ million, assuming that the number of shares offered by us, as set forth on the cover of this prospectus, remains the same and after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

The table above does not reflect:

- 1,375,914 shares of common stock issuable upon exercise of stock options outstanding as of December 31, 2013 at a weighted-average exercise price of $1.33 per share;
- 5,000 shares of common stock issuable upon the vesting of an award of restricted common stock outstanding at December 31, 2013; and
- 764,213 shares of common stock issuable upon the exercise of stock options granted after December 31, 2013 at a weighted-average exercise price of $15.92 per share; and
- 2,579,661 shares of common stock reserved as of December 31, 2013 for future issuance under our 2012 Equity Incentive Plan, (which reserve includes 764,213 shares of common stock issuable upon the exercise of stock options granted after December 31, 2013, as described in the bullet above).

DILUTION

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

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common stock after this offering.

As of December 31, 2013, we had a net tangible book value of $63.3 million, or $3.90 per share of common stock. Our historical net tangible book value per share represents total tangible assets less total liabilities divided by the number of shares of common stock outstanding at December 31, 2013.

After giving effect to the sale of shares of common stock in this offering at the assumed public offering price of $4.24 per share (the last reported price of our common stock on The NASDAQ Capital Market on March 14, 2014), and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma net tangible book value as of December 31, 2013 would have been approximately $ million, or approximately $ per share. This amount represents an immediate increase in pro forma net tangible book value of $ per share to our existing stockholders and an immediate dilution in pro forma net tangible book value of approximately $ per share to new investors purchasing shares of common stock in this offering.

Dilution per share to new investors is determined by subtracting pro forma net tangible book value per share after this offering from the public offering price per share paid by new investors. The following table illustrates this dilution:

Offering price per share		$
Historical net tangible book value per share as of December 31, 2013	$	
Pro forma net tangible book value per share as of December 31, 2013		
Increase in pro forma net tangible book value per share attributable to this offering		
Pro forma net tangible book value per share after this offering		
Dilution per share to new investors		$

If the underwriters exercise their option to purchase additional shares of our common stock in full in this offering, the pro forma net tangible book value after the offering would be $ per share, the increase in pro forma net tangible book value per share to existing stockholders would be $ per share and the dilution per share to new investors would be $ per share.

A $1.00 increase (decrease) in the assumed public offering price of $24.24 per share (the last reported price of our common stock on The NASDAQ Capital Market on March 14, 2014), would increase (decrease) the net tangible book value by $ per share (assuming no exercise of the underwriters' option to purchase additional shares) and would increase (decrease) the dilution to new investors by $ per share (assuming no exercise of the underwriters' option to purchase additional shares), assuming the number of common stock offered, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and offering expenses payable by us in connection with this offering.

The following table summarizes on the pro forma basis described above, as of December 31, 2013, the differences between the number of shares purchased from us, the total consideration paid to us in cash and the average price per share paid by our existing stockholders and by new investors in this offering. The calculation below is based on the public offering price of $ per share, before deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

	Shares Purchased		Total Consideration		Average Price Per
	Number	Percent	Amount	Percent	Share
Existing stockholders	16,214,620		$72,483,154		$4.47
New investors					$
Total		100%	$	100%	$

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The foregoing tables and calculations exclude:

- 1,375,914 shares of common stock issuable upon exercise of stock options outstanding as of December 31, 2013 at a weighted-average exercise price of $1.33 per share;
- 5,000 shares of common stock issuable upon the vesting of an award of restricted common stock outstanding at December 31, 2013;
- 764,213 shares of common stock issuable upon the exercise of stock options granted after December 31, 2013 at a weighted-average exercise price of $15.92 per share; and
- 2,579,661 shares of common stock reserved as of December 31, 2013 for future issuance under our 2012 Equity Incentive Plan, (which reserve includes 764,213 shares of common stock issuable upon the exercise of stock options granted after December 31, 2013, as described in the bullet above).

To the extent any of our outstanding options is exercised, there will be further dilution to new investors. If all of such outstanding options had been exercised as of December 31, 2013, the pro forma net tangible book value per share after this offering would be $, and total dilution per share to new investors would be $.

If the underwriters exercise their option to purchase additional shares of our common stock in full:

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

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SELECTED FINANCIAL DATA

You should read the following selected financial data in conjunction with our financial statements and the related notes thereto appearing elsewhere in this prospectus and in the section of this prospectus entitled “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

We have derived the selected financial data from our audited financial statements appearing elsewhere in this prospectus. The historical results are not necessarily indicative of the results to be expected for any future periods.

	For The Period From September 25, 2012 (Inception) Through December 31, 2012	Year Ended December 31, 2013	Cumulative Period From September 25, 2012 (Inception) Through December 31, 2013
Statement of Operations and Comprehensive Loss Data:			
Operating expenses:			
Research and development	$74,772	$3,140,606	$3,215,378
General and administrative	44,864	1,078,687	1,123,551
Total operating expenses	119,636	4,219,293	4,338,929
Loss from operations	(119,636)	(4,219,293)	(4,338,929)
Other income (expense):			
Interest income	25	5,981	6,006
Interest expense	—	(56)	(56)
Total other income, net	25	5,925	5,950
Net loss and comprehensive loss	$(119,611)	$(4,213,368)	$(4,332,979)
Net loss per share attributable to common stockholders, basic and diluted[(1)]	$(0.06)	$(1.13)	
Weighted-average common shares outstanding, basic and diluted[(1)]	2,112,520	3,731,929	

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	As of December 31, 2012	As of December 31, 2013
Balance Sheet Data:		
Cash and cash equivalents	$937,516	$65,328,787
Total assets	938,020	65,488,070
Total liabilities	70,281	2,209,596
Convertible preferred stock	987,050	—
Deficit accumulated during the development stage	(119,611)	(4,332,979)
Total stockholders' equity (deficit)	(119,311)	63,278,474

(1) See Note 11 of the notes to financial statements included elsewhere in this prospectus for an explanation of the method used to calculate the basic and diluted net loss per share attributable to common stockholders and the number of shares used in the computation of the per share amounts.

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

You should read the following discussion and analysis of our financial condition and results of operations together with our financial statements and the related notes and other financial information included elsewhere in this prospectus. Some of the information contained in this discussion and analysis or set forth elsewhere in this prospectus, including information with respect to our plans and strategy for our business, includes forward-looking statements that involve risks and uncertainties. You should review the "Risk Factors" section of this prospectus for a discussion of important factors that could cause our actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

We are a development stage biopharmaceutical company focused on saving and improving the lives of pets. Our mission is to bring to our pets the same kinds of safe and effective medicines that our human family members enjoy. Our core strategy is to identify compounds and targets that have already demonstrated safety and efficacy in humans and to develop therapeutics based on these validated compounds and targets for pets, primarily dogs, cats and horses. We believe this approach will lead to shorter development times and higher approval rates than pursuing new, non-validated compounds and targets. We have three product candidates that are in, or will shortly enter, pivotal field efficacy trials, or pivotal trials, and expect marketing approval of one or more of these product candidates in 2015. In addition, we have seven other product candidates, including several biologics, in various stages of development. We believe there are significant unmet medical needs for pets, and that the pet therapeutics segment of the animal health industry is likely to grow substantially as new therapeutics are identified, developed and marketed specifically for pets.

Our lead product candidates are CereKin for the treatment of osteoarthritis pain and inflammation in dogs, AtoKin for the treatment of atopic dermatitis in dogs and SentiKin for the treatment of post-operative pain in dogs. All of these product candidates, if approved, would be first-in-class drugs in the pet therapeutic market.

In August 2013, we initiated the pivotal trial for CereKin. In February 2014, we initiated the pivotal trial for AtoKin, and we expect to initiate the pivotal trial for SentiKin in March of this year. We have received from the U.S. Food and Drug Administration, or FDA, Protocol Concurrences for CereKin and AtoKin, and expect to receive a similar Protocol Concurrence for SentiKin. A Protocol Concurrence in animal drug development is analogous to a Special Protocol Assessment in human drug development, and means that the FDA fundamentally agrees with the design, execution and analyses proposed in a protocol, and will not later alter its perspectives on these issues unless public or animal health concerns appear that were not recognized at the time of protocol assessment. Assuming positive results from these trials, we intend to submit new animal drug applications technical section, or NADAs, for marketing approval of CereKin, AtoKin, and SentiKin in the United States starting in 2014, and anticipate potential marketing approvals and product launches in the second half of 2015. If approved in the United States, we will potentially make similar regulatory filings for these products with the European Medicines Agency, or EMA.

We are currently developing product candidates for ten additional indications, with the potential to launch two or more products annually for several years starting in the second half of 2015. We plan to commercialize our products in the United States through a direct sales force complemented by selected distributor relationships, and in the EU through distributors and other third parties.

We are a development-stage company with no products approved for marketing and sale, and we have not generated any revenue. We have incurred significant net losses since our inception. We incurred net losses of $119,611 for the period from September 25, 2012 (inception) through December 31, 2012 and $4,213,368 for the year ended December 31, 2013. These losses have resulted principally from costs incurred in connection with investigating and developing our product candidates, research and development activities and general and administrative costs associated with our operations. As of December 31, 2013, we had a deficit accumulated during the development stage of $4,332,979 and cash and cash equivalents of $65,328,787.

For the foreseeable future, we expect to continue to incur losses, which will increase significantly from historical levels as we expand our product development activities, seek regulatory approvals for our product candidates and begin to commercialize them if they are approved by the Center for Veterinary Medicine branch of the U.S. Food and

Drug Administration, or FDA, the U.S. Department of Agriculture, or USDA, or the European Medicines Agency, or EMA. If we are required to further fund our operations, we expect to do so through public or private equity offerings, debt financings, corporate collaborations and licensing arrangements. We cannot assure you that such funds will be available on terms favorable to us, if at all. Arrangements with collaborators or others may require us to relinquish rights to certain of our technologies or product

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candidates. In addition, we may never successfully complete development of, obtain adequate patent protection for, obtain necessary regulatory approval, or achieve commercial viability for any product candidate. If we are not able to raise additional capital on terms acceptable to us, or at all, as and when needed, we may be required to curtail our operations, and we may be unable to continue as a going concern.

Revenue

We do not have any products approved for sale, have not generated any revenue from product sales since our inception and do not expect to generate any material revenue from the sale of products in the near future. If our development efforts result in clinical success and regulatory approval or collaboration agreements with third parties for any of our product candidates, we may generate revenue from those product candidates.

Operating Expenses

The majority of our operating expenses to date have been for the research and development activities related to our lead product candidates.

Research and Development Expense

All costs of research and development are expensed in the period incurred. Research and development costs primarily consist of salaries and related expenses for personnel, stock-based compensation expense, fees paid to consultants, outside service providers, professional services, travel costs and materials used in clinical trials and research and development.

We are currently pursuing ten product candidates for 13 indications. In addition, we recently initiated early-stage programs in immune checkpoint inhibitors and feline erythropoietin. We typically use our employee and infrastructure resources across multiple development programs. We track outsourced development costs by development compound but do not allocate personnel or other internal costs related to development to specific programs or development compounds.

