

## Vitae Pharmaceuticals, Inc. (VTAE)

Overweight

Diabetes Failure Takes Shares Lower, but Buy on Weakness for Autoimmune Program

### CONCLUSION

Boehringer Ingelheim partnered diabetes drug VTP-34072 failed in combination with metformin in a Phase II trial. Although a monotherapy arm is ongoing, our expectations are low and we are removing value for the drug, taking our price target to \$20.50 from \$23. VTAE shares on down today in a red tape and we are buyers for Vitae's wholly owned autoimmune program VTP-43742, which entered the clinic today. 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.

- VTP-34072 Diabetes Miss.** Partner BI enrolled 126 diabetics in a Phase II trial to receive 3 different doses of VTP-34072 monotherapy or a high dose of VTP-34072 + metformin combination vs. for 28 days. The primary endpoint is safety and tolerability after 6 weeks and the study assessed fasting blood glucose. Although results were not disclosed, the combo arm of VTP-34072+metformin failed to reach BI's predefined efficacy criteria. BI will continue to run the monotherapy arms of the study, but at this point our expectations are low and we are removing value for VTP-34072 from our model. VTAE shares opened down markedly lower; however, they have been recovering throughout the morning.
- RORγt Program Enters the Clinic.** This morning, 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.
- BACE Restart.** BI intends to move forward with backup BACE inhibitor BI-1147560 that is structurally distinct and may yield better tolerability. BI plans to begin a new Phase I trial by YE:15, which could trigger a \$7 million milestone to Vitae not currently in our model.

### RISKS TO ACHIEVEMENT OF PRICE TARGET

Risks include clinical, regulatory and commercial. Vitae's deals with BI may falter or 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\$15.19

Price as of close June 26, 2015

TARGET: US\$20.50

Proj. EV of \$407M + YE:15E net cash

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Changes	Previous	Current
Rating	—	Overweight
Price Tgt	US\$23.00	US\$20.50
FY15E Rev (mil)	—	US\$0.8
FY16E Rev (mil)	—	US\$1.0
FY15E EPS	—	US\$(1.75)
FY16E EPS	—	US\$(1.90)

52-Week High / Low US\$23.35 / US\$5.41  
Shares Out (mil) 21.8

Form 10Q dated May 8th

Market Cap. (mil)	US\$331.1
Total Assets (\$mil)	91.2
Avg Daily Vol (ooo)	141
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	38.1x	(8.24)	(8.57)	(1.06)	(0.40)	(3.61)	NM
2015E	0.2A	0.2	0.2	0.2	0.8	413.9x	(0.47)A	(0.42)	(0.42)	(0.45)	(1.75)	NM
2016E	0.3	0.3	0.3	0.3	1.0	331.1x	(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 \$20.50 from \$23 price target based on a projected enterprise value of \$407 million, down from \$469 million. We have removed all (\$62 million) value for Vitae's share of VTP-34072.

We continue to value Vitae's share of BI-1181181 at \$146 million by applying the same 10x multiple to 2024 Alzheimer's disease royalties of \$1.0 billion discounted back at 60% through YE:15. We believe the 10x multiples are appropriate for royalties and the 60% discount rates are appropriate for Phase I assets.

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

To this we add YE:15E net cash of \$63 million and subtract \$6.2 million in notes outstanding. We divide our projected market cap of \$462 million by 22.5 million shares, no longer including warrants as they are below the strike price to arrive at our \$20.50 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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			Count	Percent
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