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Changes	Previous	Current
Rating:		Buy
Fundamental Trend:		Improving
Price Target:	\$25.00	\$16.00
FY14E Rev M:		\$0.0
FY15E Rev M:	\$2.3	\$0.3
FY16E Rev M:	\$44.0	\$18.0
FY14E EPS:		(\$1.66)
FY15E EPS:	(\$2.11)	(\$2.04)
FY16E EPS:	(\$1.81)	(\$2.48)

Profile		
Price:		\$14.21
52 Wk Range:	\$8.75	- \$26.99
Avg Daily Vol:		81,100
Shares Out M:*		19.4
Market Cap M:*		\$276.0
Insiders Own:		24%
Short Interest:		4.7%
BV/Sh:		\$5.65
Est LT EPS Gr:		15%
Net Cash/Sh:*		\$5.79
Debt / Capital:		0%
Year Ends:		Dec.

\*Fully diluted share include recent secondary equity offering on 4/8/14

Rev (M)	2014E	2015E	2016E
Mar	\$0.0A	-	-
Jun	\$0.0A	-	-
Sep	\$0.0	-	-
Dec	\$0.0	-	-
FY	\$0.0	\$0.3	\$18.0

EPS	2014E	2015E	2016E
Mar	(\$0.38)A	-	-
Jun	(\$0.42)A	-	-
Sep	(\$0.42)	-	-
Dec	(\$0.44)	-	-
FY	(\$1.66)	(\$2.04)	(\$2.48)
FY P/E	NA	NA	NA
FY EV/S	NA	NA	9.1x

Management	
CEO	Richard H. Chin
COO	Denise Bevers

August 21, 2014  
Institutional Research

**Kindred Biosciences, Inc.**  
(KIN - \$14.21)

**BUY**  
Price Target: \$16

## CereKin Results Miss Primary Endpoint But Other Pipeline Programs Continue. Reiterate BUY Rating, Lowering Price Target To \$16.

*Kindred Biosciences develops innovative small molecule and biologic therapeutics for cats, dogs and horses.*

### OUR CALL

Yesterday, after the close, KIN announced that its pivotal field study of CereKin, an interleukin-1 inhibitor for the control of pain and inflammation associated with osteoarthritis (OA) in dogs, did not meet its primary endpoint. While this setback to the Company's lead drug candidate CereKin will put pressure on the stock over the near-term, we believe investors should focus on the company's portfolio of products that are still being developed. We continue to be encouraged by the progress within KIN's pipeline of over a dozen drug candidates and believe that with a total addressable market over \$500M, KIN is well-positioned in the lucrative companion animal therapeutics market.

	3Q14E		4Q14E		FY14E		FY15E	
	Rev	EPS	Rev	EPS	Rev	EPS	Rev	EPS
<b>Actuals:</b>	--	--	--	--	--	--	--	--
C-H Previous Est.:	\$0.0	(\$0.42)	\$0.0	(\$0.44)	\$0.0	(\$1.66)	\$2.3	(\$2.11)
Prior Consensus Est.:	\$0.0	(\$0.45)	\$0.0	(\$0.49)	\$0.0	(\$1.75)	\$3.2	(\$2.33)
C-H Revised Est.:	\$0.0	(\$0.42)	\$0.0	(\$0.44)	\$0.0	(\$1.66)	\$0.3	(\$2.04)

Source: Kindred Biosciences, Inc., First Call, Craig-Hallum Capital Group

### KEY TAKEAWAYS

- CereKin (interleukin-1 inhibitor for canine OA) - Management announced their pivotal field study did not meet its primary endpoint. The study was a randomized, double-blind, placebo-controlled study evaluating the safety and efficacy of two doses of CereKin (5 mg/kg and 20 mg/kg). KIN is still analyzing the data, but stated that the lack of effect appears to be due primarily to a higher-than-expected placebo response rate (typically 40% to 45% in humans) and statistical variability. The dropout rate (which must be counted as non-responders) was higher than expected and statistical significance was not achieved for the primary endpoint at the 8-week time period. Management said that the detailed results will be submitted for a presentation at an upcoming scientific meeting.
- Other Programs - On their conference call, management said that this setback may result in acceleration of their AtoKin and SentiKin programs. However, we believe this may be challenging for SentiKin because of enrollment of subjects. Unlike their CereKin trial, the AtoKin and SentiKin studies are single-arm studies which require lower thresholds of statistical significance (p=0.05 or below).
  - AtoKin (canine atopic dermatitis) - Estimated marketing approval and launch by end of 2015.
  - SentiKin (canine post-operative pain) - Estimated marketing approval and launch by end of 2015.