General and Administrative Expense

General and administrative expense consists primarily of personnel costs, including salaries, related benefits and stock-based compensation for employees, consultants and directors. General and administrative expenses also include rent and other facilities costs and professional and consulting fees for legal, accounting, tax services and other general business services.

Income Taxes

As of December 31, 2013, we had net operating loss carryforwards for federal and state income tax purposes of $1,202,135 and $1,202,935, respectively, which will begin to expire in fiscal year 2032. Our management has evaluated the factors bearing upon the realizability of our deferred tax assets, which are comprised principally of net operating loss carryforwards. Our management concluded that, due to the uncertainty of realizing any tax benefits as of December 31, 2013, a valuation allowance was necessary to fully offset our deferred tax assets.

Critical Accounting Policies and Significant Judgments and Estimates

Our management’s discussion and analysis of financial condition and results of operations is based on our financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States, or U.S. GAAP. The preparation of our financial statements and related disclosures requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities, and revenue, costs and expenses and related disclosures during the reporting periods. On an ongoing basis, we evaluate our estimates and judgments, including those described below. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are more fully described in Note 2 of the notes to our financial statements appearing elsewhere in this document, we believe that the estimates and assumptions involved in the following accounting policies may have the greatest potential impact on our financial statements.

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JOBS Act

On April 5, 2012, the Jumpstart Our Business Startups Act, or the JOBS Act, was signed into law. The JOBS Act contains provisions that, among other things, reduce certain reporting requirements for an "emerging growth company." As an "emerging growth company" we are electing not to take advantage of the extended transition period afforded by the JOBS Act for the implementation of new or revised accounting standards, and as a result, we will comply with new or revised accounting standards on the relevant dates on which adoption of such standards is required for non-emerging growth companies. Section 107 of the JOBS Act provides that our decision not to take advantage of the extended transition period is irrevocable.

In addition, we are in the process of evaluating the benefits of relying on the other exemptions and reduced reporting requirements provided by the JOBS Act. Subject to certain conditions set forth in the JOBS Act, if as an "emerging growth company" we choose to rely on such exemptions, we may not be required to, among other things, (i) provide an auditor's attestation report on our system of internal controls over financial reporting pursuant to Section 404, and (ii) comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements (auditor discussion and analysis). These exemptions will apply for a period of five years following the completion of our initial public offering or until we no longer meet the requirements of being an "emerging growth company," whichever is earlier.

Research and Development

As part of the process of preparing our financial statements, we are required to estimate accrued research and development expenses. Examples of estimated accrued expenses include fees paid to vendors and clinical sites in connection with our pivotal studies, to CROs in connection with our toxicology studies, and to contract manufacturers in connection with the production of API and formulated drug.

We review new and open contracts and communicate with applicable internal and vendor personnel to identify services that have been performed on our behalf and estimate the level of service performed and the associated costs incurred for the service when we have not yet been invoiced or otherwise notified of the actual cost for accrued expenses. The majority of our service providers invoice us monthly in arrears for services performed or as milestones are achieved in relation to our contract manufacturers. We make estimates of our accrued expenses as of each balance sheet date.

We base our accrued expenses related to pivotal studies on our estimates of the services received and efforts expended pursuant to contracts with vendors, our internal resources, and payments to clinical sites based on enrollment projections. The financial terms of the vendor agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. Payments under some of these contracts depend on factors such as the successful enrollment of animals and the completion of development milestones. We estimate the time period over which services will be performed and the level of effort to be expended in each period. If the actual timing of the performance of services or the level of effort varies from our estimate, we adjust the related expense accrual accordingly on a prospective basis. If we do not identify costs that have been incurred or if we underestimate or overestimate the level of services performed or the costs of these services, our actual expenses could differ from our estimates. To date, we have not made any material adjustments to our estimates of accrued research and development expenses or the level of services performed in any reporting period presented.

Stock-Based Compensation

We measure stock-based awards granted to employees and directors at fair value on the date of grant and recognize the corresponding compensation expense of the awards, net of estimated forfeitures, over the requisite service periods, which correspond to the vesting periods of the awards. Generally, we issue stock-based awards with only service-based vesting conditions, and record compensation expense for these awards using the straight-line method. Our intention is to grant stock- based awards with exercise prices equivalent to the fair value of our common stock as of the date of grant.

We account for all stock-based awards issued to non-employees based on the fair value of the award on each measurement date. Stock-based awards granted to non-employees are subject to revaluation at each reporting date over their vesting terms or until approved by our board of directors and settled. As a result, the charge to operations

for non-employee awards with vesting conditions or awards which have not been approved and settled is affected each reporting period by changes in the fair value of our common stock.

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The fair value of each stock-based award is estimated using the Black-Scholes option-pricing model. At the time of our historical option grants, we were a private company and lacked company-specific historical and implied stock price volatility information. Therefore, we estimated our expected stock price volatility based on the historical volatility of our publicly-traded peer companies and expect to continue to do so until such time as we have adequate historical data regarding the volatility of our common stock price. The expected terms of our awards have been determined utilizing the "simplified" method, since our historical experience for option grants is not relevant to our expectations for recent grants. The risk-free interest rate is determined by reference to the U.S. Treasury yield curve in effect at the time of grant of the award for time periods approximately equal to the expected term of the award. Expected dividend yield is zero, based on the fact that we have never paid cash dividends and do not expect to pay any cash dividends in the foreseeable future. The assumptions we used to determine the fair value of stock-based compensation in each period were as follows:

	For the Period September 25, 2012 (Inception) Through December 31, 2012	For the Year Ended December 31, 2013
Risk-free interest rate	0.62% - 0.72%	0.61% -3.04%
Expected term (in years)	10.0	5.0 - 10.0
Expected volatility	90%	80%-90%
Expected dividend yield	—	—

The fair value of our common stock underlying stock-based awards has historically been determined by our board of directors, with assistance from management, based upon information available at the time of grant. The intention has been that all awards granted are exercisable at a price per share not less than the per share fair value of our common stock underlying those awards on the date of grant. Given the absence of a public trading market for our common stock, and in accordance with the American Institute of Certified Public Accountants Practice Aid, Valuation of Privately-Held-Company Equity Securities Issued as Compensation, our board of directors has exercised reasonable judgment and considered numerous objective and subjective factors to determine the best estimate of the fair value of our common stock at each grant date. These factors included:

- contemporaneous or retrospective third-party valuations of our company and our securities;
- historical operating and financial performance;
- our stage of development and the material risks related to our business and industry;
- current business conditions and projections;
- risks inherent to the development of our products;
- the progress of our research and development programs, including the status of clinical studies for our products;
- achievement of enterprise milestones;
- our financial condition, including cash on hand;
- our need for future financing to fund our research and development efforts and the commercialization of our product candidates;
- the composition of, and changes to, our management team and board of directors;
- the rights and preferences of our then outstanding Series AA, Series A-1 and Series A-1A convertible preferred stock relative to our common stock;
- the lack of marketability of our common stock;

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- an analysis of mergers and acquisitions, initial public offerings and the market performance of similar companies in the animal health and biotechnology industry sectors;
- the likelihood of achieving a discrete liquidity event, such as a sale or merger, or initial public offering, given prevailing market conditions; and
- external market and economic conditions and other trends and conditions affecting the pharmaceutical, animal health and biotechnology industry sectors.

The following table summarizes stock options granted from our inception through December 31, 2013:

	Number of Common Shares Subject to Options Granted	Per Share Exercise Price of Options	Reassessed Fair Value of Common Stock[1]	Intrinsic Value of Common Share at Grant Date
February 4, 2013	176,525	$0.32	$0.32	—
February 4, 2013	400,000	$0.36	$0.32	—
May 9, 2013	154,793	$0.32	$0.32	—
August 29, 2013	156,488	$0.90 [2]	$2.27	$1.37
August 29, 2013	256,092	$1.37 [3]	$2.27	$0.90
September 12, 2013	29,000	$1.37	$2.27	$0.90
November 11, 2013	183,241	$3.83	$3.83	—
December 11, 2013	54,000	$7.00	$7.00	—

(1) In connection with the preparation of our financial statements for the period from September 25, 2012 (inception) through December 31, 2012 and for the year ended December 31, 2013 and in preparing for our 2013 initial public offering, we reexamined the valuations of our common stock as of each grant date in 2013 due to the acceleration of the timeframe to a potential liquidity event. In connection with our reexamination, we obtained a retrospective independent third-party valuation of our common stock to assist our board of directors in its reassessment.

(2) Reflects options granted to non-employee consultants.

(3) Reflects options granted to directors, officers and other employees at an exercise price of $0.90 per share based on an internal valuation performed by our board of directors. In preparation for the initial filing of the registration statement relating to our initial public offering, we undertook a reassessment of our board of directors' initial valuation, which resulted in a fair value determination of $1.37 per share. Given the grants had only recently been made, with the consent of each employee or director, we adjusted the exercise price of their options to $1.37 per share. The exercise price of options issued to consultants (i.e., those not subject to the provisions of Section 409A of the Internal Revenue Code) was not adjusted.

The following discussion describes our board of directors' analysis of the fair value of our common stock as of each grant date.

Stock-based Awards Granted on February 4, 2013 and May 9, 2013

On February 4, 2013 and May 9, 2013, our board of directors granted options to purchase 576,525 and 154,793 shares, respectively, of our common stock. These grants included an option to purchase 400,000 shares of our common stock granted to our President and Chief Executive Officer at an exercise price of $0.36 per share, which reflected 110% of the board of directors' estimated fair value of our common stock. The remaining options were granted with an exercise price of $0.32 per share. In establishing this exercise price for the February 4, 2013 grants, our board of directors performed an internal valuation of the fair value of our common stock as of that date. In performing this valuation, our board of directors considered various

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traditional valuation techniques. After considering the current stage of our development and other factors including the fact that they were valuing a non-marketable common stock interest in a closely-held company, our board of directors determined that the Backsolve Method and the Asset Approach were likely to provide a reasonable indication of fair value.

The Backsolve Method derives the implied value for one type of equity security from a contemporaneous transaction involving another equity security. The February 4, 2013 valuation was based on the issuance price of the Series AA convertible preferred stock that we sold to investors in November 2012. Given that the sale of the Series AA convertible preferred stock had occurred within close proximity to the February 4, 2013 internal valuation and involved third-party investors, our board of directors believed it was reasonable to use that transaction in establishing the enterprise value of our company. Our board of directors also considered the Asset Approach for determining enterprise value. The Asset Approach considers the book value of equity, plus intangible value created through research and development efforts, as an indication of value. No intangible value was attributed to research and development efforts given our early stage of development and the fact that we had not yet initiated clinical trials or other significant development efforts and did not own any patents. Weightings of 60 % and 40% were applied to the Backsolve Method and the Asset Approach, respectively, to determine our implied enterprise value.

