

Reason for report:

INITIATION

KINDRED BIOSCIENCES, INC.

Accelerating the Next Wave of Pet Therapeutics; Initiating with OP & \$32 PT

• **Bottom Line:** We are initiating coverage of Kindred Biosciences (KIN) with a outperform rating and a \$32 price target based on our DCF. KIN is a development stage biopharmaceutical company exclusively focused on bringing novel therapies for the treatment of pets (dogs, cats, and horses) to market. With 3 products in pivotal studies poised to read out before the end of 2014, an additional 7 products in development, and some further 30+ potential products identified, we believe KIN is well-positioned to become a leader in the multi-billion dollar pet therapeutics market.

• **KIN's strategy of rapid clinical development capitalizes on decades of human health advancements.** KIN is applying a classic specialty pharma model together with its expertise in biologics to create the next companion animal health company. KIN is quickly executing its strategy to (1) identify drugs proven effective and reasonably safe in humans and animals, (2) execute development & regulatory approvals more quickly and economically than competitors, (3) expand into biologics using mgmt's human health expertise, and (4) develop a top-tier pet health marketing organization. With, as MEDACorp specialists estimate, the market for pet therapeutics being anywhere from 10 to 40 years behind human health options, we believe the opportunity to advance treatment within the well-established and growing multi-billion dollar pet health market is substantial.

• **Late-stage pipeline targets three Animal Health (AH) blockbuster opportunities with a strong chance of success in dogs.** CereKin (diacerein for osteoarthritis), AtoKin (fexofenadine for atopic dermatitis), and SentiKin (flupirtine for post-operative pain) each target animal health blockbuster (>\$100M per species) opportunities. Given evidence of effectiveness demonstrated in dogs and in humans with each product, together with the low bar of placebo-controlled pivotal studies, and the capital to appropriately power (>90%) each study, we estimate the probability of technical success at ~85%. In addition, we forecast that KIN will bring one additional small molecule and at least 1 biologic to market by the end of 2018. We forecast total sales in dogs at ~\$190M in 2018 and ~\$400M in 2022. We further assume that KIN will successfully license each product for use in dogs OUS.

• **Horses and cats offer significant upside potential.** With >8M horses and 96M cats in the US, the market opportunity for both species is substantial. Nonetheless, we only forecast risk-adjusted sales of ~\$5M in 2018 and ~\$45M in 2022 in horses while leaving cats as upside in the model. Interestingly, feedback from MEDACorp veterinary specialists suggests a significant potential opportunity for injectable biologics in cats.

Key Stats:**(NASDAQ:KIN)**

S&P 600 Health Care Index:	1,214.29
Price:	\$14.66
Price Target:	\$32.00
Methodology:	DCF, 12% discount rate, 2% terminal growth
52 Week High:	\$26.99
52 Week Low:	\$8.75
Shares Outstanding (mil):	19.2
Market Capitalization (mil):	\$281.5
Book Value/Share:	\$0.00
Cash Per Share:	\$5.62
Dividend (ann):	NA
Est LT EPS Growth:	NM



Dec Yr	1Q	2Q	3Q	4Q	FY Rev	1Q	2Q	3Q	4Q	FY EPS	P/E
2013A	--	--	--	--	0.0	--	--	--	--	(\$1.13)	NM
2014E	0.0	0.0	0.0	0.0	0.0	(\$0.17)	(\$0.18)	(\$0.22)	(\$0.27)	(\$0.86)	NM
2015E	0.0	0.0	\$0.1	\$1.6	\$1.7	(\$0.31)	(\$0.51)	(\$0.78)	(\$0.83)	(\$2.44)	NM
2016E	--	--	--	--	\$55.6	--	--	--	--	(\$2.04)	NM

Source: Company Information and Leerink Partners LLC Research

Revenues (\$ 'MM); GAAP EPS; IPO closed 12/17/17; secondary closed 4/8/14

Please refer to Pages 32 - 34 for Analyst Certification and important disclosures. Price charts and disclosures specific to covered companies and statements of valuation and risk are available at <https://leerink2.bluematrix.com/bluematrix/Disclosure2> or by contacting Leerink Partners Editorial Department, One Federal Street, 37th Floor, Boston, MA 02110.



KINDRED BIOSCIENCES (NASDAQ: KIN)

PURE-PLAY COMPANION ANIMAL THERAPEUTICS

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Initiating Coverage of Kindred Biosciences (KIN) with an Outperform Rating

KINDRED OUTPERFORM RATING

Investment Thesis

KIN is a development stage biopharmaceutical company exclusively focused on bringing novel therapies for the treatment of pets (dogs, cats, & horses) to market. With three products in pivotal studies poised to read out before the end of 2014, an additional 7 products in development, and a further 30+ potential products identified, KIN is well-positioned to become a leader in the multi-billion dollar pet therapeutics market. Our DCF-based price target for KIN of \$32/shr assumes an 85% probability of technical success for CereKin, AtoKin, & SentiKin.














Valuation

We value KIN at \$32/share. Our price target is based on our DCF valuation, which assumes a 12% discount rate on sales and profits through 2022 and applying a 2% terminal growth rate. This equates to 16x 2020 EPS of \$4.33 discounted back 5 years at a 15% discount rate. Our analysis of a wide range of potential comparable companies suggests a price range from \$26/shr (animal health comps excluding Aratana) to \$47/shr (small biotech comps) on 2018 consensus sales forecasts.

Risks to Valuation

- Kindred is a late stage pet therapeutics company with no revenues and clinical assets.
- **Clinical and Regulatory Risk:** It's success is dependent on the clinical and regulatory outcome of its pipeline assets which positive data and approvability is not assured. We estimate that CereKin, AtoKin, and SentiKin each contribute \$11-12, \$5, & \$4/shr respectively to our \$32/shr DCF price target.
 - **Commercial Risk:** KIN plans to sell its products independently in the US, which will require significant capital, effort, and expertise that still needs to be developed for its 2015 launches.
 - **Competitive Landscape:** Given limited IP protection and lower regulatory hurdles in pet therapeutics, KIN may face intensifying competition either from new product entrants or from generics.
 - **Financing Risk:** Although Kindred has completed a secondary raise and currently has >\$100M of cash on the balance sheet, the company may need to raise additional capital to fund additional clinical development or to complete product acquisitions before becoming substantially cash flow positive, possibly diluting existing shareholders.

Deep Small Molecule and Biologic Product Pipeline

Molecule	Indication	Pilot / Formulation	INAD Filed	Pivotal Study	NADA
Small Molecule Product Candidates					
CereKin – IL-1 inhibitor	Osteoarthritis pain in dogs				Anticipated filing in 2014
	Osteoarthritis pain in horses				
AtoKin – Anti-allergic drug	Atopic dermatitis in dogs				Anticipated filing in 2014
SentiKin – Centrally acting analgesic	Postoperative pain in dogs				Anticipated filing in 2014
	Postoperative pain in horses				
KIND-007 – BTK inhibitor	Cancer/immune disease in dogs				
	Cancer/immune disease in cats				
KIND-006 – Pro-motility agent	Gastrointestinal disease in cats				
Molecule	Indication	Discovery/ Development	Mfg. Process Development	Pivotal Study	PLA
Biologic Product Candidates					
KIND-502 – Anti-IgE antibody	Allergic diseases in dogs				
KIND-506 – TNFR-Ig fusion protein	Inflammatory diseases in dogs				
KIND-507 – CLTA4-Ig fusion protein	Autoimmune diseases in dogs				
KIND-504 – Cancer vaccine	Cancer in dogs				
KIND-501 – Anti-VEGF fusion protein	Cancer in dogs				

30 potential small molecule and biologic therapeutics are identified in the pre-INAD stage, including molecules targeting cancer metabolism, immune checkpoint inhibitors, and feline erythropoietin.

