

## Vitae Pharmaceuticals, Inc. (VTAE)

Overweight

BI Ends Alzheimer's Collaboration; Remain Overweight but Lowering Target to \$16

### CONCLUSION

Boehringer Ingelheim has elected to terminate its BACE inhibitor partnership with Vitae and will return the rights to BI-1147560. We believe Vitae will have to seek another partner to bring the BACE inhibitor program forward, and therefore we are removing value for the program from our model. The partners are still examining diabetes drug VTP-34072 in a Phase II monotherapy study, however in light of the drug's failure in combination with metformin our expectations are low. We remain excited by the wholly owned autoimmune program VTP-43742, which recently entered the clinic. We expect proof-of-concept psoriasis data by year-end and multiple Phase II studies to begin in 2016. Vitae ended 1Q:15 with \$89 million in cash. We reiterate our Overweight rating, but are lowering our price target to \$16 from \$20.50.

- **BACE Program Returned to Vitae.** BI has terminated its BACE program license and collaboration with Vitae for "strategic business reasons." Rights to the program, including lead candidate BI-1147560 (also known as VTP-36951), will return to Vitae when the termination becomes effective on October 21st, 2015. We view this development as a clear setback for Vitae. Although the program is by no means dead in our view, we are skeptical of Vitae's ability to run a program of this size and cost solo. Therefore, we expect Vitae to seek a new partner to bring the program forward. Until that happens, we are removing value for the program from our forecasts.
- **VTP-34072 Diabetes Miss.** Vitae's other program with BI is also on shaky ground after lead compound VTP-34072 + metformin failed to display efficacy in lowering blood glucose in a Phase II trial. BI will continue to run the monotherapy arms of the study, but at this point our expectations are low and we do not ascribe value for VTP-34072 in our model.
- **RORγt Program Enters the Clinic.** Late last month, Vitae began Phase I single ascending dose trials of VTP-43742 in healthy volunteers. VTP-43742 is an inhibitor of RORγt, a key regulator in TH17 activation. TH17 cells produce multiple downstream pro-inflammatory cytokines including IL-17 and IL-21. Safety data is expected in 2H:15, but Vitae will commence an "overlapping" multiple ascending dose trial in moderate-to-severe psoriasis patients with top-line PoC data from that study by year-end. Vitae plans to initiate two Phase II trials in 2016 in one large and one orphan autoimmune disease.

### RISKS TO ACHIEVEMENT OF PRICE TARGET

Risks include clinical, regulatory and commercial. Vitae may be unable to sign new partnerships and its drugs may fail in the clinic. Vitae may be unable to file new INDs. Vitae will likely need to raise additional capital.

### COMPANY DESCRIPTION

Vitae is a structure-based small molecule drug discovery company.

PRICE: US\$10.38

TARGET: US\$16.00

Proj. EV of \$331M + mid-FY:16E net cash

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Changes	Previous	Current
Rating	—	Overweight
Price Tgt	US\$20.50	US\$16.00
FY15E Rev (mil)	—	US\$0.8
FY16E Rev (mil)	—	US\$1.0
FY15E EPS	—	US\$(1.75)
FY16E EPS	—	US\$(1.90)
<hr/>		
52-Week High / Low	US\$23.35 / US\$5.41	
Shares Out (mil)	21.8	
<i>Form 10Q dated May 8th</i>		
Market Cap. (mil)	US\$226.3	
Total Assets (\$mil)	91	
Avg Daily Vol (ooo)	159	
Book Value/Share	US\$3.92	
Net Cash Per Share	US\$4.06	
Debt to Total Capital	0.0%	
Div (ann)	NA	
Fiscal Year End	Dec	

### Price Performance - 1 Year



Source: Bloomberg

YEAR	REVENUE (US\$ m)						EARNINGS PER SHARE (US\$)					
	Mar	Jun	Sep	Dec	FY	FY RM	Mar	Jun	Sep	Dec	FY	FY P/E
2014A	1.2	1.2	6.2	0.2	8.7	26.0x	(8.24)	(8.57)	(1.06)	(0.40)	(3.61)	NM
2015E	0.2A	0.2	0.2	0.2	0.8	282.9x	(0.47)A	(0.42)	(0.42)	(0.45)	(1.75)	NM
2016E	0.3	0.3	0.3	0.3	1.0	226.3x	(0.44)	(0.47)	(0.48)	(0.51)	(1.90)	NM

Vitae went public in Sept 2014.

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## INVESTMENT RECOMMENDATION

We reiterate our Overweight rating; however, we are reducing our price target to \$16 from \$20.50, based on a projected enterprise value of \$331 million, down from \$407 million.

We have now removed all (\$146 million) value for Vitae's share of BI-1147560 (VTP-36951) in Alzheimer's disease due to BI's termination of the partnership.

We now value wholly owned VTP-43742 at \$214 million, up from \$169 million by applying our standard 5x multiple to 2024 psoriasis, lupus, and RA sales of \$2.3 billion discounted back at 60%, now through mid '16, rolled forward from YE:15. We now value topical VTP-38543 at \$117 million, up from \$91 million, by applying our standard 5x multiple to 2025 sales of \$2.7 billion discounted back at 65%, now through mid '16, rolled forward from YE:15. We view these discount rates as high with the potential to adjust upon clinical data.