Our board of directors then used the option pricing method, or OPM, to allocate the resulting enterprise value among our respective classes of capital stock to determine the fair value of our common stock. The OPM treats common stock and preferred stock as call options on the total equity value of a company, with exercise prices based on the value thresholds at which the allocation among the various holders of a company's securities changes. Under this method, the common stock has value only if the funds available for distribution to the stockholders exceed the value of the liquidation preference at the time of a liquidity event such as a merger, sale or initial public offering, or IPO, assuming the enterprise has funds available to make a liquidation preference meaningful and collectible by the holders of preferred stock. The common stock is modeled as a call option on the underlying equity value at a predetermined exercise price. In the model, the exercise price is based on a comparison with the total equity value, rather than, as in the case of a regular call option, a comparison with a per share stock price. The OPM uses the Black-Scholes option-pricing model to price the call option. This model defines the securities' fair values as functions of the current fair value of a company and uses assumptions such as the anticipated timing of a potential liquidity event and the estimated volatility of the equity securities.

For purposes of the February 4, 2013 internal valuation, we allocated value to the respective classes of stock using the OPM assuming a weighted expected term to liquidity of five years based on then-current plans and estimates of our board of directors and management regarding a liquidity event, which assumed a high probability of failure. The volatility assumption was based on an analysis of guideline public companies' historical equity volatility for a period of five years, which is commensurate with the term assumption. The guideline public companies used for comparison were selected by us based on the similarity of their industry, market capitalization and stage of development as compared to us. Based on this analysis, we utilized, a volatility assumption of 90%. The risk-free rate was estimated as the five-year U.S. Treasury yield. Since we are a private company and our common stock is illiquid, we applied a discount for lack of marketability of 33% to the common stock value. Based on these factors, our board of directors concluded that our common stock had a fair value of $0.32 per share as of February 4, 2013.

In connection with the May 9, 2013 grant of options, our board of directors reexamined its February 4, 2013 internal valuation. The board of directors noted that, although we had continued to make progress on the development of our potential product candidates, we had achieved no significant milestones since the February 4, 2013 internal valuation. Our board of directors also acknowledged the continued risk inherent in development of our product candidates, our expected need for additional financing and our financial position, including our limited available cash. Based on this analysis, our board of directors determined that no change had occurred in the fair value of our common stock since the February 4, 2013 internal valuation and that the estimated fair value of our common stock also was $0.32 per share as of May 9, 2013.

Stock-based Awards Granted on August 29, 2013 and September 12, 2013

On August 29, 2013 and September 12, 2013, our board of directors granted options to purchase an aggregate of 412,580 and 29,000 shares, respectively, of our common stock initially with an exercise price of $0.90 per share. In

establishing this exercise price for the August 29, 2013 option grants, our board of directors performed an internal valuation of the fair value of our common stock as of that date. Based on this internal valuation, our board of directors determined that the estimated fair value of our common stock as of August 29, 2013 was $0.90 per share. Given the close proximity to the August 29, 2013 grant date and that no significant changes had occurred in the business since that date, our board of directors determined that the estimated fair value of our common stock as of September 12, 2013 also was $0.90 per share.

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Subsequent to the completion of our internal valuation of the fair value of our common stock as of August 29, 2013 and the grant of the August 29, 2013 and September 12, 2013 stock options, our board of directors reconsidered the factors previously used to estimate the fair value of $0.90 per share and determined that a revised valuation should be conducted. In performing this revised valuation certain assumptions used in the initial valuation were changed including revising the volatility assumption from 44% to 70%. To assist in this revision of the August 29, 2013 valuation, our board of directors considered a third-party valuation in determining the value of our common stock as of that date.

In performing the August 29, 2013 revised valuation, the third party valuation considered various traditional valuation techniques and determined that the Backsolve Method was the most appropriate method to provide a reasonable indication of the implied enterprise value of our company. For purposes of the Backsolve Method, our board of directors relied on the issuance price of the Series A-1 and Series A-1A convertible preferred stock that we sold to investors in June through August 2013 at a price of $3.17 per share. Given that the Series A-1 and Series A-1A financings included third-party investors, and given the proximity of the financings to the August 29, 2013 internal valuation, our board of directors believed it was reasonable to use the Series A-1 and Series A-1A financing transactions in establishing the enterprise value of our company.

For purposes of the August 29, 2013 revised valuation, we allocated value among our respective classes of stock using the OPM assuming a time to liquidity of one year based on then-current plans and estimates of our board of directors and management regarding a liquidity event. The decrease in the time to liquidity from five years in the February 4, 2013 valuation to the one year assumption used in our August 29, 2013 valuation was due to several factors that had changed during this timeframe. These factors included better than anticipated progress in our stage of development, improving capital markets, and consideration by our board of directors of accelerating the timeframe for a proposed initial public offering. As a result our board of directors concluded that it was appropriate to use an estimate of a time to liquidity of one year for purposes of the August 29, 2013 revised valuation.

The volatility assumption was based on an analysis of guideline public companies' historical equity volatility for a period of one year, which is commensurate with the term assumption. We selected the guideline public companies based on the similarity of their industry, business model, product offerings and stage of development as compared to us. Based on this analysis, we utilized a volatility assumption of 70%. The risk-free rate was estimated as the one-year U.S. Treasury yield. A discount for lack of marketability of 21% was then applied to the common stock value as we are a private company and our common stock is illiquid.

Based on this analysis, our board of directors determined that the reassessed estimated fair value of our common stock as of August 29, 2013 was $1.37 per share. Given the close proximity to the August 29, 2013 grant date and that no significant changes had occurred in the business since that date, our board of directors determined that the reassessed estimated fair value of our common stock was $1.37 per share as of September 12, 2013.

In connection with the completion of the reassessed valuation the board of directors, with the consent of the affected option holders, approved an increase in the exercise price from $0.90 per share to $1.37 per share for all employee and directors options granted to the option holders on August 29, 2013 and September 12, 2013. The exercise price of options issued to non- employee outside consultants was not adjusted.

Stock-based Awards Granted on November 11, 2013

On November 11, 2013, our board of directors granted options to purchase an aggregate of 183,241 shares of our common stock with an exercise price of $3.83 per share. To assist in establishing the exercise price of these grants, our board of directors considered a third-party valuation of our common stock as of October 21, 2013. Between October 21, 2013 and November 11, 2013, our board of directors noted that we continued to operate our business in the ordinary course, and no events occurred that would cause the fair value of our common stock to increase between these dates. In performing the October 21, 2013 valuation, the third-party valuation considered various traditional valuation techniques. After considering the current stage of our development and other factors, including the fact that they were valuing a non-marketable common stock interest in a closely-held company, the third party valuation determined that the probability-weighted expected return method, or PWERM, was the most appropriate method to provide a reasonable indication of fair value. Under the PWERM, the value of our various equity securities are estimated based upon an analysis of future values for the enterprise assuming various future outcomes.

Shares are valued based on the probability-weighted present value of expected future investment returns, considering each of the possible future outcomes regarding our company, as well as the rights of each class of stock. The future outcomes considered typically include an initial public offering, a sale or merger of our company, any dissolution and our remaining as a

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private company. The future value of the common stock under each outcome is discounted back to the valuation date at an appropriate risk-adjusted discount rate and probability weighted to arrive at an indication of value for our preferred stock and our common stock. A discount for lack of marketability, to account for the illiquidity of our common stock, is applied to the indicated common stock value to determine the fair value of our common stock.

Four types of future event scenarios were considered: an IPO in the near term, a sale or merger of our company in the later term, an IPO in the later term, and a bankruptcy of our company. As of October 21, 2013, management and our board of directors determined that the probability for the IPO in the near term was 60%, the later term sale or merger scenario was 10%, the IPO in the later term was 20% and bankruptcy was 10%. The enterprise value was estimated using the guideline public company method and guideline transaction method under the market approach for the IPO and sale or merger scenarios. For the bankruptcy scenario, a net asset value approach was used.

The multiples of market value of total invested capital or MVIC to cash, book value of invested capital, research and development expenses, and return on investment were selected to be the most appropriate to determine the fair value of our company in the early term IPO scenario. The multiples of MVIC to the projected revenues were considered for the later term IPO scenario as we expect to commercialize our products and start generating revenues. Additionally, the MVIC of the selected comparable companies was considered. The selected multiples were adjusted to reflect the perceived growth and risk of our company relative to those of the guideline companies. The future value was then discounted back to the valuation date based on the appropriate risk adjusted discount rate.

For the later term sale or merger scenario, we utilized the guideline transaction method, which considers pricing multiples from acquisitions of guideline companies. The recent acquisitions of entities in our industry or similar industries were estimated to generate comparable revenue at the time of sale or merger in the later term. The multiples of MVIC to the projected revenues then were applied. The level of MVIC was also considered. The selected multiples were then adjusted to reflect the perceived growth and risk of our company relative to those of the acquisition transactions. The future value was then discounted back to the valuation date based on the appropriate risk adjusted discount rate.

Due to early stage of our company, there is a low probability of successful commercialization of our product candidates and of our becoming profitable. Thus, a probability to the orderly liquidation scenario was incorporated. We believed that our cash and cash equivalents as of September 30, 2013 were sufficient to fund our planned operations for at least the next 12 months, so an end-date of 2015 was selected as the expected term for the bankruptcy scenario. A company's orderly liquidation value is the net amount received if its assets are sold and its liabilities retired. Our intellectual property was considered our primary asset at the point of bankruptcy. The fair value of our intellectual property under the bankruptcy scenario was estimated based on the projected research and development expenses and discounted to present value as of the valuation date.

To derive the value of our common stock for each scenario, the proceeds to the common stockholders were calculated based on the respective preferences and priorities of our preferred and common stock. In our common stock valuations as of October 21, 2013, we applied risk adjusted discount rates of 20% for each of the near-term IPO, later term sale or merger, and later term IPO scenarios. This discount rate was applied for the October 21, 2013 valuation due to the higher likelihood of an early liquidity event, achieved milestones, and lower risk of our business compared to the August 29, 2013 retrospective valuation (see below). A lower discount rate of 16.5% was applied for the bankruptcy risk scenario due to lower volatility associated with the projected expenses that were used to estimate the liquidation value of the asset under a bankruptcy scenario. In assessing the appropriate discount rate for various scenarios, we examined the definitions associated with various stages of development and liquidity event and compared these definitions to the current state of our business.

We utilized the Black-Scholes option pricing model to determine the value of a theoretical put option based on the preliminary value indications, because our common stock lacks liquidity until a liquidity event occurs. The volatility assumption was based on an analysis of guideline public companies' historical equity volatility for a period commensurate with the assumed term used for each of the scenarios. Based on the selected guideline public companies and remaining terms, a volatility of 80% was selected for each of the early term IPO, later term sale or merger, and later IPO scenarios. As of October 21, 2013, discounts for lack of marketability of 12.5%, 28.5%, and 28.5% were applied to the near term IPO, later term sale or merger, and later term IPO scenarios, respectively.

Based on this analysis and a consideration of events and other factors that had occurred between the October 21, 2013 common stock valuation date and the November 11, 2013 grant date, our board of directors determined that the estimated fair value of our common stock as of October 21, 2013 was $3.83 per share.

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Stock-based Awards Granted on December 11, 2013

On December 11, 2013, our board of directors granted options to purchase an aggregate of 54,000 shares of our common stock with an exercise price of $7.00 per share. Our board of directors determined that the estimated fair value of our common stock as of December 11, 2013 was equal to $7.00 per share, the price of our common stock in our 2013 initial public offering.

