

Reason for report:

**ESTIMATE CHANGE****KINDRED BIOSCIENCES, INC.****CereKin Fails, Price Target Cut to \$11.25; Two Trial Catalysts Warrant Support**

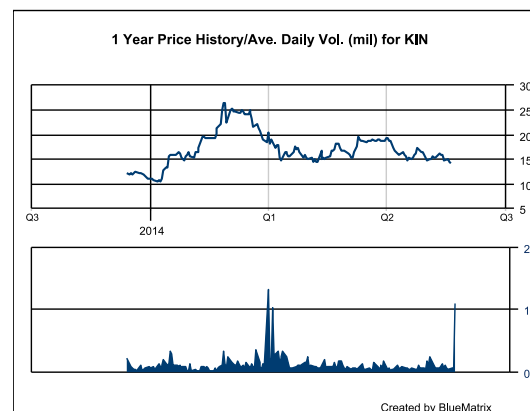
• **Bottom Line:** The failure of KIN's first pivotal trial in dogs with CereKin in osteoarthritis is a major disappointment. As a result, we are removing CereKin sales from our model completely but making no changes to our risk-adjusted forecasts for KIN's remaining products. Our price target drops from \$29/shr to \$11.25/shr as we assumed a high probability of success for CereKin in our model, and our R&D forecasts are unchanged. And while shares could trade below the aftermarket price of \$9.50/shr (KIN has ~\$6/shr in cash), with two pivotal trials expected to complete near year-end and what likely are less subjective clinical endpoints/evaluations, we are not sellers at these levels. Despite several emerging questions, we think it is very premature to call the KIN model fundamentally flawed and see several opportunities for upside from here.

• **CereKin not moving forward in dogs; mgmt hopeful regarding development in horses.** Although KIN noted that CereKin (diacerein at 5 & 20mg) failed in the canine osteoarthritis study, mgmt believes that the drug showed a biologic effect consistent with that demonstrated in humans, but that statistical variability and a higher-than-expected placebo effect negatively impacted the study. That said, the per protocol evaluation, which is very similar to a stringent intention-to-treat (ITT) analysis, did not reach statistical significance at any of the timepoints. Mgmt noted that the agency "frowns upon" repeat studies following a failed trial and has no plans to move CereKin forward in dogs. Mgmt remains hopeful for CereKin in horses but provided no timing updates. Nonetheless, we are removing peak CereKin U.S. sales of \$146M in dogs and horses as well as pot'l EU royalties from our model at this time.

• **AtoKin & SentiKin trials on track to complete "near year-end"; increased recruitment possible to bring power to 95%+.** With two pivotal studies underway for AtoKin in atopic dermatitis and SentiKin in post-operative pain, KIN has critical shots on goal to validate its model of rapid cost-effective clinical development and product launches. And while mgmt sees few problems in clinical execution for CereKin, having achieved all of its expected targets with few protocol violations, the primary issue under evaluation is the unexpected placebo response on the highly subjective, owner evaluated, Canine Brief Pain Inventory (CBPI) endpoint. By contrast, SentiKin is a short-term evaluation of pain and treatment failure by the vet and AtoKin is an evaluation by both the vet on validated Canine Atopic Dermatitis Lesion Index (CADLI) endpoint and a more subjective evaluation by the owner on pruritis visual analog score (PVAS). Follow up conversations with mgmt suggest possibility of increasing recruitment to maximize probability of success and minimize any potential statistical skew or variability from an inflated placebo effect.