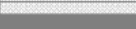
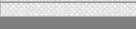


**Financial Position** - As of 6/30/14, Cash & equivalents were \$112.4 million and for reference their total CereKin program costs were \$4 million which we believe leaves KIN in good financial position. Management reiterated that they do not believe they will have to raise additional capital in order to get to break-even profitability.

## STOCK OPPORTUNITY

We believe that Kindred Bioscience is extremely well positioned to bring novel and specifically targeted specialty pharmaceuticals for companion animals to the veterinary market. Its differentiated strategy includes (1) utilizing chewable, beef-flavored pills; (2) performing all of their own clinical testing as opposed to using an outside CRO (contract research organization) which saves money and increases control; and (3) including horses in its target market (potentially quite lucrative because horses' larger size/weight requires higher dosages and owners' investment in horses is frequently more than dogs or cats, which leads to less product price sensitivity).

Our \$16 target price is a function of a long term DCF analysis (see page 7).

### Product Pipeline

Molecule	Indication	Pilot / Formulation	INAD Filed	Pivotal Study	NADA
<b>Small Molecule Product Candidates</b>					
CereKin – IL-1 inhibitor	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/ Process Development	Mfg. Process Development	Pivotal Study	PLA
<b>Biologic Product Candidates</b>					
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				

Source: Company presentation and Craig-Hallum.

### Potential Catalysts

Kindred Biosciences		
Expected Impact	Event	Date
	AtoKin trial initiation	complete
	SentiKin trial initiation	complete
	Management addition of Chief commercial officer	complete
	CereKin pivotal trial full enrollment	complete
	CereKin pivotal data	complete
+	AtoKin and SentiKin pivotal data released	4Q14
+	Atokin NADA filing	4Q14
+	SentiKin NADA filing	late 2014
+	Filing of INADs for additional drug candidates	ongoing
+	AtoKin potential approval and product launch	late 2015
+	SentiKin potential approval and product launch	late 2015
+	Additional indications for Cerekin and SentiKin	2016

### RISKS

We believe an investment in Kindred involves the following risks:

- **Government Regulation**

The animal therapeutic industry is highly regulated by the Center for Veterinary Medicine at both the state and federal level. Changes to existing regulation or new legislation could have a material adverse effect on KIN's business and financial performance.

- **Dependence On Suppliers**

The Company's business model relies on third parties to manufacture its products. Any malfunctions in the manufacturing processes of its suppliers or other sources of interruption to the supply of products could have an adverse impact on the Company's financial results.

- **Generic Products**

Generic products may be viewed as more cost effective than branded therapeutics. While the Company's IP should protect its products from generic entry in the near term, substantially cheaper generic versions of competing products, even if they are less efficacious, may represent a challenge to the commercialization of the Company's products.

- **Intellectual Property And Trade Secrets**

The Company's financial success is in part dependent on its ability to secure and enforce its substantial intellectual property. If KIN is forced to defend its intellectual property through litigation or if it is unable to maintain propriety of its trade secrets, the Company may incur extra expenses and financial results may be adversely affected.



- **Ongoing Need To Finance Growth**

While the Company currently has proforma ~\$118M of net cash on its balance sheet and estimates that its current capital is sufficient to fund its operations for the foreseeable future. The Company may seek additional capital in order to continue to fund its operations in the future. Such financing could be dilutive to stockholders.