Retrospective Valuations of Common Stock

In connection with the preparation of our financial statements for the period from September 25, 2012 (inception) through December 31, 2012 and for the year ended December 31, 2013, and in preparing for our 2013 initial public offering, we determined that retrospective valuations of our common stock as of each of our option grant dates were appropriate due to the acceleration of the timeframe to a potential liquidity event. In connection with that reexamination, we obtained retrospective third-party valuations of our common stock to assist our board of directors in its reassessment.

February 4, 2013 and May 9, 2013

In connection with our reexamination, we engaged in a retrospective valuation of the fair value of our common stock for financial reporting purposes as of February 4, 2013 and May 9, 2013. To assist in its reassessment, our board of directors obtained a retrospective third-party valuation of our common stock. In performing this valuation, the third-party valuation considered various traditional valuation techniques. After considering the current stage of our development and other factors, including the fact that they were valuing a non-marketable common stock interest in a closely-held company, the third party valuation determined that the Backsolve Method and the Asset Approach were likely to provide a reasonable indication of fair value. The February 9, 2013 retrospective valuation was based on the price of the Series AA convertible preferred stock that we sold to investors in November 2012. The Asset Approach considered the total invested capital to date in the company. A weighting of 50% was applied to both the Backsolve Method and the Asset Approach to determine the implied enterprise value of our company.

The value was allocated to the respective classes of stock using the OPM assuming a weighted expected term to liquidity of two years based on then-current plans and estimates of the board of directors and management regarding a liquidity event. The volatility assumption was based on an analysis of guideline public companies' historical equity volatility for a period of two years, which is commensurate with the term assumption. The guideline public companies used for comparison were selected based on the similarity of their industry, business model, product offerings and stage of development as compared to us. Based on this analysis we utilized, a volatility assumption of 70%. The risk-free rate was estimated as the then-average yield of U.S. Treasury notes commensurate with the estimated time to liquidity of two years. A discount for lack of marketability of 29% was then applied to the common stock value as we are a private company and our common stock is illiquid. Based on this analysis, our board of directors concluded that the fair value of our common stock as of February 4, 2013 was $0.22 per share.

Our board of directors considered the results of the third-party valuation, which was lower than the previously estimated fair value of $0.32 per share of common stock derived from the board of directors' February 4, 2013 internal valuation. As a result, our board determined that no change to the fair value of our common stock was necessary for financial reporting purposes for the February 4, 2013 and May 9, 2013 option grants. Our board of directors also considered the factors that contributed to the different fair values in each valuation, the most significant of which was the assumption related to the time to a liquidity event of five years in the February 4, 2013 internal valuation and two years in the retrospective valuation.

August 29, 2013 and September 12, 2013

In connection with the preparation of our financial statements, our board of directors obtained a retrospective third-party valuation of our common stock as of August 29, 2013. The third-party valuation considered various traditional valuation techniques. After considering the current stage of our development and the closely-held nature of our company, the third party determined that the PWERM was the most appropriate method to provide a reasonable indication of fair value.

As of August 29, 2013, four types of future event scenarios were considered: an IPO in the near term; a sale or merger in the later term; an IPO in the later term; and a bankruptcy. As of August 29, 2013, management and our board of directors determined that the probability for the IPO in the near term was 30%, for the later term sale or merger

scenario 25%, the IPO in the later term 25% and 20% for a bankruptcy.

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The enterprise value of our company was estimated using the guideline public company method and guideline transaction method under the market approach for the IPO and sale or merger scenarios. The net asset value approach was used for the bankruptcy scenario.

The IPO scenario is based on the guideline company method. Appropriate guideline companies, were considered to be publicly traded biotechnology companies that were in the early development stage. The pool of potential guideline companies was then narrowed based on the companies' business descriptions, markets served, stages of growth, business model, pipeline of drugs, profitability and revenue. The multiples of MVIC to cash, book value of invested capital, research and development expenses, and return on investment were concluded to be the most applicable to determine the fair value of our company under the early term IPO scenario. The multiples of MVIC to the projected revenues were considered for the later term IPO scenario as we expect to commercialize our products and begin to generate revenue. The value of invested capital of the selected guideline public companies was also considered. The selected multiples were adjusted to reflect the perceived growth and risk of our company relative to those of the guideline public companies. The future value was then present valued to the valuation date based on the appropriate risk adjusted discount rate. For the later term sale or merger scenario the Guideline Transaction Method was applied to consider pricing multiples from acquisitions of guideline companies. Recent acquisitions of entities in the same or similar industries to our company were estimated to generate comparable revenue at the time of sale or merger in the later term. The multiples of MVIC to the projected revenues were applied. The level of MVIC was also considered. The selected multiples were then adjusted to reflect the perceived growth and risk of the Company relative to those of the guideline transactions. The future value was then present valued to the valuation date based on the appropriate risk adjusted discount rate.

Due to the early stage of our company, there is a low probability of successful commercialization of our product candidates and of becoming profitable, so a probability to the orderly liquidation scenario was incorporated. A company's orderly liquidation value is the net amount received if its assets are sold and its liabilities retired. Our primary asset would be our intellectual property, the fair value of which was estimated based on the projected research and development expenses prior to bankruptcy, and discounted to present value as of the valuation date.

To derive the value of our common stock for each scenario, the proceeds to the common stock holders were calculated based on the preferences and priorities of our preferred and common stock. For purposes of the August 29, 2013 valuation, a risk adjusted discount rate of 35% were applied to each of the near-term IPO, later term sale or merger, and later term IPO scenarios. A lower discount rate of 16.5% was applied for the bankruptcy risk scenario due to a lower volatility associated with the projected expenses used to estimate the liquidation value of our assets under a bankruptcy scenario. In assessing the appropriate discount rate for various scenarios, we examined the definitions associated with various stages of development and liquidity event and compared these definitions to the current state of our business.

We utilized the Black-Scholes Option Pricing Model to determine the value of a theoretical put option based on the preliminary value indications, because our common stock lacks liquidity until a liquidity event occurs. The volatility assumption was based on an analysis of the guideline public companies' historical equity volatility for a period commensurate with the assumed term used for each of the scenarios.

Based on the selected guideline companies and the remaining terms to each event, we selected volatilities of 85% for the early term IPO and 80% for each of the later term sale or merger and later term IPO scenarios. Discounts for lack of marketability of 15%, 29.5%, and 29.5% were applied to the near term IPO, later term sale or merger, and later term IPO scenarios, respectively.

Based on this analysis, our board of directors determined that the estimated fair value of our common stock as of August 29, 2013 was $2.27 per share. Given, for financial accounting purposes, the close proximity to the August 29, 2013 grant date and our board of directors' conclusion that no significant changes had occurred in our business since that date, our board of directors determined that the estimated fair value of our common stock was $2.27 per share as of September 12, 2013 for financial accounting purposes.

Results of Operations

Our results of operations from September 25, 2012 (inception) through December 31, 2012, for the year ended December 31, 2013, and for the cumulative period from September 25, 2012 (inception) through December 31, 2013

are as follows:

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	For The Period From September 25, 2012 (Inception) Through December 31, 2012	Year Ended December 31, 2013	Cumulative Period From September 25, 2012 (Inception) Through December 31, 2013
Operating expenses:			
Research and development	$74,772	$3,140,606	$3,215,378
General and administrative	44,864	1,078,687	1,123,551
Total operating expenses	119,636	4,219,293	4,338,929
Loss from operations	(119,636)	(4,219,293)	(4,338,929)
Total other income, net	25	5,925	5,950
Net loss and comprehensive loss	$(119,611)	$(4,213,368)	$(4,332,979)
Net loss per share attributable to common stockholders, basic and diluted	$(0.06)	$(1.13)	
Weighted-average common shares outstanding, basic and diluted	2,112,520	3,731,929	

Revenue

We did not generate any revenue during the period from September 25, 2012 (inception) through December 31, 2012 or for the year ended December 31, 2013.

Research and Development Expense

Research and development expense for the period from September 25, 2012 (inception) through December 31, 2012 was $74,772. Research and development expense for the year ended December 31, 2013 was $3,140,606. The composition of these expenses was as follows:

	For the Period from September 25, 2012 (Inception) Through December 31, 2012	Year Ended December 31, 2013
Payroll and related	$51,417	$950,606
Consulting	12,963	1,005,767
Clinical trial costs	4,427	1,058,095
Other	5,965	126,138
	$74,772	$3,140,606

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Payroll and related costs, as well as consulting costs, for the period ended December 31, 2012 were primarily attributable to recruiting and building our research and development team. During this period, we relied extensively on consultants as we began to build our internal research and development team. There were no outsourced research and development expenses for the period from September 25, 2012 (inception) to December 31, 2012 related to our CereKin, AtoKin or SentiKin product development programs. During this period, we also filed three INADs, including the INADs for CereKin and AtoKin. Included in research and development expense for the period ended December 31, 2012 was $11,340 of stock-based compensation expense.

During the year ended December 31, 2013, research and development expenses primarily related to advancing the development of our lead product candidates. During this period we developed the protocols for CereKin and AtoKin, received Protocol Concurrences from the FDA for both compounds and increased our staffing to support the planning for initiation of the pivotal trials of CereKin and AtoKin. Included in research and development expenses for the year ended December 31, 2013 was $826,499 of stock-based compensation expense. Outsourced research and development expenses related to our CereKin, AtoKin and SentiKin product development programs for the year ended December 31, 2013 were $1,264,336, $192,000 and $22,545, respectively.

We expect research and development expense to increase significantly for the foreseeable future as we continue to increase our headcount, commence pivotal studies and further develop our compounds. Due to the inherently unpredictable nature of our development, we cannot reasonably estimate or predict the nature, specific timing or estimated costs of the efforts that will be necessary to complete the development of our product candidates.

General and Administrative Expense

General and administrative expense for the period from September 25, 2012 (inception) through December 31, 2012 was $44,864. General and administrative expense for the year ended December 31, 2013 was $1,078,687. The composition of general and administrative expense was as follows:

	For the Period from September 25, 2012 (Inception) Through December 31, 2012	Year Ended December 31, 2013
Payroll and related	$36,406	$537,967
Consulting and legal fees	351	277,594
Regulatory fees	—	87,700
Other	8,107	175,426
	$44,864	$1,078,687

For the period ended December 31, 2012, general and administrative expense related primarily to our corporate formation and initial financing activities.

For the year ended December 31, 2013, general and administrative expense related primarily to additional financing activities, salaries, rent and other facilities costs, professional and consulting fees for legal, accounting and tax services and other general business services. We expect general and administrative expense to increase significantly as we begin operating as a public company and continue to build our corporate infrastructure. Included in general and administrative expense for the year ended December 31, 2013 was $95,282 of stock-based compensation expense.

Liquidity and Capital Resources

We have incurred losses and negative cash flows from operations and have not generated any revenue since our inception in September 2012 through December 31, 2013. As of December 31, 2013, we had a deficit accumulated during the development stage of $4,332,979. During the year ended December 31, 2013, we raised a total of $65,979,246, net of transaction expenses, primarily in our initial public offering and through the private sale of convertible preferred stock. At December 31, 2013, we had a cash and cash equivalents balance of $65,328,787. We believe that our cash and cash equivalents

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balance as of December 31, 2013 are sufficient to fund our planned operations for at least the next 24 months.