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

<b>S&amp;P 600 Health Care Index:</b>	<b>1,314.55</b>
<b>Price:</b>	<b>\$14.21</b>
Price Target:	\$11.25 from \$29.00
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):	\$272.8
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	0.0A	0.0A	0.0	0.0	0.0	(\$0.38)A	(\$0.42)A	(\$0.40)	(\$0.51)	(\$1.72)	NM
2015E - New	0.0	0.0	0.0	\$1.1	\$1.1	(\$0.55)	(\$0.59)	(\$0.76)	(\$0.88)	(\$2.79)	NM
2015E - Old	0.0	0.0	\$0.1	\$1.6	\$1.7	(\$0.55)	(\$0.70)	(\$0.93)	(\$1.01)	(\$3.20)	NM
2016E - New	--	--	--	--	\$32.4	--	--	--	--	(\$3.06)	NM
2016E - Old	--	--	--	--	\$55.6	--	--	--	--	(\$2.81)	NM

Source: Company Information and Leerink Partners LLC Research  
Revenues (\$ 'MM); GAAP EPS; IPO in Dec. 2013; secondary closed 4/8/14

## INVESTMENT THESIS

**We rate KIN Outperform.** KIN is a development stage biopharmaceutical company exclusively focused on bringing novel therapies for the treatment of pets (dogs, cats, & horses) to market. With two products in pivotal studies poised to read out "around year-end 2014," an additional 7 products in development, and some 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 \$11.25/shr assumes an 85% probability of technical success for AtoKin & SentiKin.

## CHANGES TO 2014-2022 MODEL FORECASTS

(Revenues in 000s)

Total Revenue Forecasts									
	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E
New	\$0	\$1,088	\$32,382	\$82,834	\$132,181	\$185,687	\$248,075	\$285,929	\$316,293
Old	0	1,740	55,628	132,148	205,639	294,527	380,246	433,068	473,209
Difference	\$0	(\$652)	(\$23,246)	(\$49,314)	(\$73,458)	(\$108,840)	(\$132,171)	(\$147,139)	(\$156,916)

Total Adjusted EPS Forecasts									
	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E
New	(\$1.72)	(\$2.79)	(\$3.06)	(\$2.21)	(\$1.30)	\$0.03	\$1.35	\$2.14	\$2.78
Old	(\$1.72)	(\$3.20)	(\$2.81)	(\$1.09)	\$0.04	\$2.48	\$4.31	\$5.08	\$5.66
Difference	\$0.00	\$0.41	(\$0.25)	(\$1.12)	(\$1.34)	(\$2.45)	(\$2.96)	(\$2.94)	(\$2.88)

Source: Company Information and Leerink Partners LLC Research

## Product Revenue Forecast Changes

(\$ in thousands)

(Canine) CereKin Forecasts									
	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E
New	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Old	0	651	23,192	47,366	66,163	89,882	103,474	107,693	111,631
Difference	\$0	(\$651)	(\$23,192)	(\$47,366)	(\$66,163)	(\$89,882)	(\$103,474)	(\$107,693)	(\$111,631)

(Equine) CereKin Forecasts									
	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E
New	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Old	0	0	0	0	3,317	13,399	21,145	30,754	36,238
Difference	\$0	\$0	\$0	\$0	(\$3,317)	(\$13,399)	(\$21,145)	(\$30,754)	(\$36,238)

Source: Company Information and Leerink Partners LLC Research

## P&L Forecast Changes

(\$ in thousands)

Total SG&A Forecasts									
	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E
New	\$9,978	\$27,025	\$43,500	\$49,900	\$54,900	\$57,900	\$63,900	\$67,300	\$70,000
Old	<u>9,978</u>	<u>35,525</u>	<u>50,300</u>	<u>54,150</u>	<u>69,950</u>	<u>74,450</u>	<u>81,050</u>	<u>85,750</u>	<u>89,350</u>
Difference	\$0	(\$8,500)	(\$6,800)	(\$4,250)	(\$15,050)	(\$16,550)	(\$17,150)	(\$18,450)	(\$19,350)

SG&A Forecasts (% of Total Sales)									
	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E
New	nm	nm	134.3%	60.2%	41.5%	31.2%	25.8%	23.5%	22.1%
Old	<u>nm</u>	<u>nm</u>	<u>90.4%</u>	<u>41.0%</u>	<u>34.0%</u>	<u>25.3%</u>	<u>21.3%</u>	<u>19.8%</u>	<u>18.9%</u>
Difference			43.9%	19.2%	7.5%	5.9%	4.5%	3.7%	3.2%