Two-Year Targets / Catalysts and Pivotal Trial Designs

CereKin	Pivotal Trial Design
Size (N)	300 Dogs
Treatment (Dosage)	5 mg/kg and 20 mg/kg Twice Daily
Primary Endpoint	Change in CBPI at 8 Weeks
Study Duration	8 Weeks
Readings (Biweekly)	Day 1 followed by Weeks 2, 4, 6, 8

CBPI: Canine Brief Pain Inventory

- validated pain scoring system consisting of ten questions to evaluate the severity of the dog's pain and interference with normal behavior
- Scores can range from 0 to 10, with 10 being the most severe

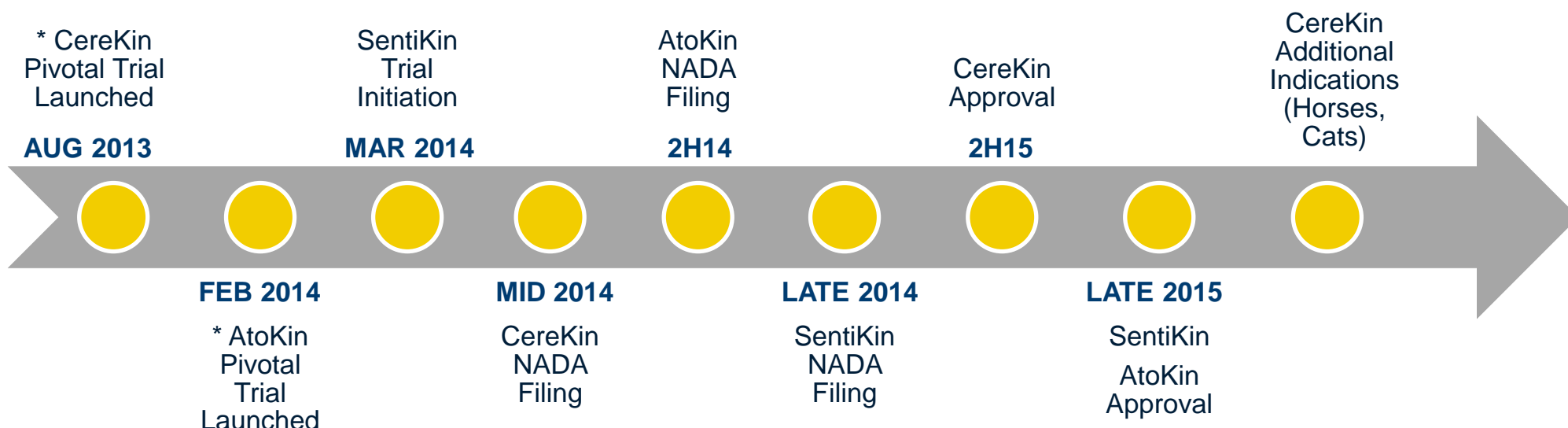
AtoKin	Pivotal Trial Design
Size (N)	200 Dogs
Treatment (Dosage)	20 mg/kg Once Daily
Co-Primary Endpoints	CADLI and PVAS Scores

CADLI: Canine Atopic Dermatitis Lesion Index

- Index of six clinical symptoms associated with atopic dermatitis evaluated in five body regions
- Scores range from 0 to 5; score of 5 defined as severe lesions

PVAS: Pruritus Visual Analog Score

- 0 to 10 scale
- 0 representing no pruritus/chewing and 10 equating to incessant and intense pruritus/chewing



* Received FDA Protocol Concurrence, which is analogous to human Special Protocol Assessment (SPA)

NADA: New Animal Drug Application

Source: Company Information and Leerink Partners

KIN Offers a Differentiated Opportunity to Invest in the Rapidly Growing Companion Pet Health Market

- **Market continues to expand with pure-play companion Animal Therapeutics**
 - Aratana (PETX), Kindred (KIN)

- **Myriad of opportunities** to capitalize on advances in human health in a fully functional but relatively underserved companion animal therapeutics market.

- **Numerous advantages over human health**
 - 1) Lower overall investment in SG&A, R&D
 - 2) Faster overall clinical development
 - 3) Leverage decades of pharmaceutical industry knowledge

- **KIN's differentiated strategy:**
 - 1) Low risk strategy in repurposing established human health drugs for cats and dogs vs. Aratana's developing novel agents
 - 2) Strong management team
 - 3) Clinical development costs as low as 30% by bypassing CROs
 - 4) \$3M – \$5M to develop each pet therapeutic thereby reducing financing risk
 - 5) Expertise in biologics development

Pet / Companion Animal Therapeutics

The Market for Pet Therapeutics

US consumers spent an estimated \$55.5 billion on their pets in 2013, an increase of 44% from 2006 (CAGR of 5.4%)

- Cats and dogs are the most popular pet species in the US and EU: there are ~96M cats and ~83M dogs in the US and ~85 million cats and ~74 million dogs in the EU
- An estimated 68% of US households have at least one pet.

\$55.5B

PET SPENDING

The US veterinary care segment has been among the fastest growing segments of the overall US pet market, increasing from \$9.2 billion in 2006 to \$14.4 billion in 2013, (CAGR of 6.6%)

\$14.4B

VET CARE

Industry estimates suggest \$5.2-6.7B of US veterinary care spending is related to consumer spending in pet medicines, which includes \$4-5B billion for parasiticides and vaccines and \$1.3-1.7B for other pet therapeutics

- Several factors, including the increased longevity of pets and willingness of pet owners to treat their pets with medications, are expected to contribute to continued growth in spending on pet therapeutics