Cash Flows

The following table shows a summary of our cash flows for the periods set forth below:

	For the Period from September 25, 2012 (Inception) Through December 31, 2012	Year Ended December 31, 2013
Cash flows used in operating activities	$(62,784)	$(1,573,152)
Cash flows used in investing activities	$—	$(14,823)
Cash flows provided by financing activities	$1,000,300	$65,979,246

Net cash used in operating activities

During the period from September 25, 2012 (inception) through December 31, 2012, net cash used in operating activities was $62,784. Net cash used in operating activities primarily resulted from our net loss of $119,611, partially offset by non-cash, stock-based compensation of $11,340 and changes in operating assets and liabilities of $45,487.

During the year ended December 31, 2013, net cash used in operating activities was $1,573,152. Net cash used in operating activities primarily resulted from our net loss of $4,213,368, partially offset by non-cash, stock-based compensation of $921,781 and changes in operating assets and liabilities of $1,715,306.

Net cash used in investing activities

During the period from September 25, 2012 (inception) through December 31, 2012, we did not have any cash provided by or used in investing activities.

During the year ended December 31, 2013, net cash used in investing activities was $14,823, which related to purchases of property and equipment.

Net cash provided by financing activities

During the period from September 25, 2012 (inception) through December 31, 2012, net cash provided by financing activities was $1,000,300 and primarily consisted of the gross proceeds of $990,000 from the private placement of our Series AA convertible preferred stock and proceeds of a $10,000 note payable to our co-founder and current Chief Executive Officer.

During the year ended December 31, 2013, net cash provided by financing activities was $65,979,246, which consisted primarily of the net proceeds of $54,871,471 from our initial public offering in December 2013 and proceeds of $11,096,902 from private placements of our Series A-1 and Series A-1A convertible preferred stock.

Future Funding Requirements

We anticipate that we will continue to incur losses for the next several years due to expenses relating to:

- pivotal trials of our product candidates;
- toxicology studies for our product candidates;
- biologics manufacturing; and
- commercialization of one or more of our product candidates, if approved.

We believe our existing cash and cash equivalents, together with the net proceeds of this offering, will be sufficient to fund our operating plan through the anticipated approval and commercial launch of one or more of our lead product candidates,

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CereKin, AtoKin and SentiKin. However, our operating plan may change as a result of many factors currently unknown to us, and we may decide to seek additional funds, through public or private equity or debt financings or other sources, such as strategic collaborations. Such financing may result in dilution to stockholders, imposition of debt covenants and repayment obligations or other restrictions that may affect our business. In addition, we may seek additional capital due to favorable market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans.

Our future capital requirements depend on many factors, including, but not limited to:

- the scope, progress, results and costs of researching and developing our current or future product candidates;
- the timing of, and the costs involved in, obtaining regulatory approvals for any of our current or future product candidates;
- the number and characteristics of the product candidates we pursue;
- the cost of manufacturing our current and future product candidates and any products we successfully commercialize;
- the cost of commercialization activities if any of our current or future product candidates are approved for sale, including marketing, sales and distribution costs;
- the expenses needed to attract and retain skilled personnel;
- the costs associated with being a public company;
- our ability to establish and maintain strategic collaborations, licensing or other arrangements and the financial terms of such agreements; and
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing possible patent claims, including litigation costs and the outcome of any such litigation.

Off-Balance Sheet Arrangements

Since inception, we have not engaged in the use of any off-balance sheet arrangements, such as structured finance entities, special purpose entities or variable interest entities.

Recently Issued Accounting Pronouncements

Comprehensive Income - Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income: In February 2013, the FASB issued guidance requiring entities to report the effect of significant reclassifications out of accumulated other comprehensive income on the respective line items in net income if the amount is required to be reclassified under U.S. GAAP. For amounts that are not required to be reclassified in their entirety to net income, an entity is required to cross-reference to other disclosures that provide additional details about those amounts. This guidance revised the previous guidance issued in June 2011 that was deferred. This guidance was applied by us for all interim and annual periods beginning on January 1, 2013. The adoption of this guidance did not have a material impact on our financial condition, results of operations or cash flows.

Quantitative and Qualitative Disclosures about Market Risk

Interest Rate Fluctuation Risk

Our cash and cash equivalents as of December 31, 2013 were held in a cash account and money market account. Our primary exposure to market risk for our cash is interest income sensitivity, which is affected by changes in the general level of U.S. interest rates. However, because our cash and cash equivalents are held in bank accounts, a sudden change in the interest rates associated with our cash and cash equivalents balances would not be expected to have a material impact on our financial condition or results of operations.

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We do not have any foreign currency or derivative financial instruments.

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BUSINESS

Overview

We are a development stage biopharmaceutical company focused on saving and improving the lives of pets. Our mission is to bring to our pets the same kinds of safe and effective medicines that our human family members enjoy. Our core strategy is to identify compounds and targets that have already demonstrated safety and efficacy in humans and to develop therapeutics based on these validated compounds and targets for pets, primarily dogs, cats and horses. We believe this approach will lead to shorter development times and higher approval rates than pursuing new, non-validated compounds and targets. We have three product candidates that are in, or will shortly enter, pivotal field efficacy trials, or pivotal trials, and expect approval of one or more of these product candidates in 2015. In addition, we have seven other product candidates, including several biologics, in various stages of development. We believe there are significant unmet medical needs for pets, and that the pet therapeutics segment of the animal health industry is likely to grow substantially as new therapeutics are identified, developed and marketed specifically for pets.

Our lead product candidates are CereKin for the treatment of osteoarthritis pain and inflammation in dogs, AtoKin for the treatment of atopic dermatitis in dogs and SentiKin for the treatment of post-operative pain in dogs. All of these product candidates, if approved, would be first-in-class drugs in the pet therapeutic market.

In August 2013, we initiated the pivotal trial for CereKin. In February 2014, we initiated the pivotal trial for AtoKin, and we expect to initiate the pivotal trial for SentiKin in March 2014. Assuming positive results from these trials, we intend to submit New Animal Drug Applications, or NADAs, for marketing approval of CereKin, AtoKin and SentiKin in the United States starting in 2014, and anticipate potential marketing approvals and product launches in the second half of 2015. If approved in the United States, we may make similar regulatory filings for these products with the European Medicines Agency, or EMA, for marketing approval in the European Union, or EU.

We are currently developing product candidates for ten additional indications, with the potential to launch two or more products annually for several years starting in the second half of 2015. We plan to commercialize our products in the United States through a direct sales force complemented by selected distributor relationships, and in the EU through distributors and other third parties. Because we seek to identify product candidates that are not protected by third-party patents, we typically do not need to obtain licenses or make any upfront, milestone or royalty payments in connection with our product candidates.

Relative to human drug development, the development of pet therapeutics is generally faster, more predictable and less expensive, since it requires fewer clinical studies involving fewer subjects and can be conducted directly in the target species. For example, studies that are typically required for approval of human drugs such as QTc studies, which detect cardiac irregularities, elderly patient studies, renal impairment studies, hepatic impairment studies or costly, long-term genotoxicity studies are not required for pet therapeutics. Based on our progress since inception in September 2012, we believe we can develop pet therapeutics from the Investigational New Animal Drug, or INAD, filing with the FDA to marketing approval in three to five years at a cost of approximately $3 million to $5 million per product candidate. The lower cost associated with the development of pet therapeutics permits us to pursue multiple product candidates simultaneously and avoid the binary outcome associated with the development of a single lead therapy by some human biotechnology companies. Because we typically develop drugs that have successfully been developed for humans, the active ingredients in many of our small molecule product candidates also have established chemistry, manufacturing and controls, or CMC, which are important gating factors in the regulatory approval process. As a result, we usually do not need to invest in active pharmaceutical ingredient, or API, process development to comply with good manufacturing practices, or GMP, standards for our small molecule product candidates, and we can often advance our programs more rapidly than if we were pursuing new chemical entities.

U.S. consumers spent an estimated $55.5 billion on their pets in 2013, according to the American Pet Products Association, or APPA, an increase of 44% from 2006. We believe there are many unmet or underserved medical needs and that the pet therapeutics portion of the market can grow significantly as new, safe and effective therapeutics are identified, developed and marketed. As an example, the market for therapeutics treating osteoarthritis for dogs has grown from less than $10 million to over $450 million since 1997, driven by the introduction of non-steroidal anti-inflammatory drugs, or NSAIDs, such as Rimadyl approved for animals. We expect continued market growth as new pet therapeutics are developed and owners grow more familiar with the treatment of pets with such therapeutics.

This continues a trend reported by the American Pet Products Association, or APPA, which found approximately 78% of U.S. dog owners treated their dogs with medications in 2010, as compared to 50% in 1998.

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Our management team's extensive experience in both human and animal drug development has enabled us to quickly establish our product pipeline, obtain Protocol Concurrences from the FDA for CereKin, AtoKin, commence the pivotal trials of CereKin and AtoKin, and prepare to initial pivotal trial enrollment in SentiKin. Our management team also has extensive experience in biologics, including in the development of antibodies such as Lucentis, Tysabri, Xolair, and Rituxan.

Richard Chin, M.D., our co-founder and Chief Executive Officer, was previously Head of Clinical Research for the Biotherapeutics Unit at Genentech, Inc., where he oversaw Phase I through Phase IV clinical programs for all products except oncology. Kevin Schultz, D.V.M., Ph.D., our Chief Scientific Officer, was one of the founding team members of Merial Limited, a leading veterinary medicine company, and served as Merial's Chief Scientific Officer, where he oversaw development of numerous animal therapeutics and vaccines, as well as Frontline Plus, one of the best-selling pet therapeutic products in history. Stephen Sundlof, D.V.M., Ph.D., our Senior Vice President of Regulatory Affairs, was the Director of the FDA's Center for Veterinary Medicine, or CVM, from 1994 to 2008, where he oversaw all veterinary products regulated by the FDA. Denise Bevers, our co-founder and Chief Operating Officer, has over 20 years of experience in clinical operations and medical affairs.

Product Pipeline

Our current product pipeline consists of small molecules and biologics for a range of indications in dogs, cats and horses. Small molecules are generally chemical compounds administered orally and biologics are generally proteins and vaccines administered by injection. In December 2012, we filed INADs for CereKin for osteoarthritis in dogs and for AtoKin for atopic dermatitis in dogs. We filed INADs for SentiKin for post-operative pain in dogs and for KIND-006 for gastrointestinal disease in cats in March 2013, and in June 2013, we filed an INAD for KIND-007 for cancer and immune diseases in dogs. Although there is no equivalent of an INAD for biologic products, we have requested that the USDA assign a reviewer for several of our biologic product candidates to begin the USDA review process.