R&D Forecasts									
	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E
New	\$22,137	\$28,000	\$32,200	\$37,030	\$44,436	\$51,101	\$58,767	\$62,880	\$66,024
Old	<u>22,137</u>	<u>28,000</u>	<u>32,200</u>	<u>37,030</u>	<u>44,436</u>	<u>51,101</u>	<u>58,767</u>	<u>62,880</u>	<u>66,024</u>
Difference	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

R&D Forecasts (% of Total Sales)									
	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E
New	nm	nm	99.4%	44.7%	33.6%	27.5%	23.7%	22.0%	20.9%
Old	<u>nm</u>	<u>nm</u>	<u>57.9%</u>	<u>28.0%</u>	<u>21.6%</u>	<u>17.4%</u>	<u>15.5%</u>	<u>14.5%</u>	<u>14.0%</u>
Difference			41.5%	16.7%	12.0%	10.1%	8.2%	7.5%	6.9%

Tax Rate Forecasts									
	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E
New	0.0%	0.0%	0.0%	0.0%	0.0%	-8.3%	-0.5%	-0.5%	-0.6%
Old	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>-1.3%</u>	<u>-0.1%</u>	<u>5.3%</u>	<u>11.3%</u>	<u>14.4%</u>
Difference	0.0%	0.0%	0.0%	0.0%	1.3%	-8.2%	-5.8%	-11.8%	-15.0%

Source: Company Information and Leerink Partners LLC Research

## VALUATION

We value KIN at \$11.25/share. Our price target is based on our DCF valuation, which assumes a 12% discount rate on sales and profits through 2022E and applies a 2% terminal growth rate. This equates to 17x 2020E EPS of \$1.35 discounted back 5 years at a 15% discount rate. Our analysis of a wide range of potential comparable companies suggests a price range from \$18/shr (animal health comps) to \$27/shr (mid-cap 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: its success is dependent on the clinical and regulatory outcome of its pipeline assets which positive data and approvability are not assured.
- Commercial Risk: KIN plans to independently sell its products 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.

## Kindred - Income Statement Analysis 2013-2022E

(\$ in Thousands, Except EPS)												
(Year Ended December 31)		2013	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	CAGR '17E-22E
Revenue	Prob weighting											
Canine (Dogs) Rx Medicines		-	-	1,088	32,290	80,122	123,332	171,047	227,223	259,201	285,701	29%
CereKin	0%	-	-	-	-	-	-	-	-	-	-	NM
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		-	-	-	-	-	2,119	4,280	6,484	7,641	8,819	NM
CereKin	0%	-	-	-	-	-	-	-	-	-	-	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)		-	-	-	91	2,712	6,730	10,360	14,368	19,087	21,773	52%
Total Revenue		-	-	1,088	32,382	82,834	132,181	185,687	248,075	285,929	316,293	31%
Growth (% y/y)						156%	60%	40%	34%	15%	11%	
COGS		-	-	272	16,191	38,932	58,160	76,132	99,230	114,371	126,517	27%
COGS (% of sales)				25%	50%	47%	44%	41%	40%	40%	40%	
Gross Profit		-	-	816	16,191	43,902	74,021	109,556	148,845	171,557	189,776	34%
			nm	75%	50%	53%	56%	59%	60%	60%	60%	
SG&A		1,079	9,978	27,025	43,500	49,900	54,900	57,900	63,900	67,300	70,000	7%
SG&A (% of sales)			nm	nm	134%	60%	42%	31%	26%	24%	22%	
R&D		3,141	22,137	28,000	32,200	37,030	44,436	51,101	58,767	62,880	66,024	12%
R&D (% of sales)			nm	nm	99%	45%	34%	28%	24%	22%	21%	
Operating Income		(4,219)	(32,115)	(54,209)	(59,509)	(43,028)	(25,315)	554	26,179	41,377	53,752	NM
Operating Margin (% of sales)							-19.2%	0.3%	10.6%	14.5%	17.0%	
Total Other Income/ (Expense)		6	90	84	38	10	10	46	119	214	323	
Pre-tax Income		(4,213)	(32,025)	(54,125)	(59,471)	(43,018)	(25,305)	600	26,298	41,591	54,075	
Change in Unrealized Gain / loss												
Taxes							0	0	0	0	0	NM
Rate (% of pre-tax income)						0%	0%	-8%	0%	-1%	-1%	
Net Income		(4,213)	(32,025)	(54,125)	(59,471)	(43,018)	(25,305)	600	26,298	41,591	54,075	NM
EPS		(\$1.13)	(\$1.72)	(\$2.79)	(\$3.06)	(\$2.21)	(\$1.30)	\$0.03	\$1.35	\$2.14	\$2.78	NM
Average Shares Outstanding		3,732	18,625	19,426	19,426	19,426	19,426	19,426	19,426	19,426	19,426	