\$1.3-1.7B

PET THERAPEUTICS

Pet Therapeutics – A Favorable Development & Commercialization Story

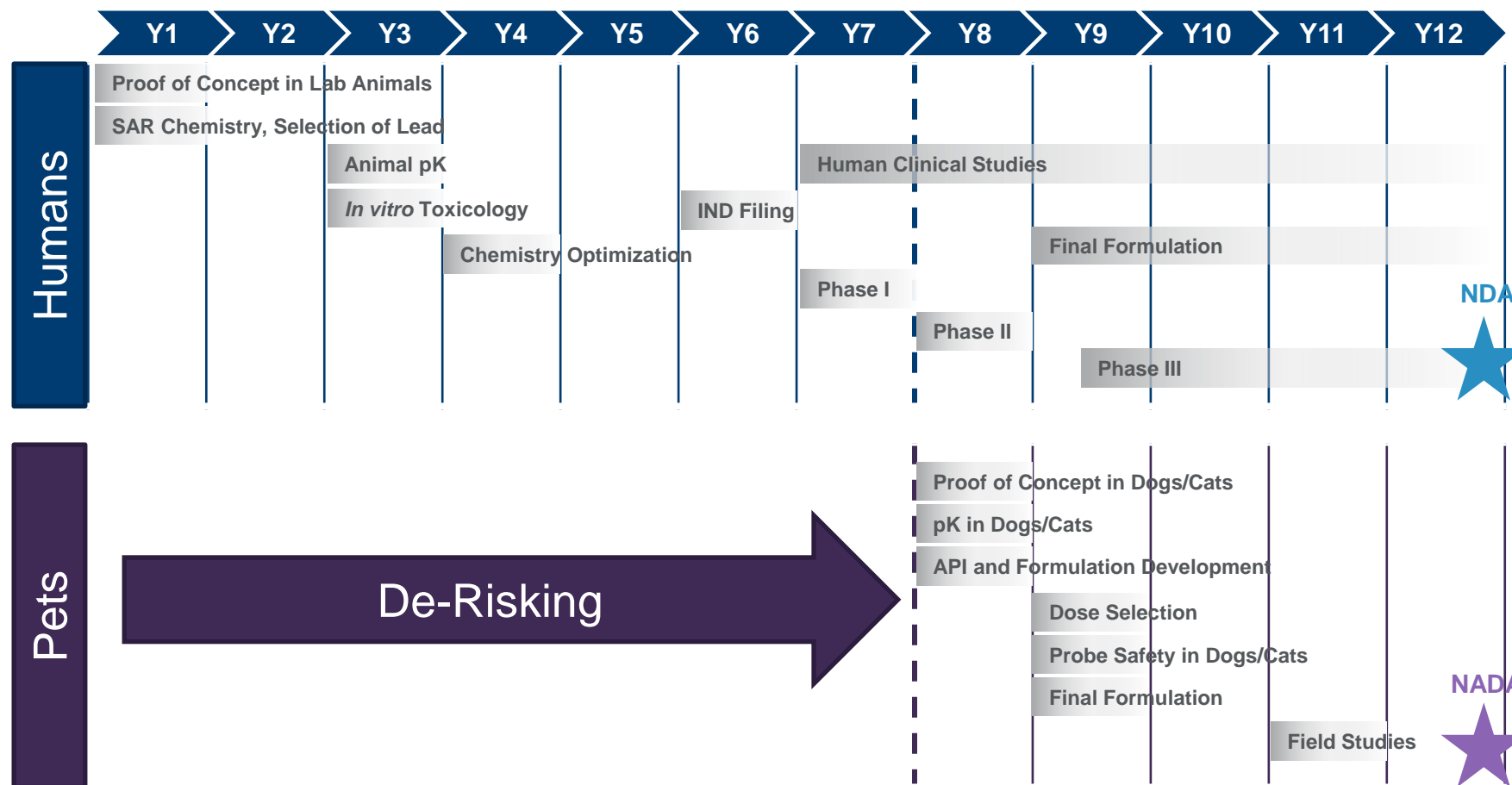
	Humans	Pets
Development	Multiple Species Steps (i.e., test in animal models)	Direct to Species
	~\$1.3B	~\$10M
	~10 years	~5 years
Commercial	Third-Party Payer	Private Pay
	Steep Generic Decline	Slow Generic Decline
	Difficult & Indirect Sales Including Multiple Stakeholders	Accessible & Direct Sales with Veterinarian Generally Serving Dual Role as Doctor & Pharmacist

Aspects of the commercialization model resemble what we see in the human aesthetics market. For example, the distribution and commercialization of Botox is primarily direct to the physician, and the purchaser captures an 100%+ markup on the product within a private/self-pay (i.e., non-insured) model.

Source: Kindred and Aratana Company Information; Leerink Partners

Significant “De-risking” in Pet Therapeutic Development

DEVELOPMENT



Kindred looks to even further de-risk development by:

- Focusing initially on generic human drugs where GMP approved API manufacturing is established
- Conducting its own initial trials and speeding development time

Relatively Few Therapeutic Treatment Options Available to Pets as Compared with Humans

DEVELOPMENT

	Humans		Pets		
	Total NDAs	Total NMEs*	Total NADAs	NADAs for dogs/ cats	Pet therapeutic NCEs*
2011	98	30	12	6	2
2012	100	39	11	6	0
2013	139	36	6	4	2

Comparing recent NDAs and NMEs with their parallel pet therapeutic filings demonstrates the historical lack of supply of treatments for companion animals.

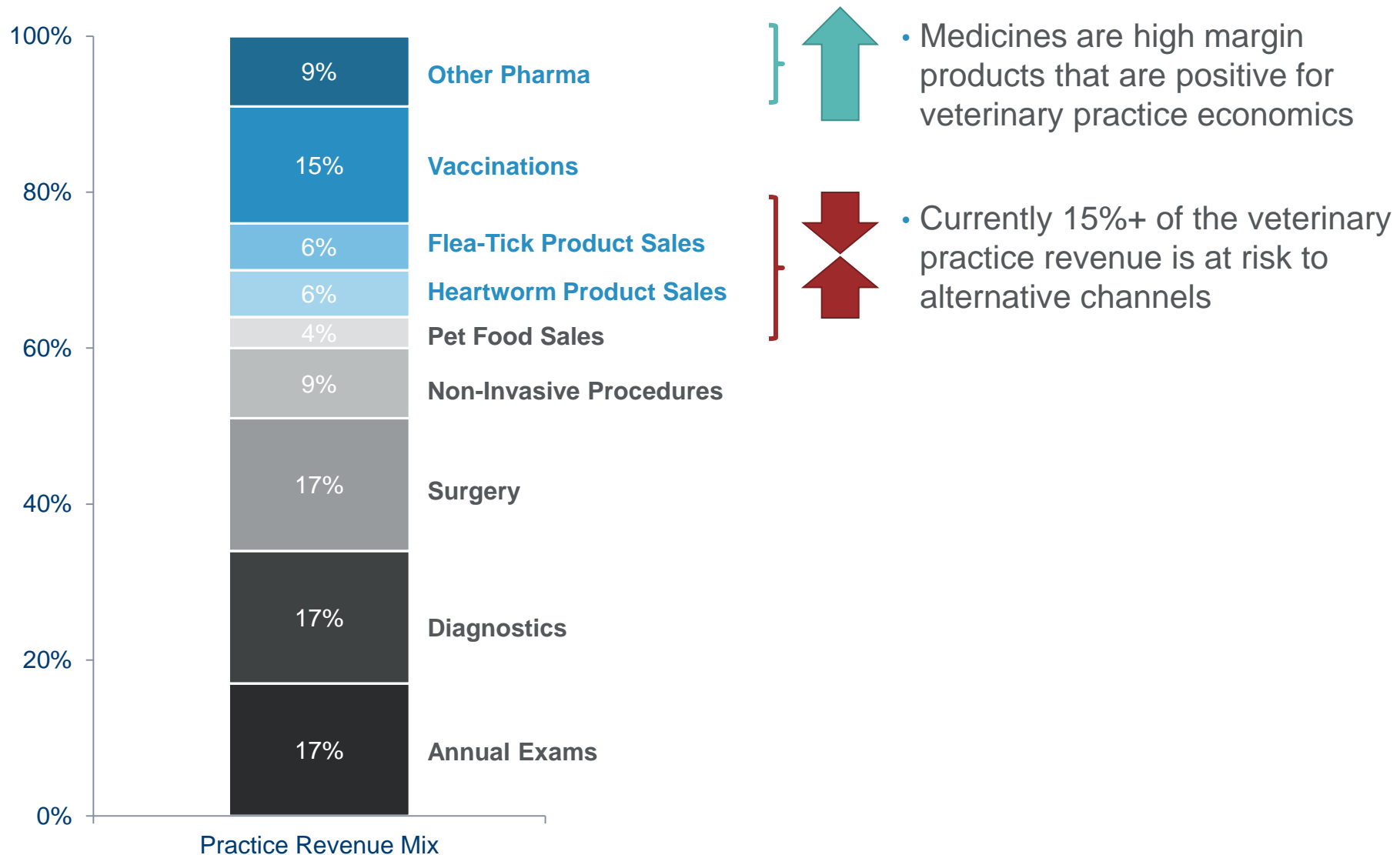
** Includes all the equivalent of all new chemical entities or BLAs