The USDA's Center for Veterinary Biologics and the FDA's Center for Veterinary Medicine have a memorandum of understanding under which animal products are to be regulated by the USDA as biologics, if they are intended for use to diagnose, cure, mitigate, treat, or prevent disease in animals and they work primarily through an immune process, or by the FDA as drugs, if they are intended for use in the diagnosis, cure, mitigation, treatment, or prevention of animal disease if the primary mechanism of action is not immunological or is undefined. Although we believe that most of our current animal biologics will be regulated by the USDA based on their mechanisms of action, it is possible that the agencies may determine that one or more of our animal biologics will be regulated by the FDA instead of the USDA.

The following table illustrates ten product candidates that we are developing for 13 indications. References in the table to "PLA" mean an Application for United States Veterinary Biological Product License with the USDA, also called a Product License Agreement.

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In addition to our product candidates currently in development, we have identified over 30 potential small molecule and biologic therapeutics that are in the pre-INAD early stage, including molecules targeting cancer metabolism, immune checkpoint inhibitors, and feline erythropoietin.

Product Selection and Development

We utilize a rigorous screening and review process to identify compounds and targets that have demonstrated safety and efficacy in humans. Where possible, we try to identify compounds that have already demonstrated efficacy in the target companion animal species and that address unmet medical needs in veterinary medicine. In some cases, we identify a chemical or functional equivalent of a validated human drug that addresses the same biological target or pathway. We review these compounds and targets with a view to differentiating them from existing treatments, including human products used extra-label in animals, based on ease of administration, method of delivery, dosing regimen, and other similar factors. We also try to identify product candidates that are free from any intellectual property rights of others, including drugs or dosage forms that are not marketed in the United States, or marketed only in a few countries, to minimize the potential for competition from human generics. For example, previously approved drugs that are found to have an idiosyncratic side effect in humans fit well with our target criteria since such drugs are often no longer available for human use and could potentially be well suited for companion animals. We then develop these compounds for dogs, cats or horses for regulatory approval in the United States and the EU. As our product candidates are generally not protected by third-party patents, we typically do not need to obtain a license or make any upfront, milestone or royalty payments in connection with our product candidates.

For our small molecule product candidates, we customize the dosage, formulation, flavor and other characteristics of the product candidate before initiating pivotal clinical trials. In some cases, we reformulate the drug to have a longer half-life or into a form that is easier to administer for certain species, such as our chewable, beef-flavored formulation for dogs. Pet therapeutics that are palatable to animals can command premium price and significant market share, as evidenced by the still-dominant position of Rimadyl compared to generic carprofen. Usually, the active ingredients in our small molecule product candidates are already available as a GMP-quality API. We target small molecule product candidates for which the active ingredient has not been previously approved for use in animals. If we are the first to gain approval for the use of such active

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ingredient in animals, our small molecule product will enjoy five years of marketing exclusivity in the United States and ten years in the EU for the approved indication. Where appropriate, we also will seek patents and trademarks to provide added intellectual property protection in addition to the five-year or ten-year marketing exclusivity. In addition, we plan to introduce improved formulations, combination products and other product improvements in order to extend the lifecycle of our products.

Our biologic product candidates are based on therapies and targets for which products have been successfully commercialized for humans. Human antibody therapies are expensive and are often ineffective in other species since they are usually immunogenic, or recognized as foreign bodies and rejected by the immune systems of dogs, cats, horses and other animals. We identify or create biologics, including antibodies that are fully or mostly canine, feline, or equine. As an example, we have created new biologics for dogs that target the canine counterparts of the human targets of Enbrel and Orencia. We are currently undertaking the development of manufacturing processes for our initial biologic product candidates. We generally intend to seek composition-of-matter patents and other patents for these new chemical entities. Our biologic products, if approved, will not face generic competition or such generic competition may be significantly delayed, because there is presently no biosimilar pathway for veterinary biologics in the United States or in the EU. Our management team has extensive experience in human antibody therapies and in the development of biologics products, including Lucentis, Tysabri, and Xolair.

Business Strategy

Key elements of our business strategy are as follows:

Advance CereKin, AtoKin, SentiKin and our other product candidates through development and regulatory approval

We have initiated enrollment in the pivotal trials of CereKin and AtoKin, and intend to initiate the pivotal trial for SentiKin in March 2014. The trials are being, or will be, conducted in parallel with the required toxicology, or target animal safety, studies and CMC activities. If these trials and other development activities are successful, we expect to submit NADAs for CereKin starting in mid-2014, and for AtoKin and SentiKin in late 2014, with potential marketing approvals for the first of these products starting in mid-2015. If approved in the United States, we will consider making similar regulatory filings for these products with the EMA.

In addition to CereKin, AtoKin and SentiKin, we are developing product candidates for ten additional indications in dogs and cats. We intend to advance these products into pivotal trials, which, if successful, and completed on time as currently planned, would enable us to launch two or more approved products annually for several years beginning in the second half of 2015.

Continue to focus on cost-effective research and development execution

In order to execute our studies rapidly and efficiently, we have built an experienced team drawn from both the veterinary and human pharmaceutical industries. We rely primarily on our own personnel or independent contractors, rather than on contract research organizations, or CROs, for many business-critical tasks, including protocol designs, regulatory interactions, statistics, data management and clinical operations. By doing so, we believe we can maintain higher quality, achieve lower costs and seek regulatory approval more quickly. Since our inception in September 2012, we have been able to, among other things:

- identify 10 product candidates that we are developing for 13 indications;
- obtain Protocol Concurrences with the FDA for two of our lead product candidates;
- commence pivotal trial enrollment for CereKin and AtoKin;
- prepare to initiate pivotal trial enrollment for SentiKin in March 2014; and
- create new biologics for dogs that target the canine counterpart targets of Enbrel and Orencia.

Leverage our antibody and biologics experience

Members of our team have extensive experience developing biologics such as antibodies. We are leveraging their expertise to identify and develop antibody-based therapies for pets based on approved human therapies, and to identify appropriate manufacturing technologies for these product candidates.

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Leverage our current product pipeline in additional animal species

We intend to develop our product candidates primarily for approval in one or more indications in dogs, cats and horses. For example, we are initially developing CereKin for the treatment of osteoarthritis pain in dogs, but have also filed an INAD and conducted a pharmacokinetic study for its use in horses. We are also developing SentiKin for post-operative pain in horses. We believe the market for horse therapeutics may be particularly attractive, as it can be targeted by a limited sales force and has potentially less price sensitivity than therapeutic treatments for dogs and cats, because horse owners are willing to spend more on treatments for these more expensive companion animals. As an example, a one-month supply of omeprazole for a horse can cost several thousand dollars. We may consider the development of our current or future product candidates for additional species in the future, but our pipeline currently is focused on dogs, cats and horses only.

Expand our pipeline with additional product candidates

We actively seek to identify small molecule and biologic therapeutics, or in some cases therapeutic targets, that have demonstrated safety and efficacy in humans, focusing on small molecules that are already marketed for humans or biologics for which there are no animal counterparts, and that are free from intellectual property rights of others in the United States. These therapeutics typically have been tested in animals such as dogs as part of standard toxicology studies in human clinical development. We have identified over 30 additional product candidates in the pre-INAD stage that we may potentially pursue. We will seek to protect our product candidates through a combination of regulatory exclusivity periods in the United States and in the EU, patents, know-how and other customary means.

Commercialize our products with our own direct sales force in the United States and with distributors in other regions

In conjunction with FDA approval of one or more of our lead product candidates, if approved, we intend to establish a direct sales organization eventually numbering approximately 50 sales representatives to market our products directly to veterinarians in the United States. We believe such a sales force will be sufficient to reach the top quartile of the highest prescribing veterinary clinics in the United States. By adding complementary distributor relationships, we believe we can expand our commercial reach to a majority of all veterinarians in the United States. We also intend to establish collaborations with distributors to commercialize any of our products that may be approved with the EMA.

Pet Therapeutics Market

Overview

U.S. consumers spent an estimated $55.5 billion on their pets in 2013, according to the American Pet Products Association, or APPA, an increase of 44% from 2006. This figure includes approximately $3.5 billion spent on flea and tick treatments, $1.5 billion spent on knee-joint surgeries in dogs and $370 million spent on pet Halloween costumes.

The veterinary care segment has been among the fastest growing segments of the overall U.S. pet market. This segment accounted for an estimated $13.7 billion in 2012, an increase of 48% from 2006. In 2011, approximately $4.3 billion was spent on parasiticides and vaccines and approximately $2.4 billion was spent on pet therapeutics, our target segment. With approximately 83 million dogs and 96 million cats in the United States, this represents average annual spending on pet therapeutics of less than $14 per pet. This compares to approximately $1,700 that veterinarians estimate their clients would be willing to pay before refusing or stopping treatment for their pets, according to a 2012 DVM Newsmagazine State of the Profession survey.

We believe several factors will contribute to an increase in spending on pet therapeutics. Pets are generally living longer, with the average lifespan for dogs increasing by half a year to 11 years between 2002 and 2012 according to a study by Banfield Pet Hospital. As a result, pets are increasingly exhibiting many of the same diseases associated with aging in humans. The incidence of osteoarthritis in dogs, for example, has increased by 38% since 2007 according to the same study. Among pet owners, there is growing familiarity in treating these pet diseases with medications. According to the APPA, approximately 78% of U.S. dog owners treated their dogs with medications in 2010, as compared to 50% in 1998. In a 2010 poll by Associated Press, 35% of pet owners are willing to spend $2,000 to treat their pet for a serious medical condition. We expect pet owners to spend more on their pets' health and welfare as new therapeutics are developed specifically for pets, particularly as 91% of pet owners considered their pet to be a member of their family, according to a 2011 survey by the Harris Poll of Harris Interactive.

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Pet Therapeutics Market Dynamics

The respective businesses of developing and commercializing therapeutics for pets and for humans share a number of characteristics, including the need to demonstrate safety and efficacy in clinical trials, obtain FDA or other regulatory approval for marketing, manufacture the therapeutics in facilities compliant with GMP requirements and market the therapeutics only for their intended indication based on claims permitted in the product label, and not for other uses, which is referred to as extra-label use.

Despite their similarities, there are a number of important differences between the pet therapeutics and human therapeutics businesses, including:

- Faster, less expensive and more predictable development. The development of pet therapeutics requires fewer clinical studies in fewer subject animals than the development of human therapeutics and, unlike human therapeutics, is conducted directly in the target animals. We believe our strategy of selecting compounds and targets with demonstrated efficacy and safety in humans enhances the predictability of results and probability of success of our pivotal trials relative to compounds and targets that have not been previously validated.
- Role and incentives for veterinary practices. In the United States, veterinarians generally serve the dual role of doctor and pharmacist, and pet owners typically purchase medicines directly from their veterinarians. Therapeutics specifically developed for pets enable veterinarians to provide potentially superior treatment options, while also increasing revenue from the sale of these therapeutics.
- Primarily private-pay nature of veterinary market. Pet owners in the United States generally pay for pet therapeutics out-of-pocket, and less than 5% of pet owners currently purchase pet insurance. As a result, pet owners must make decisions primarily on their veterinarians' advice regarding available treatment options, rather than on the treatment options' eligibility for reimbursement by insurance companies or government payers. We believe this results in less pricing pressure than in human healthcare, although the limited adoption of insurance may also reduce pet owners' ability to pay for therapeutics recommended by their veterinarians.
- Less generic competition and strong brand loyalty. There is less generic competition in the pet therapeutics industry than in the human healthcare industry. Approximately 14% of veterinary drugs face generic competition, and the percentage of generic prescriptions in the veterinary space is only 7% as compared to approximately 81% for human drugs. For example, Rimadyl, the leading U.S. pet NSAID, lost regulatory exclusivity in 2001, but its sales continued to grow since generic competition was introduced in 2005. We believe that stronger brand loyalty and lack of mandatory generic drug substitution, as in human pharmaceuticals, partially explains the low penetration of generics in veterinary medicine.