## Financials

### Kindred Biosciences Financial Model

FISCAL YEAR ENDS DECEMBER

(\$ thousands)	Fiscal 2012A	Mar Q1-13A	Jun Q2-13A	Sep Q3-13A	Dec Q4-13A	Fiscal 2013A	Mar Q1-14A	Jun Q2-14A	Sep Q3-14E	Dec Q4-14E	Fiscal 2014E	Fiscal 2015E	Fiscal 2016E	Fiscal 2017E
<b>Total Revenue</b>	-	-	-	-	-	-	-	-	-	-	-	300	17,950	74,625
Cost of Sales	-	-	-	-	-	-	-	-	-	-	-	225	8,375	29,643
<b>Total Gross Margin</b>	-	-	-	-	-	-	-	-	-	-	-	75	9,575	44,983
<b>Operating Expenses</b>														
Research and Development	75	220	220	954	1,747	3,141	4,498	5,639	5,800	6,000	21,937	24,850	29,805	34,920
General and Administrative	45	89	89	259	642	1,079	1,679	2,499	2,400	2,500	9,078	12,000	19,745	22,754
Sales and Marketing	0	0	0	0	0	0	0	0	0	0	0	2,800	8,100	9,756
<b>Total GAAP Operating Expenses</b>	120	309	309	1,213	2,389	4,220	6,177	8,138	8,200	8,500	31,015	39,950	58,050	68,030
<b>GAAP Income (Loss) from Operations</b>	(120)	(309)	(309)	(1,213)	(2,389)	(4,220)	(6,177)	(8,138)	(8,200)	(8,500)	(31,015)	(39,875)	(48,475)	(23,047)
Non-GAAP Income (Loss) from Operations	(120)	(309)	(309)	(1,213)	(2,389)	(4,220)	(6,177)	(8,138)	(8,200)	(8,500)	(31,015)	(39,875)	(48,475)	(23,047)
Interest income	0	0	0	0	0	0	9	28	16	16	69	52	40	24
Interest Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Income	0	0	0	3	3	6	0	0	0	0	0	0	0	0
<b>Pre-tax GAAP Income</b>	(120)	(309)	(309)	(1,210)	(2,386)	(4,214)	(6,168)	(8,110)	(8,184)	(8,484)	(30,946)	(39,823)	(48,435)	(23,023)
Income Tax (benefit)	0	-	-	-	-	0	-	-	-	-	0	0	0	(1,943)
<b>GAAP Net Income</b>	(120)	(309)	(309)	(1,210)	(2,386)	(4,214)	(6,168)	(8,110)	(8,184)	(8,484)	(30,946)	(39,823)	(48,435)	(21,081)
Change in unrealized gains or losses on available-for-sale securities								(14)	0	0	(14)			
<b>Net Loss Attributable to Common Stockholders</b>	(2,155)	(1,082)	(1,117)	(1,210)	(2,386)	(5,795)	(6,168)	(8,124)	(8,184)	(8,484)	(30,960)	(39,823)	(48,435)	(21,081)
<b>EPS Attributable to Common Stockholders</b>	(\$0.06)	(\$0.10)	(\$0.10)	(\$0.40)	(\$0.64)	(\$1.32)	(\$0.38)	(\$0.42)	(\$0.42)	(\$0.44)	(\$1.66)	(\$2.04)	(\$2.48)	(\$1.07)
Weighted Avg. Shares Outstanding DILUTED	2,113	3,000	3,000	3,001	3,732	3,183	16,222	19,426	19,441	19,456	18,636	19,494	19,554	19,614
<b>Margin Analysis % of Sales</b>														
Total Gross Margin	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	53.3%	60.3%
Research and Development	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	8283%	166.0%	46.8%
General and Administrative	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	4000%	110.0%	30.5%
Sales and Marketing	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	933%	45%	13%
Total GAAP Operating Expense	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	323.4%	91.2%
<b>GAAP Operating Margin</b>	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	-270.1%	-30.9%
GAAP Pre-tax Income	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	-269.8%	-30.9%
Tax Rate (Effective)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>GAAP Net Margin</b>	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	-269.8%	-28.2%
<b>Percent Change (Yr/Yr)</b>														
Total Revenue	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	315.7%
Research and Development						NM	NM	NM	NM	243.4%	598.4%	13.3%	19.9%	17.2%
General and Administrative						NM	NM	NM	NM	289.6%	741.6%	32.2%	64.5%	15.2%
Sales and Marketing						NM	NM	NM	NM	NM	NM	NM	189.3%	20.4%
Total GAAP Operating Expense						NM	NM	NM	NM	255.8%	635.0%	28.8%	45.3%	17.2%
<b>GAAP Operating Income</b>						NM	NM	NM	NM	NM	NM	NM	NM	NM
GAAP Pre-tax Income						NM	NM	NM	NM	NM	NM	NM	NM	NM
GAAP Net Income						NM	NM	NM	NM	NM	NM	NM	NM	NM
<b>GAAP Earnings Per Share</b>						NM	NM	NM	NM	NM	NM	NM	NM	NM