Source: FDA.gov; Kindred and Aratana Company Information; Leerink Partners

BLA = Biologic License Application, NADA = New Animal Drug Application, NCE = New Chemical Entity, NDA = New Drug Application, NME = New Molecular Entity

Increasing Utilization of Pet Therapeutics Aligns with Pressure Faced by Veterinarians

COMMERCIALIZATION



Ability to Directly Access & Appeal to Veterinarians Offers Significant Commercialization Advantage over Human Therapeutics Market

COMMERCIALIZATION

Example Advertisement

Trifexis
(spinosad + milbemycin oxime)

**WE'RE SENDING HIM
TO YOUR CLINIC FOR
PARASITE PROTECTION**

We're driving clients to your practice with national TV, consumer magazine and online ads to raise awareness of the benefits of Trifexis and the importance of year-round parasite protection. **He's on the way and he's bringing potential profits.**

Trifexis® (spinosad + milbemycin oxime) is the **once-monthly, beef-flavored tablet** that offers three types of parasite protection.

- Prevents heartworm disease**
- Kills fleas | prevents infestations**
- Treats hookworm, roundworm and whipworm infections**

CLIENTS CAN SAVE UP TO \$20 BY MAIL-IN REBATE.
For more information, visit trifexis.com/vet, see your Elanco representative or call 888-545-5973.

IMPORTANT SAFETY INFORMATION
Serious adverse reactions have been reported following concomitant extra-label use of admixtures with spinosad alone, one of the components of Trifexis chewable tablets. Treatment with fewer than three monthly doses after the last exposure to mixtures may not provide complete heartworm prevention. Prior to administration of Trifexis, dogs should be tested for existing heartworm infection. The most common adverse reactions recorded in clinical trials were vomiting, pruritus, lethargy and diarrhea. If vomiting occurs within an hour after administration, redose with another full dose. Puppies less than 14 weeks of age may experience a higher rate of vomiting. For product label, including complete safety information, see inside back cover.

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Call 1 (888) 545-5973 for technical support. To learn more visit trifexis.com

Elanco

He's on the way and he's bringing potential profits.

KINDRED BIOSCIENCES (KIN)

Strong Management Team leveraging decades of pharmaceutical industry knowledge



Richard Chin, MD

Founder and Chief Executive Officer

Former Head of Clinical Research, BioTherapeutics, Genentech
Rhodes Scholar

Genentech



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Kevin Schultz, DVM, PhD

Chief Scientific Officer and Head of R&D

Former CSO and Head of R&D, Merial: Frontline Plus, Previcox



Denise Bevers

Founder and Chief Operating Officer

Founder, SD Scientific; 25 years in biotech/pharma

elan



Stephen Sundlof, DVM, PhD

Senior VP of Regulatory Affairs

Former Director, Center for Veterinary Medicine, FDA



Stephen Galliker, CPA

Chief Financial Officer

Former CFO, Dyax Corporation
Former CFO, Excel Switching



Dyax



Blake Hawley, DVM

Chief Commercial Officer

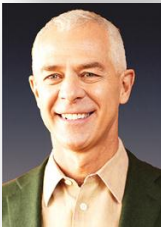
Former General Manager, UK, Russia, Australasia
Hill's Pet Nutrition



Board of Directors

**Ernest Mario, PhD***Director*

Former CEO of Glaxo, Chairman & CEO of ALZA
Chairman & CEO of Reliant Pharmaceuticals

**Ervin Veszprémi***Director*

Former Head of Global Marketing,
Novartis Animal Health

**MEDICHEM****Oleg Nodelman***Director*

Managing Director, EcoR1 Capital

**Raymond Townsend, PharmD***Director*

Former Head of Pharmacoeconomics, GSK
Former SVP, Elan



KINDRED BIOSCIENCES (KIN)

Product Pipeline

CereKin: Canine Osteoarthritis (OA) Market

Market / Medical Need

- Established Market
- 20% of dogs; > 1 years of age
- US \$250M
- WW \$450M
- Mostly NSAIDs for dogs; only treating symptoms
- Significant limitations given side effects and required kidney / liver function monitoring
- Half of dogs are intolerant to NSAIDs
- Safer product needed for pain / inflammation for Osteoarthritis

CereKin (Diacerein)