To this we add mid '16 net cash of \$39 million and subtract \$6.2 million in notes outstanding. We divide our projected market cap of \$364 million by 23 million mid '16 shares, not including warrants as they are below the strike price, to arrive at our \$16 target.

**Vitae Pharmaceuticals**  
**Quarterly Earnings Estimates**  
(\$ in thousands except per share)

5/12/15

	<u>1QA</u>	<u>2QA</u>	<u>3QA</u>	<u>4QA</u>	<u>2014A</u>	<u>1QA</u>	<u>2QE</u>	<u>3QE</u>	<u>4QE</u>	<u>2015E</u>	<u>1QA</u>	<u>2QE</u>	<u>3QE</u>	<u>4QE</u>	<u>2016E</u>
<b>Revenues:</b>															
Collaborative Revenue	\$1,173	\$1,155	\$6,178	\$162	\$8,669	\$150	\$200	\$200	\$200	\$750	\$250	\$250	\$250	\$250	\$1,000
Product Sales	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Revenues</b>	<b>\$1,173</b>	<b>\$1,155</b>	<b>\$6,178</b>	<b>\$162</b>	<b>\$8,669</b>	<b>\$150</b>	<b>\$200</b>	<b>\$200</b>	<b>\$200</b>	<b>\$750</b>	<b>\$250</b>	<b>\$250</b>	<b>\$250</b>	<b>\$250</b>	<b>\$1,000</b>
<b>Operating Expenses:</b>															
Research and Development	4,548	4,877	4,799	5,080	19,305	7,506	7,500	7,500	8,000	30,506	8,000	8,500	9,000	9,500	35,000
General and Administrative	1,260	1,368	3,096	2,189	7,914	2,111	2,000	2,000	2,250	8,361	2,250	2,500	2,500	2,750	10,000
<b>Total Operating Expenses</b>	<b>\$5,808</b>	<b>\$6,246</b>	<b>\$7,896</b>	<b>\$7,269</b>	<b>\$27,219</b>	<b>\$9,617</b>	<b>\$9,500</b>	<b>\$9,500</b>	<b>\$10,250</b>	<b>\$38,867</b>	<b>\$10,250</b>	<b>\$11,000</b>	<b>\$11,500</b>	<b>\$12,250</b>	<b>\$45,000</b>
<b>Operating Income/(Loss)</b>	<b>(\$4,634)</b>	<b>(\$5,090)</b>	<b>(\$1,718)</b>	<b>(\$7,108)</b>	<b>(\$18,550)</b>	<b>(\$9,467)</b>	<b>(\$9,300)</b>	<b>(\$9,300)</b>	<b>(\$10,050)</b>	<b>(\$38,117)</b>	<b>(\$10,000)</b>	<b>(\$10,750)</b>	<b>(\$11,250)</b>	<b>(\$12,000)</b>	<b>(\$44,000)</b>
<b>Operating Margin</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>
Interest income, Net	(268)	(244)	(217)	(167)	(897)	(34)	0	0	0	(34)	0	0	0	0	0
Other Income	13	204	126	0	343	(207)	0	0	0	(207)	0	0	0	0	0
<b>PreTax Income/(Loss)</b>	<b>(\$4,889)</b>	<b>(\$5,130)</b>	<b>(\$1,809)</b>	<b>(\$7,275)</b>	<b>(\$19,103)</b>	<b>(\$9,707)</b>	<b>(\$9,300)</b>	<b>(\$9,300)</b>	<b>(\$10,050)</b>	<b>(\$38,357)</b>	<b>(\$10,000)</b>	<b>(\$10,750)</b>	<b>(\$11,250)</b>	<b>(\$12,000)</b>	<b>(\$44,000)</b>
<b>PreTex Margin</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>
Income Tax Benefit (Expense)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Tax Rate</i>	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%	0.0%
<b>Net Income/(Loss)</b>	<b>(\$4,889)</b>	<b>(\$5,130)</b>	<b>(\$1,809)</b>	<b>(\$7,275)</b>	<b>(\$19,103)</b>	<b>(\$9,707)</b>	<b>(\$9,300)</b>	<b>(\$9,300)</b>	<b>(\$10,050)</b>	<b>(\$38,357)</b>	<b>(\$10,000)</b>	<b>(\$10,750)</b>	<b>(\$11,250)</b>	<b>(\$12,000)</b>	<b>(\$44,000)</b>
<b>Net Margin</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>
<b>Net Income/(Loss) per Share</b>	<b>(\$8.24)</b>	<b>(\$8.57)</b>	<b>(\$1.06)</b>	<b>(\$0.40)</b>	<b>(\$3.61)</b>	<b>(\$0.47)</b>	<b>(\$0.42)</b>	<b>(\$0.42)</b>	<b>(\$0.45)</b>	<b>(\$1.75)</b>	<b>(\$0.44)</b>	<b>(\$0.47)</b>	<b>(\$0.48)</b>	<b>(\$0.51)</b>	<b>(\$1.90)</b>
Shares Outstanding	593	599	1,712	18,114	5,291	20,827	22,000	22,250	22,500	21,894	22,750	23,000	23,250	23,500	23,125

Source: Company reports and Piper Jaffray estimates

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### Analyst Certification — Edward A. Tenthoff, Sr Research Analyst — Benjamin J. Adler, Ph.D., Research Analyst

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