## Revenue Build

### Kindred Biosciences, Inc. FISCAL YEAR ENDS DECEMBER

Revenue Build (\$ millions)	Fiscal 2013E	Mar Q1-14A	Jun Q2-14A	Sep Q3-14E	Dec Q4-14E	Fiscal 2014E	Fiscal 2015E	Fiscal 2016E	Fiscal 2017E
<b>Small Molecule Product Candidates</b>									
AtoKin - Atopic dermatitis (dogs)									
Total Revenues	0	0	0	0	0	0	300	13,700	49,950
Growth (% yr/yr)	NA	NA	NA	NA	NA	NA	NA	NA	265%
SentiKin - Post-operative pain (dogs)									
Total Revenues	0	0	0	0	0	0	0	3,750	16,975
Growth (% yr/yr)	NA	NA	NA	NA	NA	NA	NA	NA	353%
KIND-006 - Pro-motility [constipation] agent (cats)									
Total Revenues	0	0	0	0	0	0	0	0	3,000
Growth (% yr/yr)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Extended Release SentiKin - Post-Op pain (cats)									
Total Revenues	0	0	0	0	0	0	0	500	4,700
Growth (% yr/yr)	NA	NA	NA	NA	NA	NA	NA	NA	840.0%
KIND-00x - Fever (horse)									
Total Revenues	0	0	0	0	0	0	0	0	0
Growth (% yr/yr)	NA	NA	NA	NA	NA	NA	NA	NA	NA
KIND-00y - Appetite Stimulation (cats)									
Total Revenues	0	0	0	0	0	0	0	0	0
Growth (% yr/yr)	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Biologic Product Candidates</b>									
KIND-501 - Anti-VEGF fusion protein (dogs)									
Total Revenues	0	0	0	0	0	0	0	0	0
Growth (% yr/yr)	NA	NA	NA	NA	NA	NA	NA	NA	NA
KIND-502 - Anti-IgE antibody (dogs)									
Total Revenues	0	0	0	0	0	0	0	0	0
Growth (% yr/yr)	NA	NA	NA	NA	NA	NA	NA	NA	NA
KIND-504 - Cancer vaccine (dogs)									
Total Revenues	0	0	0	0	0	0	0	0	0
Growth (% yr/yr)	NA	NA	NA	NA	NA	NA	NA	NA	NA
KIND-507 - CLTA4-Ig fusion protein (dogs)									
Total Revenues	0	0	0	0	0	0	0	0	0
Growth (% yr/yr)	NA	NA	NA	NA	NA	NA	NA	NA	NA
KIND-506 - TNFR-Ig fusion protein (dogs)									
Total Revenues	0	0	0	0	0	0	0	0	0
Growth (% yr/yr)	NA	NA	NA	NA	NA	NA	NA	NA	NA
KIND-50x Erythropoietin (cats)									
Total Revenues	0	0	0	0	0	0	0	0	0
Growth (% yr/yr)	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Total Revenue</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>300</b>	<b>17,950</b>	<b>74,625</b>
Growth (% yr/yr)	NA	NA	NA	NA	NA	NA	NA	NA	316%