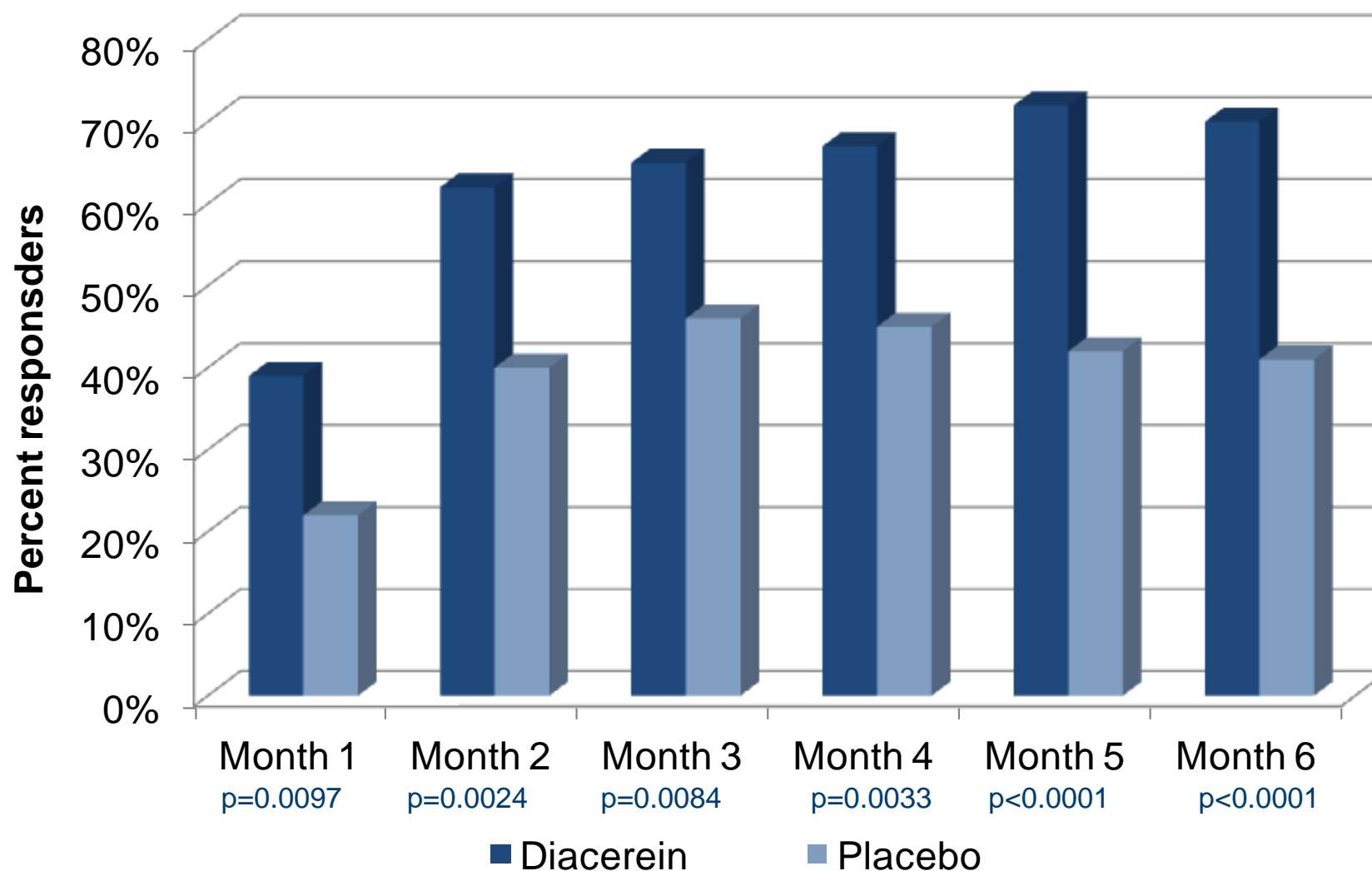
- Oral Flavored Chewable IL-1 Inhibitor
- MOA: Down regulates downstream cytokines including TNF
- Data show slowed progression of disease in humans and dogs
- 1st Line, 2nd Line or Combination use
- Possible Additive efficacy with NSAIDs
- Improved safety profile vs. NSAIDs; no evidence of liver, kidney, or GI toxicity in dogs
- Dog toxicology completed (by original sponsor)

Market Opportunity

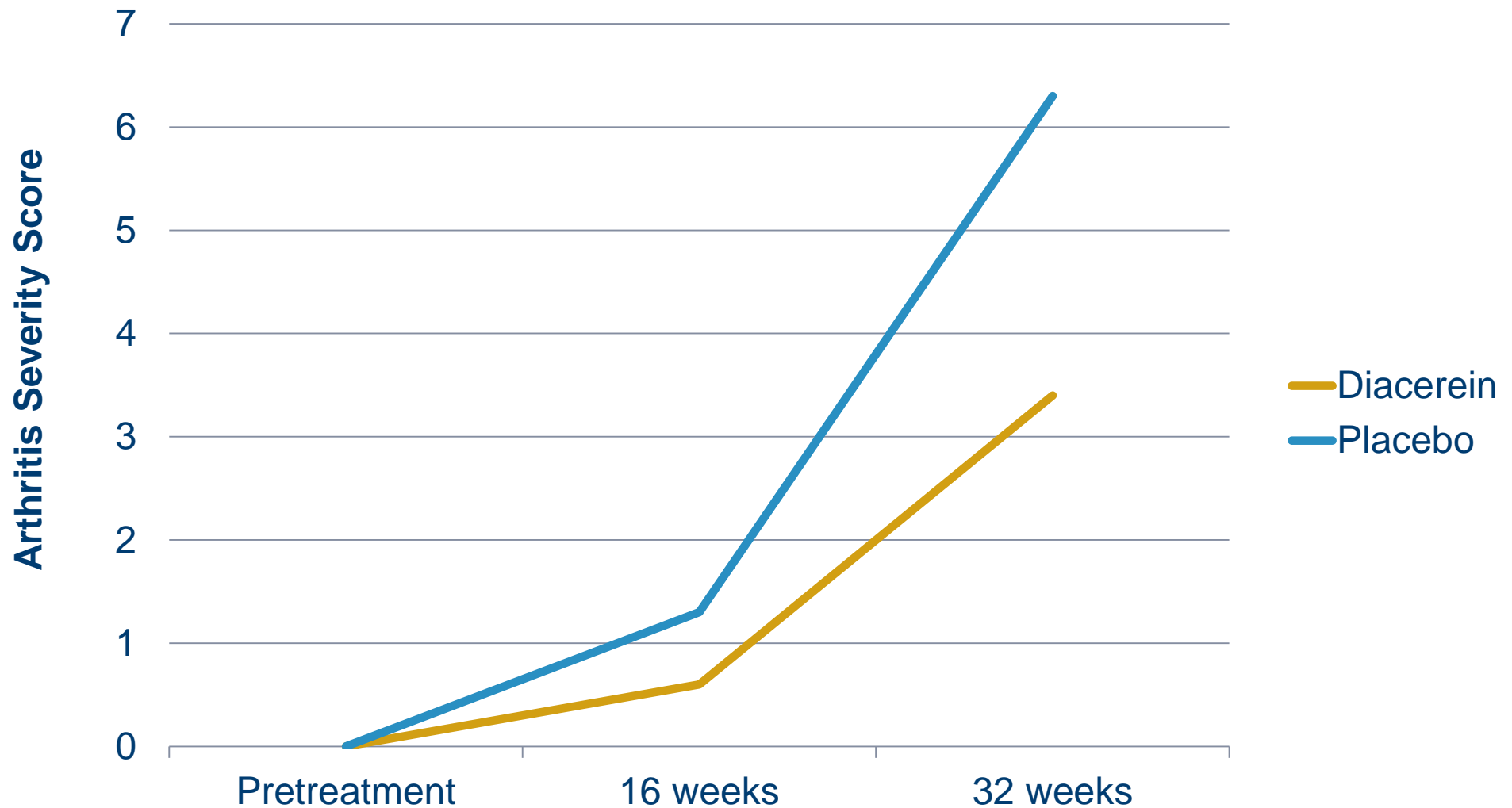
- 16M Canines OA
- 4M Treated
- Price at current NSAID \$2 / day for average size dog
- Vet cost \$1 / day
- Duration of Treatment is 20+ days
- GM 55-60%
- Additional opportunities in horses
- 10-20x Dose in Horses Allows for Higher Pricing
- Race horse treated with Laminitis, spend \$10-100K, akin to human Orphan Drug market