Source: Leerink Partners and Company Reports

## 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.

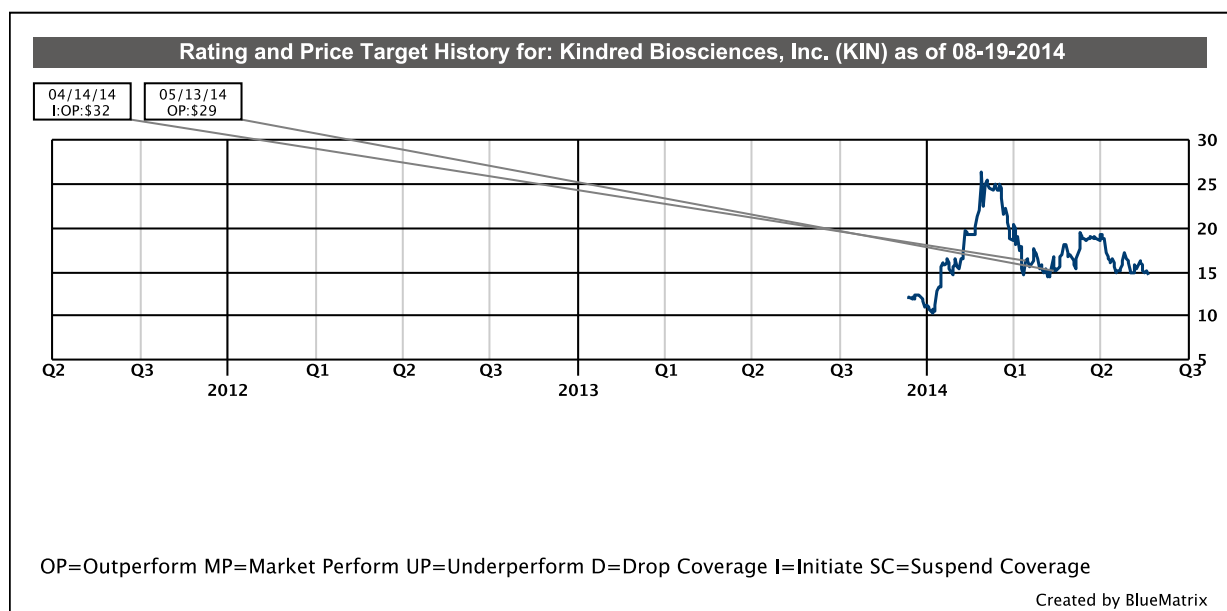
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Distribution of Ratings/Investment Banking Services (IB) as of 06/30/14				
Rating	Count	Percent	IB Serv./Past 12 Mos.	
			Count	Percent
BUY [OP]	138	69.00	50	36.20
HOLD [MP]	62	31.00	2	3.20
SELL [UP]	0	0.00	0	0.00

## 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.

## Important Disclosures

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**In the past 12 months, the Firm has received compensation for providing investment banking services to Kindred Biosciences, Inc. .**

**Leerink Partners LLC makes a market in Kindred Biosciences, Inc.**

**Leerink Partners LLC has acted as the manager for a public offering of Kindred Biosciences, Inc. in the past 12 months.**

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