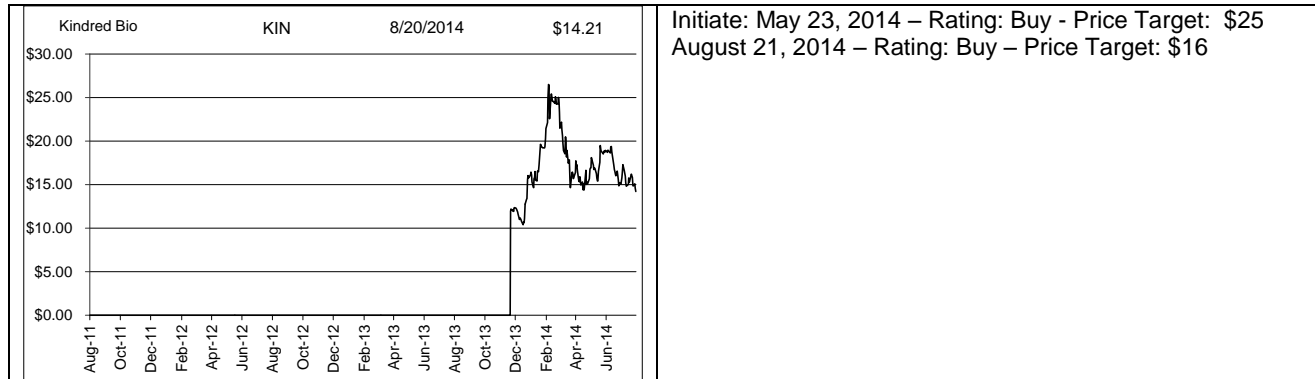
## Discounted Cash Flow Model

### Kindred Biosciences, Inc. Discounted Cash Flow Model

Estimates		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
(\$ in Thousands)											
Total Sales		0	300	17,950	74,625	152,005	192,286	232,666	267,566	291,647	300,397
Operating Profit		(31,015)	(39,875)	(48,475)	(23,047)	16,958	73,069	93,067	109,702	122,492	118,657
Less: Cash Taxes Paid		0	0	0	(1,943)	5,941	0	13,960	38,944	43,485	43,903
Operating Profit After Tax		(31,015)	(39,875)	(48,475)	(21,105)	11,017	73,069	79,107	70,758	79,007	74,754
Depreciation & Amortization		23	176	548	616	693	780	878	987	1,111	1,250
Fixed Cap Expenditures		107	2,114	1,163	1,244	1,331	1,424	1,524	1,630	1,745	1,867
Working Cap Increase		2,000	2,140	2,206	7,084	9,673	5,035	5,048	4,362	3,010	1,094
FCF		(33,099)	(43,954)	(51,296)	(28,817)	707	67,390	73,413	65,752	75,363	73,043
PV FCF		(29,034)	(33,821)	(34,623)	(17,062)	367	30,702	29,339	23,050	23,175	19,703
<b>Perpetual FCF</b>											
Base FCF		73,043									
Weighted Avg. Cost of Capital (k)		14.0%									
Perpetual Growth Rate (g)		3.0%									
Base Year		2013									
Perpetual Start Year		2023									
Perpetual Value		683,947									
PV of Perpetual Growth Period		184,490									
<b>Total FCF</b>											
Value of FCF		196,285									
<b>Intrinsic Value</b>											
Cash		112,438									
Debt		0									
After Tax ESO Liability		2,213									
Value of Equity		306,511									
Shares Outstanding		19,426									
<b>Intrinsic Value per Share</b>		<b>\$15.78</b>									

Sensitivity Analysis					
Terminal Period Variables			FCF Growth		
Cost of Capital	2.5%		3.0%	3.5%	4.0%
	12.5%	\$18.67	\$19.35	\$20.12	\$20.97
	13.0%	\$17.43	\$18.03	\$18.69	\$19.42
	13.5%	\$16.32	\$16.84	\$17.42	\$18.05
	14.0%	\$15.32	<b>\$15.78</b>	\$16.28	\$16.83
	14.5%	\$14.42	\$14.82	\$15.26	\$15.74
	15.0%	\$13.60	\$13.95	\$14.34	\$14.76



**REQUIRED DISCLOSURES**

Source: Thomson

**Ratings definitions:**

**Buy** rated stocks generally have twelve month price targets that are more than 20% above the current price. **Hold** rated stocks generally have twelve month price targets near the current price. **Sell** rated stocks generally have no price target and we would sell the stock.

**Fundamental trend definitions:**

**Improving** means growth rates of key business metrics are generally accelerating. **Stable** means growth rates of key business metrics are generally steady. **Mixed** means growth rates of some key business metrics are positive but others are negative. **Declining** means growth rates of key business metrics are generally decelerating.

**Ratings Distribution (6/30/2014)**

Rating	% Of Companies Covered	% With Investment Banking Relationships
Buy	76%	25%
Hold	22%	4%
Sell	2%	0%
Total	100%	20%

**Information about valuation methods and risks can be found in the “STOCK OPPORTUNITY” and “RISKS” sections, respectively, of this report.**

CHLM makes a market in this security.

CHLM has received investment banking revenue from the subject company in the last 12 months. CHLM expects to receive or intends to seek compensation for investment banking services from the subject company in the next three months.

Analysts receive no direct compensation in connection with the firm's investment banking business. Analysts may be eligible for bonus compensation based on the overall profitability of the firm, which takes into account revenues from all of the firm's business, including investment banking.

**OTHER DISCLOSURES**

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I, Charles Haff, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject security and issuer. No part of my compensation was, is or will be directly or indirectly related to the specific recommendations or views contained herein.