CereKin Effective for Osteoarthritis Pain in Humans

Response to Treatment in Diacerein and Placebo Groups



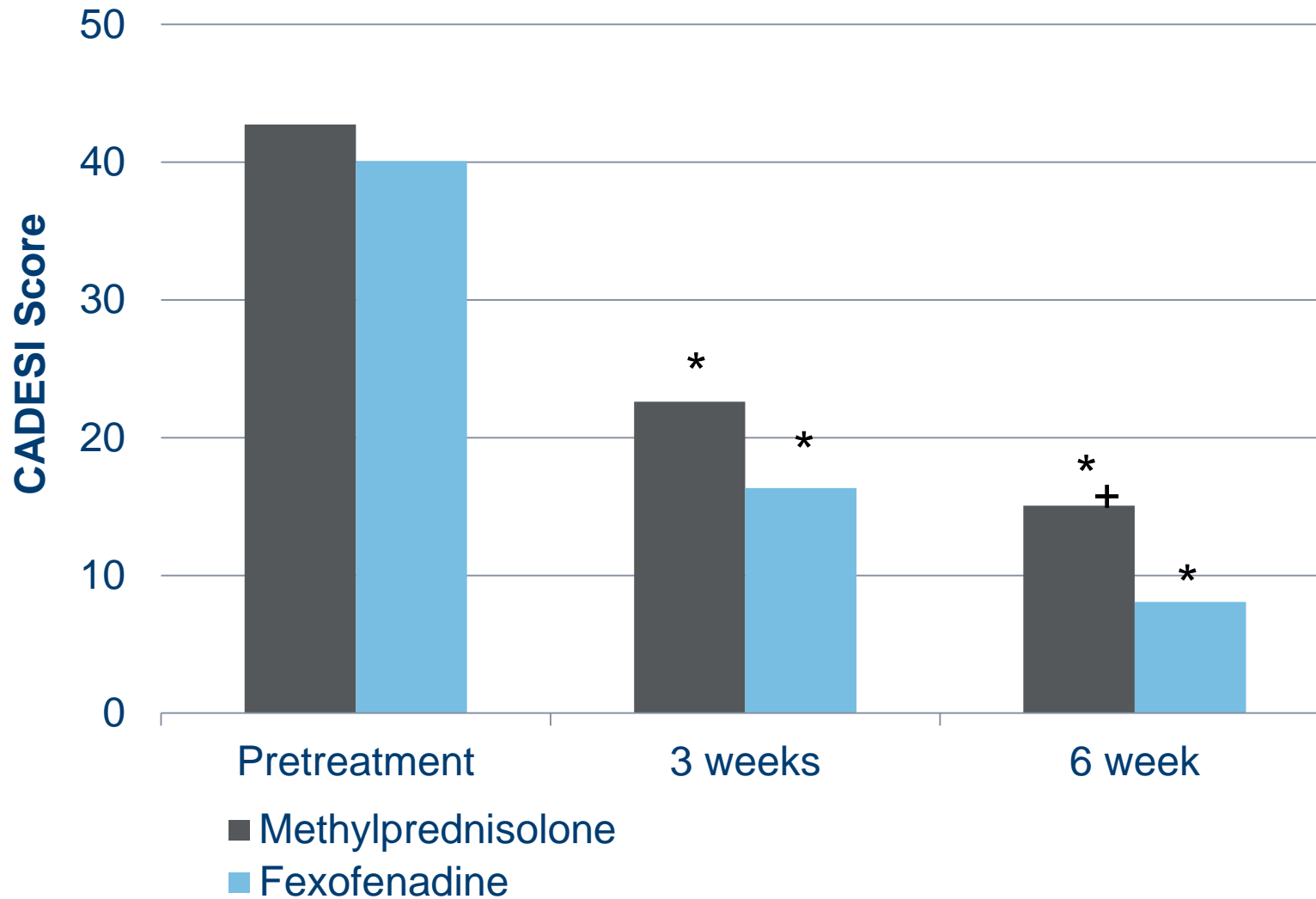
CereKin Provided Statistically Significant Lower Arthritis Severity Score vs. Placebo in Dogs



AtoKin: Canine Atopic Dermatitis Market

Market / Medical Need	AtoKin (Fexofenadine)	Market Potential
<ul style="list-style-type: none"> • Up to 10% of Canines • Poor QoL characterized by severe itching, hair loss, tearing of skin and infection. • Current therapies are steroids, cyclosporin, and JAK2 Inhibitor • SOC is effective, but immunosuppressive and long-term side effects namely excessive eating, drinking, and urination • Steroids can cause endocrine disorders 	<ul style="list-style-type: none"> • High-dose flavored, oral, chewable 2nd generation antihistamine • Allegra (Sepracor); approved for allergic diseases in humans • Strong record of safety/efficacy • Safe in high doses • AtoKin is NOT immunosuppressive • Absent of side effects associated with SOC • No increased risk of infection • Potential use in both 1st line and long-term maintenance therapy 	<ul style="list-style-type: none"> • Of the 10% of canines with atopic dermatitis; half are chronic • AtoKin to be used in acute and chronic setting • Human generic fexofenadine costs \$0.50 / pill • Favorable chewable COGS of \$0.10-0.12 / pill • Gain premium pricing for beef flavored chewable tablet • Higher dose (vs. allergies in humans) should limit compounding

AtoKin's Efficacy Is Comparable to or Better than Steroids, the SOC, for Atopic Dermatitis



* $p < 0.05$ vs. baseline, + $p < 0.05$ in favor of fexofenadine vs. methylprednisolone

Note: CADESI Score = canine atopic dermatitis extent and severity index, lower demonstrates improvement

Source: Slovenian Veterinary Research (2009)

SentiKin: Post-operative Pain Market

Market / Medical Need

- SOC NSAIDs and narcotics, have significant side effects
- NSAIDs in addition to hematologic monitoring, can cause bleeding
- Fentanyl is a controlled narcotic and pets are often kept in the hospital during treatment
- Fentanyl is associated with significant sedation and respiratory depression