Unmet Medical Needs in the Pet Therapeutics Market

Despite the growing market for pet therapeutics, there are relatively few treatment options approved for use in pets as compared to human therapeutic treatments. As a result, veterinarians often must resort to prescribing products approved for use in humans but not approved, formulated or even formally studied in pets. Veterinarians must then rely upon trial and error or untested rules of thumb to assess the proper dosage needed to be effective in the particular species without undue risk of side effects. The veterinarian must also find a way to administer the human product in animals and determine the amount actually dosed, which are important and potentially overlooked practical considerations in the treatment of pets.

Even in disease categories with approved pet therapeutics, significant unmet medical needs remain. For example, the NSAID class of products, commonly prescribed for pain, have potentially serious side effects in dogs that limit their long-term use and may require ongoing monitoring by veterinarians. The treatment of pain in cats is further complicated as a result of their differing biology, which makes NSAIDs toxic.

Animal health companies have been relatively slow to develop new therapeutics for pets, and have tended to focus primarily on the larger market for the treatment of livestock and other farm animals. On average, only approximately 11 NADAs were filed annually for animal therapeutics, compared to an average of approximately 123 NDAs filed annually for human therapeutics, over the five-year periods ended June 30, 2012 and December 31, 2011, respectively. In 2012, human pharmaceutical companies received FDA approval for 39 new drugs, while pet therapeutics companies received FDA approval for only 11 new drugs, six of which were for use in dogs or cats. In the EU, human pharmaceutical companies received EMA approval for 52 drugs in 2012, compared to only three

approvals for pet therapeutics companies.

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We believe that therapeutics specifically developed for pets can extend and improve the quality of the lives of pets, help veterinarians achieve improved medical outcomes and make the process of administering therapeutics to pets much more convenient. Advances in human medicines have created new therapeutics for managing chronic diseases associated with aging, such as osteoarthritis, cancer, diabetes and cardiovascular diseases. Pets often suffer from the same disease as humans, including diabetes, arthritis, cancer, Alzheimer's disease (canine cognitive dysfunction), lupus, Crohn's disease, Lou Gehrig's disease (degenerative myelopathy) and others. In most cases, the biologies of the diseases in pets are very similar to those in humans. Because of the similarity of the diseases, many human drugs, when formulated properly and administered in proper doses, are effective in pets. However, most human drugs are neither formulated nor approved for animals.

Products in Development

CereKin

Overview

CereKin is an oral, chewable, beef-flavored formulation of diacerein, an interleukin-1 beta, or IL-1, inhibitor that we are developing for osteoarthritis pain and inflammation in dogs. We initiated the pivotal trial for CereKin in August 2013 under a Protocol Concurrence with the FDA. We expect to have data from the pivotal trial in mid 2014 and, if positive, intend to submit a NADA starting in mid-2014, with potential marketing approval in the second half of 2015. If approved, CereKin would be a first-in-class drug for the veterinary market.

The active ingredient in CereKin has been the subject of multiple studies in humans, has been used by millions of human patients over twenty years, and has been demonstrated to be effective for the treatment of osteoarthritis pain and inflammation. Human drugs containing the active ingredient in CereKin are marketed extensively outside the United States for treatment of osteoarthritis and are generally considered to be safe, except for certain gastrointestinal side effects and rare idiosyncratic skin and liver side effects in humans that occur at a rate of one in a million or less, for which the active ingredient is undergoing review in the EU. These side effects appear to be less frequent or absent in dogs.

We have also conducted a pharmacokinetic study of CereKin in horses, and plan to develop it for osteoarthritis pain in horses. We have an INAD for this indication and expect to initiate the pivotal trial in 2014.

The active ingredient in CereKin is available as GMP-grade material from several suppliers, and we believe our current manufacturer or other suppliers will be able to provide sufficient quantities of the API for potential commercialization.

Canine Osteoarthritis Market Opportunity

Canine osteoarthritis is a chronic, progressive degenerative joint disease and the most common inflammatory joint disease in dogs. The prevalence of osteoarthritis increases with age, usually occurring in dogs aged nine years or older, but it can occur even in young animals. According to industry sources, the number of pets diagnosed with osteoarthritis has increased significantly over the past five years and an estimated 20% of dogs over the age of one are diagnosed with osteoarthritis. Osteoarthritis is manifested clinically by lameness and pain, immobility, restriction of motion, decreased weight-bearing and swollen joints. Other changes include joint instability, narrowing of joint space, erosion and ulceration of the cartilage of the joint and detrimental remodeling of bone and joint surfaces.

NSAIDs such as carprofen, which is marketed under the brand name Rimadyl, are the most common treatment for canine osteoarthritis. Rimadyl was the first product approved for the control of pain and inflammation associated with canine osteoarthritis and its introduction created a product category around a previously unmet medical need. Corticosteroids are also used to treat canine osteoarthritis extra-label, but safety considerations restrict their long-term application.

The NSAID segment has been one of the fastest growing categories in pet therapeutics since 2005, with four additional NSAID approvals and the approval of the first of five generic carprofen products. According to surveys conducted in 2013 by Brakke Consulting, the U.S. dog and cat pain market was approximately $247 million in 2012. Veterinarians recommended NSAID therapy for 83% of the dogs they treated with osteoarthritis, and believed approximately 60% received treatment. Rimadyl remains the leading prescription treatment with 2012 U.S. sales of $90 million and nearly 40% market share, with generic carprofen sales limited to approximately $20 million in that year.

While NSAID side effects in most dogs are generally mild, some dogs have a sensitivity that results in hepatic and/or gastrointestinal toxicity and, in extreme cases, death. As a result, NSAID label language contains bolded warnings and specifies

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that baseline blood tests should be conducted, and pets should be periodically monitored using blood tests to check for any toxic effects. Given the associated side effects and required monitoring with blood tests that are associated with NSAID therapy, up to approximately 50% of dogs remain untreated or cannot be treated chronically.

Non-steroidal anti-inflammatory drugs, or NSAIDs, are the only approved treatment for canine osteoarthritis, other than steroids and one vitamin-mineral based drug.

Our Solution - CereKin

We are developing CereKin for the management of pain and inflammation associated with osteoarthritis, initially for dogs. The active ingredient in CereKin has demonstrated efficacy in treating osteoarthritis in both humans and dogs. We believe that, if approved, CereKin will not require blood monitoring tests and may be used alone or in combination with NSAIDs. In humans, the active ingredient in CereKin has demonstrated added effectiveness when combined with NSAIDs versus NSAIDs alone. Based on data from a study published in 1999 in Arthritis & Rheumatism, we expect CereKin may have disease-modifying effects, mediated by direct protection of bone tissue in dogs and may protect against NSAID-induced GI tract problems.

Diacerein, the active ingredient in CereKin, is an oral IL-1 inhibitor with potential disease-modifying effects that has been shown to be an effective osteoarthritis therapeutic in humans. The active ingredient is approved in multiple countries in the EU and other foreign jurisdictions for the treatment of osteoarthritis in humans. Its efficacy has been demonstrated in multiple, randomized, controlled human trials in patients with knee or hip osteoarthritis, and has been used for decades in millions of human patients. Diacerein is not associated with the serious adverse events caused by NSAIDs, such as gastrointestinal bleeding or renal failure. In humans, diacerein is associated with certain gastrointestinal side effects, such as diarrhea, and rare idiosyncratic skin and liver side effects. Based on a recommendation from the EMA's Pharmacovigilance Risk Assessment Committee, the EMA is currently considering the suspension of human drugs containing diacerein until convincing evidence of a positive risk-benefit balance is provided in a specific human population. We believe these side effects are less frequent or absent in dogs, and that the risk-benefit balance in dogs is more favorable than in humans due to the relative lack of approved treatment options for dogs. However, because reliable detection of rare events would require exposure of millions or tens of millions of dogs, it is not possible to rule out the risk of such events until well after the launch of the product.

CereKin works through a different mechanism than corticosteroids or NSAIDs. Preclinical studies have demonstrated that the active ingredient in CereKin downregulates the production and activity of IL-1, an important signaling molecule that activates inflammation in a variety of tissues. IL-1 is a well-validated target. Human antibodies and other biologics against IL-1 such as anakinra, gevokizumab, and rilonacept, have shown activity in a number of diseases, including rheumatoid arthritis, gout and uveitis. However, unlike these biologics, CereKin can be administered orally. In addition, by inhibiting IL-1, CereKin downregulates a number of other cytokines, including tumor necrosis factor, or TNF, a cytokine that plays a key role in many inflammatory diseases such as arthritis.

Clinical Data

The active ingredient in CereKin has demonstrated pain-reducing and disease-modifying effects in humans and animals, including dogs, sheep, and mice.

In multiple randomized, placebo-controlled studies in humans, the active ingredient in CereKin significantly reduced osteoarthritis pain and improved function compared with placebo. For example, in a study of 168 patients published in Arthritis & Rheumatism in 2007, the active ingredient in CereKin demonstrated up to a 70% response rate compared to 40% for placebo following a three-month dosing interval. For the purpose of determining the response rate, a response was considered to have occurred if the patient experienced a specified reduction in pain in combination with a specified change in the Western Ontario and McMaster Universities Osteoarthritis Index, or WOMAC, a validated osteoarthritis scale.

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Response Rates in Human Osteoarthritis Patients with the
Active Ingredient in CereKin and Placebo

In several studies in laboratory dogs, the active ingredient in CereKin has demonstrated an ability to effectively treat osteoarthritis, and in many cases to delay bone damage caused by the disease. In the above-mentioned 1999 study, a randomized, placebo-controlled study was conducted in adult dogs in a model of osteoarthritis of the knee. Dogs treated with the active ingredient in CereKin exhibited a statistically significant lower SFA score, a validated measure of osteoarthritis severity with higher numbers representing greater severity, than dogs treated with placebo, as shown in the following table:

SFA Scores in Dogs Treated with the Active Ingredient in CereKin and Placebo

	Week 16	Week 32
Diacerein	0.6	3.4
Placebo	1.3	6.3
	p=0.04	p=0.05

p-value <0.05 indicates statistical significance on a 95% or higher confidence level

Multiple other studies in dogs have demonstrated similar beneficial effects, as well as safety and tolerability, in the treatment of canine arthritis. For example, the rate of diarrhea reported in humans treated with diacerein is approximately 40%, as published in a Cochrane Review in 2009. However, none of the ten dogs in a study published in Arthritis and Rheumatism by Smith in 1999, nor any of the seven dogs in a study published in Osteoarthritis and Cartilage by Brandt in 1997, experienced diarrhea, though some loose stools were noted, despite being treated chronically at doses between 30 mg/kg to 40 mg/kg a day, substantially higher than the human dose of approximately 1 mg/kg a day. Liver toxicity in dogs has not been observed, and given the idiosyncratic nature of the side effect in humans, we do not expect this side effect to cross the species boundary.