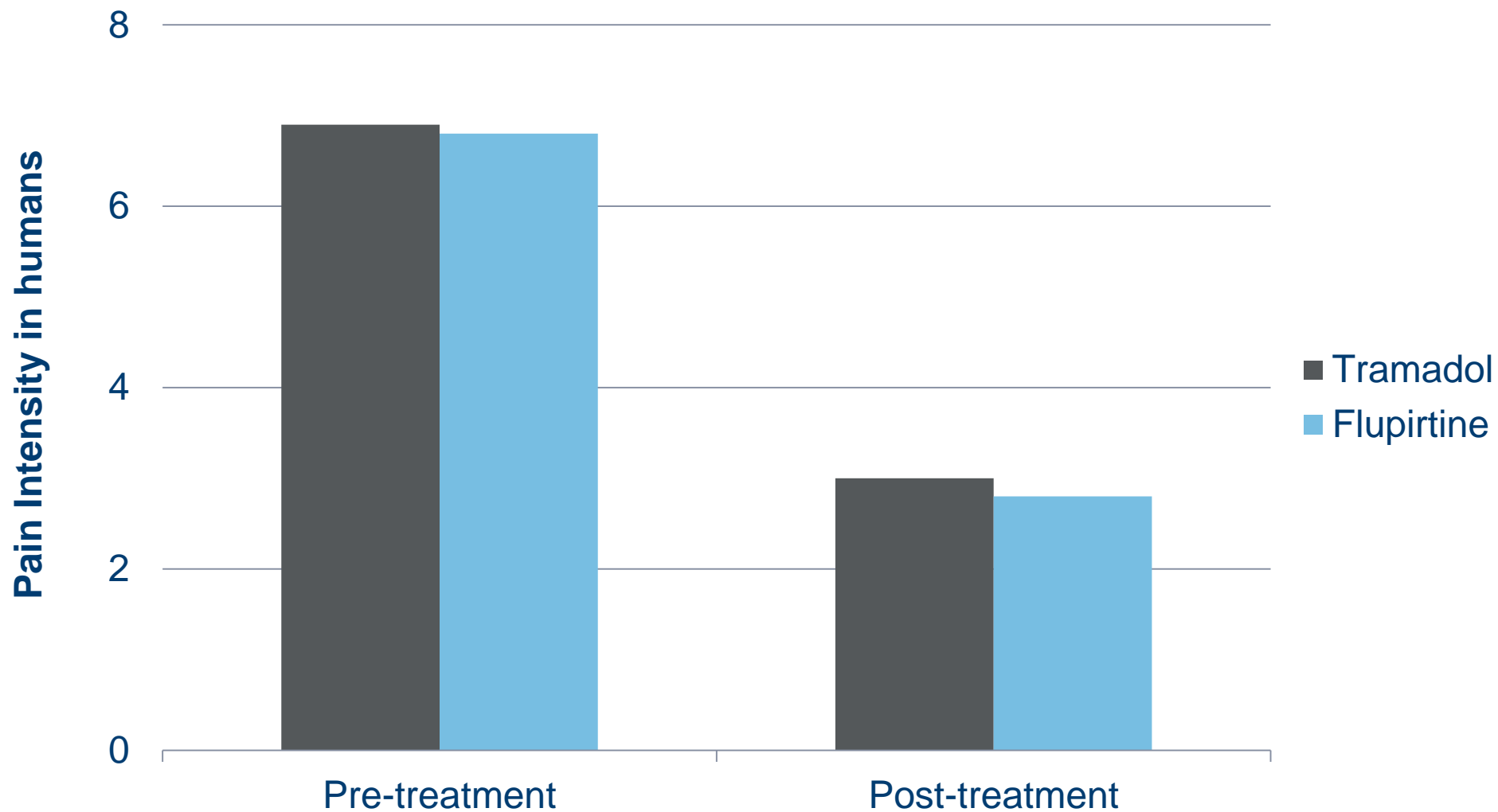
SentiKin (flupirtine)

- Centrally acting non-opioid, non-NSAID, and non-steroidal analgesic
- Active ingredient is approved OUS for short-term treatment of pain in humans
- Post-operative market
- Quick onset; more potent than NSAID
- Faster development path than OA
- Drug of choice as (1) doesn't cause bleeding issues and (2) has muscle relaxing property

Market Potential

- Charge > \$2 / day
- Potential for use in additional pain markets
- Post-operative pain market is ~ \$10M
- Surgery market is ~ \$80M / year

SentiKin Has Shown Efficacy Similar to Tramadol in Controlling Back Pain in Humans



Strong Investor Base

Name and Address of Beneficial Owner	Number of Shares Beneficially Owned	Percentage of Shares Beneficially Owned
5% or Greater Stockholders		
Adage Capital Partners, L.P.(8)	1,321,372	8.1 %
EcoR1 Capital Fund, L.P.(9)	873,187	5.4 %
Seth A. Klarman(10) The Baupost Group, L.L.C. SAK Corporation 10 St. James Avenue, Suite 1700 Boston, Massachusetts 02116	2,900,000	17.87 %
FMR LLC(11) Edward C. Johnson 3d 245 Summer Street Boston, Massachusetts 02210	1,100,000	6.78 %
Jennison Associates LLC(12) 466 Lexington Avenue New York, New York 10017	901,774	5.56 %

KINDRED BIOSCIENCES (KIN)

Model & Valuation

We Forecast a Probability-Weighted '17-22 CAGR of 29% on Revenues and Total Revenues of ~\$475M in 2022

Kindred – Income Statement Analysis 2013-2022E

(\$ in Thousands, Except EPS)

(Year Ended December 31)		2012A	2013	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	CAGR '17-22
Revenue	Prob weighting												
Canine (Dogs) Rx Medicines		-	-	-	1,740	55,482	127,488	189,495	260,930	330,698	366,895	397,332	26%
CereKin	85%	-	-	-	651	23,192	47,366	66,163	89,882	103,474	107,693	111,631	19%
AtoKin	85%	-	-	-	1,088	23,095	39,760	53,811	66,177	79,810	82,983	85,969	17%
SentiKin	85%	-	-	-	-	9,195	27,862	37,521	47,370	57,413	65,719	72,232	21%
Other small molecule	50%	-	-	-	-	-	12,500	25,000	40,000	55,000	65,000	75,000	43%
Other biologics	70%	-	-	-	-	-	-	7,000	17,500	35,000	45,500	52,500	NM
Equine (Horses) Rx Medicines		-	-	-	-	-	-	5,435	17,679	27,630	38,395	45,058	NM
CereKin	40%	-	-	-	-	-	-	3,317	13,399	21,145	30,754	36,238	NM
SentiKin	40%	-	-	-	-	-	-	2,119	4,280	6,484	7,641	8,819	NM
Other small molecule		-	-	-	-	-	-	-	-	-	-	-	
Other biologics		-	-	-	-	-	-	-	-	-	-	-	
Feline (Cats) Rx Medicines		-	-	-	-	-	-	-	-	-	-	-	
KIND-006		-	-	-	-	-	-	-	-	-	-	-	
Other small molecule		-	-	-	-	-	-	-	-	-	-	-	
Other biologics		-	-	-	-	-	-	-	-	-	-	-	
EU Royalties (12% on EU sales)		-	-	-	-	146	4,660	10,709	15,918	21,918	27,779	30,819	46%
Total Revenue		-	-	-	1,740	55,628	132,148	205,639	294,527	380,246	433,068	473,209	29%
Growth (% y/y)							138%	56%	43%	29%	14%	9%	

Source: Leerink Partners and Company Reports

DOGS

- Detailed “patient-based” models in canine osteoarthritis, atopic dermatitis, and post-operative pain
- Includes analysis compared to competitive products and expected pricing dynamics
- Probability weightings reflect what we believe to be a highly de-risked strategy for lead products, assume one additional small molecule product and 70% probability of one cancer biologic

HORSES

- Basic model developed for equine osteoarthritis (laminitis) and post-operative pain
- High pricing potential to target performance / high income horses presents an attractive oppt'y
- Current probability weightings are reflective of earlier stage and tied to outcome of CereKin/ SentiKin in dogs

CATS

- Not currently included in our revenue forecasts
- Could present upside oppt'y

Source: Leerink Partners and Company Reports

We Forecast Significant SG&A Spend Relative to Consensus, with KIN Achieving Profitability in 2018

Kindred – Income Statement Analysis 2013-2022E

(\$ in Thousands, Except EPS)

(Year Ended December 31)	2012A	2013	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	CAGR '17-22
Total Revenue	-	-	-	1,740	55,628	132,148	205,639	294,527	380,246	433,068	473,209	29%
Growth (% y/y)						138%	56%	43%	29%	14%	9%	
COGS	-	-	-	422	27,814	62,110	90,481	120,756	152,098	173,227	189,284	25%
COGS (% of sales)				24%	50%	47%	44%	41%	40%	40%	40%	
Gross Profit	-	-	-	1,318	27,814	70,039	115,158	173,771	228,147	259,841	283,925	32%
				76%	50%	53%	56%	59%	60%	60%	60%	
SG&A	45	1,079	3,450	31,525	46,300	54,150	69,950	74,450	81,050	85,750	89,350	11%
SG&A (% of sales)				nm	83%	41%	34%	25%	21%	20%	19%	
R&D	75	3,141	13,000	18,500	22,200	26,640	31,968	36,763	42,278	45,237	47,499	12%
R&D (% of sales)				nm	40%	20%	16%	12%	11%	10%	10%	
Operating Income	(120)	(4,219)	(16,450)	(48,707)	(40,686)	(10,751)	13,240	62,557	104,820	128,854	147,076	NM
Operating Margin (% of sales)							6.4%	21.2%	27.6%	29.8%	31.1%	
Total Other Income/ (Expense)	0	6	90	84	38	10	10	46	119	214	323	
Pre-tax Income	(119)	(4,213)	(16,360)	(48,623)	(40,648)	(10,741)	13,250	62,603	104,939	129,068	147,399	
Taxes							0	3,799	18,591	27,003	33,381	NM
Rate (% of pre-tax income)						0%	0%	6%	18%	21%	22%	
Net Income	(119)	(4,213)	(16,360)	(48,623)	(40,648)	(10,741)	13,250	58,804	86,348	102,065	114,018	NM
EPS		(\$1.13)	(\$0.86)	(\$2.44)	(\$2.04)	(\$0.54)	\$0.66	\$2.95	\$4.33	\$5.12	\$5.72	NM
Average Shares Outstanding		3,732	19,088	19,950	19,950	19,950	19,950	19,950	19,950	19,950	19,950	

Source: Leerink Partners and Company Reports

We tie SG&A costs to each product individually, and estimate costs will ramp up one quarter before launch with a significant 10M per (dog) product. Subsequent quarters are expected to see \$7M and then continuous \$5M spend through product sales.

Proper execution of Kindred's strategy is likely to take significant upfront spend to get launches right, in our opinion.

We Arrive at a \$32 Price Target Based on Our DCF Analysis to 2022E

Kindred - Discounted Cash Flow Analysis 2014-2022 - Estimates

Growth Rate	2.0%
WACC used	12.0%
Tax Rate 2013	0.0%
Cash YE2013	\$123,703
Debt YE2013	\$0.0
% of Enterprise Value from Terminal Value	85%

Kindred DCF Valuation Analysis						
Terminal Value	Discount rate					
		10.0%	11.0%	12.0%	13.0%	14.0%
	-1.0%	\$34	\$30	\$27	\$24	\$22
	0.0%	\$36	\$32	\$28	\$25	\$23
	1.0%	\$39	\$34	\$30	\$27	\$24
	2.0%	\$42	\$37	\$32	\$28	\$25
	3.0%	\$47	\$40	\$35	\$30	\$27
	4.0%	\$53	\$44	\$38	\$33	\$29

(\$ in Thousands, Except EPS)	Year Ended December 31st,									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Free Cash Flow (Net Income)	(\$16,360)	(\$48,623)	(\$40,648)	(\$10,741)	\$13,250	\$58,804	\$86,348	\$102,065	\$114,018	
Discounted Free Cash Flow	(\$16,360)	(\$45,945)	(\$34,294)	(\$8,091)	\$8,912	\$35,312	\$46,297	\$48,861	\$48,735	
Terminal Value	\$1,140,184									
Discounted Terminal Value	\$487,349									
Enterprise Value	\$570,775									
Less Debt	\$0									
Plus Cash	\$123,703									
Implied Cash From Options Exercise	\$13,996									
Equity Value	\$708,475									
Shares Outstanding	19,950									
Shares Outstanding Incl. Options	22,090									
Price/Share	\$32									

Source: Leerink Partners and Company Reports

\$32 Price Target implies a P/E of 16x on 2020E EPS, assuming a 15% discount rate.

DCF Scenario Analyses Demonstrate Manageable, if Any, Downside Risk, in Our Opinion**Kindred - Scenario Analyses on DCF**

<i>Scenarios</i>	<i>Price Target</i>
Bear Case - CereKin Fails/ AtoKin, SentiKin Succeed	\$21
Other Small Molecules, Biologics Fail/ CereKin, AtoKin, SentiKin Succeed	\$25
Either AtoKin or SentiKin Fails/ CereKin and the Other Succeed	\$27-28
No Success Outside Dogs (i.e. Horse Programs Fail)	\$28
Base	\$32
CereKin, AtoKin, SentiKin All Succeed	\$40
Bull Case - All Modeled Products Succeed	\$50

Source: Leerink Partners

If CereKin fails, we estimate that \$11 of our DCF valuation would be at risk, although success of AtoKin & SentiKin would still offer an attractive outlook for KIN at current price levels.

Comparables Analysis Also Demonstrates Room for Upside

Kindred - Comparables Analysis on 2018 Sales Estimates

	2018 Sales	P/S Multiple	Price Target
KIN	\$205,639	3.1x	\$32
Large Biotech		4.6x	\$47
Mid Biotech		3.1x	\$32
Small Biotech		4.6x	\$47
Animal Health (ex-PETX)		2.5x	\$26
Animal Health (incl-PETX)		2.8x	\$29

Source: Leerink Partners and FactSet

Note:

- **Large Biotech:** ALXN (OP), AMGN (MP), CELG (OP), GILD (OP), ACOR (OP), BIIB (OP), REGN (OP)
- **Mid Biotech:** PCYC (MP), SGEN (OP), VRTX (OP), CBST (OP), AEGR (OP), AMAG (OP), AMRN (OP), AUXL (OP), BMRN (OP), NPSP (OP), MDCO (OP), UTHR (MP), ALKS (OP)
- **Small Biotech:** CLDX (OP), ENTA (OP), IDIX (OP), PBXI (OP), TSRO (OP), ALNY (OP), CLVS (OP), RCPT (OP), SNSS (OP), DYAX (MP), GWPH (OP), HPTX (OP), RPTP (OP), GEVA (OP), IMGN (MP)
- **Animal Health:** ZTS, DPH-LON, PETX

Source: Leerink Partners and FactSet

Disclosures Appendix

Analyst Certification

I, Seamus Fernandez, certify that the views expressed in this report accurately reflect my views and that no part of my compensation was, is, or will be directly related to the specific recommendation or views contained in this report.

Distribution of Ratings/Investment Banking Services (IB) as of 03/31/14				
Rating	Count	Percent	IB Serv./Past 12 Mos.	
			Count	Percent
BUY [OP]	131	68.23	46	35.11
HOLD [MP]	61	31.77	3	4.92
SELL [UP]	0	0.00	0	0.00

Explanation of Ratings

Outperform (Buy): We expect this stock to outperform its benchmark over the next 12 months.

Market Perform (Hold/Neutral): We expect this stock to perform in line with its benchmark over the next 12 months.

Underperform (Sell): We expect this stock to underperform its benchmark over the next 12 months. The degree of outperformance or underperformance required to warrant an Outperform or an Underperform rating should be commensurate with the risk profile of the company.

For the purposes of these definitions the relevant benchmark will be the S&P 600® Health Care Index for issuers with a market capitalization of less than \$2 billion and the S&P 500® Health Care Index for issuers with a market capitalization over \$2 billion.

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