In rodent models, including a model of spontaneous arthritis, for example as published by Tamura in Osteoarthritis and Cartilage in 1999, and Gadotti in Pharmacology, Biochemistry, and Behavior in 2012, the active ingredient in CereKin has been effective in preventing bone destruction and reducing joint lesions associated with osteoarthritis when dosed over time.

Pivotal Trial for CereKin

In August 2013, we initiated enrollment in the pivotal trial of CereKin in dogs for the treatment of osteoarthritis pain

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and inflammation under a Protocol Concurrence with the FDA. The pivotal trial is a multi-center, randomized double-blind, placebo-controlled study of both safety and efficacy of CereKin. We intend to enroll at least 300 dogs aged one year or older, and test two oral doses of CereKin, 5 mg/kg twice daily and 20 mg/kg twice daily, versus placebo, for eight weeks.

The primary endpoint of the pivotal trial is the change in Canine Brief Pain Inventory, or CBPI, at eight weeks. The CBPI is a validated pain scoring system consisting of ten questions asked of dog owners to evaluate the severity of their dog's pain and how much the pain interferes with the dog's normal behavior. For each question, scores can range from zero to ten, with ten being the most severe. Each dog will be scored on day one and at two-week intervals for eight weeks, with the endpoint measuring the change from day one to week eight. Secondary endpoints will include the change in score on the investigator's Dog Osteoarthritis Scoring Sheet, or DOSS, and CBPI trends over the course of the study, and severity of individual signs of osteoarthritis from the DOSS. DOSS is a six-question investigator scoring system with scores ranging from zero to four, with four being the most severe.

AtoKin

Overview

AtoKin is a high-dose, oral, chewable, beef-flavored formulation of fexofenadine that we are developing for atopic dermatitis in dogs. The active ingredient in AtoKin is a potent and selective antihistamine that is approved for allergic diseases in humans. Published data indicate that the active ingredient is as effective as steroids in treating canine atopic dermatitis. We have been granted a Protocol Concurrence by the FDA for the pivotal trial of AtoKin, which we initiated in February 2014. We expect to receive data from the trial in late 2014 and, if positive, we intend to submit a NADA in late 2014, with potential marketing approval in late 2015.

The active ingredient in AtoKin is available as GMP-grade material from several suppliers, and we believe our current manufacturer or other suppliers will be able to provide sufficient quantities for our pivotal trial and potential commercialization.

Canine Atopic Dermatitis Market Opportunity

Atopic dermatitis is a common, potentially chronic, allergic skin disease that affects up to 10% of all dogs. It is the second most common allergic skin condition in dogs, surpassed only by flea allergies. Dogs with atopic dermatitis often suffer from pruritus, or severe itching, hair loss, tearing of the skin from deep scratching, frequent licking of their paws and excessive tear production. Secondary skin problems are also common, including skin infections. The condition can be highly uncomfortable or even debilitating, and in extreme cases, euthanasia is necessary to avoid undue suffering.

The mainstay therapy for pruritus is oral corticosteroids and oral cyclosporine. A recently approved product, Apoquel, a Janus kinase inhibitor, is also available for treating atopic dermatitis. While these drugs are effective, they have significant side effects that can prevent their long-term use. They all suppress the dog's immune system, and can lead to serious side effects including infections. Corticosteroids also can cause osteoporosis, endocrine problems and cataracts in dogs and tend to cause dogs to eat, drink and urinate frequently, which is typically considered undesirable by pet owners. Because atopic dermatitis in dogs is often a chronic condition, these safety and side effect issues create a significant unmet medical need for a safe and effective long-term treatment.

Our Solution - AtoKin

AtoKin is an oral, chewable, beef-flavored formulation of fexofenadine. The active ingredient in AtoKin has been shown to be as effective as a steroid in the treatment of atopic dermatitis in a placebo-controlled study in dogs.

The active ingredient in AtoKin has an excellent track record of safety in animals and humans. Because it is not an immunosuppressive drug, AtoKin may be utilized both as a first-line therapy and also as a long-term maintenance therapy for chronic atopic dermatitis in dogs without increased risk of infections or other safety concerns associated with currently available therapeutics. In addition, the active ingredient in AtoKin has not been associated with the excessive eating, drinking, and urinating in animals that steroids can cause.

Clinical Data

The active ingredient in AtoKin is widely used to treat allergies in humans and is marketed under the brand name Allegra in the United States. The drug has been used by veterinarians extra-label in dogs and cats for the treatment of allergies,

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typically at the same low dose used for humans of approximately 2-4 mg/kg/day. Reported results at this lower dosage have been mixed.

In a study published in 2009 in Slovenian Veterinary Research, the efficacy of a high-dose of the active ingredient in AtoKin was compared with methylpredisolone, a corticosteroid considered to be the standard of care for atopic dermatitis in dogs. Thirty dogs suffering from atopic dermatitis were randomized, with one group receiving the drug orally at 18 mg/kg/day and the other group receiving methylprednisolone at 0.5 mg/kg daily for five days then every other day for six weeks.

Dogs were analyzed in the initial baseline visit, at week three and at week six using the canine atopic dermatitis extent and severity index, or CADESI, which evaluates the severity of three parameters in dogs at various pre-determined body areas: erythema, or reddening of the skin; lichenification, or thickening and hardening of the skin; and excoriation, or abrasion and wearing of the skin. In addition, dog owners were asked to evaluate the degree of pruritus in their dogs using a visual analog scale from 0-100, with 0 being no pruritus and 100 being intense/incessant pruritus.

Both the active ingredient in AtoKin and methylprednisolone resulted in statistically significant reductions in CADESI scores from baseline to the second visit at week three. Statistically significant reductions in the CADESI score were also maintained in both groups at the final visit at week six of the study as illustrated in the following table, and in addition, a statistically significant difference in favor of fexofenadine versus methylprednisolone was found at week 6 as measured by CADESI (p=0.012):

Average CADESI Score

Fexofenadine versus Methylprednisolone

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Evaluation of pruritus in both groups showed a similar trend over time, with a reduced itching in both groups. At the final evaluation at week six, both the fexofenadine and methylprednisolone groups had significantly reduced pruritus from baseline as illustrated in the table below:

Average Pruritus Visual Analog Score (0-100)
Fexofenadine versus Methylprednisolone

Pivotal Trial for AtoKin

We have obtained a Protocol Concurrence from the FDA for the pivotal trial to study the safety and efficacy of AtoKin in dogs for the treatment of atopic dermatitis. The pivotal trial is a multi-center, randomized double-blind, placebo-controlled study. We intend to enroll at least 200 dogs one year of age or older with atopic dermatitis. We will test 20 mg/kg oral doses of AtoKin once daily in addition to placebo.

The co-primary endpoints of the pivotal trial are based on the Canine Atopic Dermatitis Lesion Index, or CADLI, and Pruritus Visual Analog Score, or PVAS. The CADLI score is a validated composite index of six clinical symptoms associated with canine atopic dermatitis evaluated in five specified body regions. At each specified body region, each parameter is scored by the investigator from zero to five, with a score of zero defined as no lesion and a score of five defined as a severe/extensive lesions. PVAS is scored by the pet owner using a zero-to-ten analog scale, with a score of zero representing no pruritus/chewing and a score of ten equating to incessant and intense pruritus/chewing.

SentiKin

Overview

We intend to develop SentiKin initially as a therapeutic to manage post-operative pain in dogs, cats and horses. SentiKin is an oral, non-NSAID, non-opioid analgesic formulation of flupirtine. The active ingredient in SentiKin is approved for the treatment of pain in humans in multiple countries outside the United States and has demonstrated potency comparable to tramadol. It has also demonstrated efficacy in treating pain in dogs. Due to a rare side effect affecting the liver that is seen only with long-term use, the EMA recently determined that the risk-benefit profile of flupirtine justified its use in humans for short-term indications only. We are developing flupirtine for post-operative pain, which is a short-term indication.

We are currently negotiating a Protocol Concurrence with the FDA for the pivotal trial for SentiKin for post-operative pain in dogs, and intend to initiate the trial in March 2014. We expect to receive data from the trial in late 2014 and, if positive, we intend to submit a NADA in late 2014, with potential marketing approval in late 2015. We are also developing SentiKin for post-operative pain in horses. In the future, we intend to develop SentiKin for post-operative pain in cats, as well as for seizures in both dogs and cats.

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The active ingredient in SentiKin is available as GMP-grade material from several suppliers, and we believe our current manufacturer or other suppliers will be able to provide sufficient quantities for our planned pivotal trial and potential commercialization.

Canine Post-Operative Pain Market Opportunity

Approximately 50% of dog surgeries each year are spays and neuters. Other common surgeries include cancer surgery, declawing, cruciate repairs and bone fracture repairs. There is no established protocol for the use of pain medications following these surgeries, and pain management practices have traditionally been based on the veterinarian's views on the level of pain associated with a specific surgical procedure and the perceived pain tolerance of the dogs. As pet owners have increasingly requested medications for their pets' post-operative pain, veterinarians have made recent advances in treating pain in pets.

Some drugs used for post-operative pain in dogs have been approved by the FDA, while others are used extra-label. The only systemic drugs approved for treatment of post-operative pain in dogs are NSAIDs, fentanyl, and pentazocine. The most commonly used post-operative pain medication in dogs is the NSAID Rimadyl, which has been approved by the FDA for this use. As previously described in our discussion regarding CereKin for post-operative pain in dogs, NSAIDs have demonstrated serious side effects that result in prescribed ongoing monitoring of dog health during their use. For example, some dogs have a sensitivity that results in kidney toxicity and, in extreme cases, death. Consequently, we believe there is an unmet medical need for a drug for post-operative use that is effective in dogs, but also safer on the liver, gastrointestinal system and kidneys. We believe that development of a potent non-narcotic analgesic addresses an important unmet medical need and may lead to a new standard of care in pain control.

In surgeries associated with the most severe post-operative pain, fentanyl is commonly used. Fentanyl is a controlled narcotic drug, and pets are often kept in the hospital while receiving fentanyl. The majority of fentanyl is dispensed as fentanyl patches, although such use in pets has not been approved. In 2012, Nexcyon received FDA approval for a transdermal fentanyl solution in dogs, but its use in this format has not been widely accepted by veterinarians. Fentanyl is associated with significant sedation and respiratory depression, which are undesirable analgesic effects. It also has potential for diversion and abuse by owners. Pentazocine, also a controlled narcotic drug, is not widely used in dogs and has potential for sedation, respiratory depression and abuse. We believe that there are unmet needs in pets receiving painful surgeries, especially if effective and extended pain relief could be achieved with a non-narcotic medicine.

Our Solution - SentiKin

We believe that, if approved, SentiKin will provide pain relief that is superior to NSAIDs and comparable to some opioids, without the potential for opioid addiction or the risk of possible diversion and abuse by pet owners.

The active ingredient in SentiKin is a centrall