

Mast Therapeutics (MSTX - \$ 0.63)

AIR001 in Pulmonary Arterial Hypertension (PAH) Phase II Study Results Encouraging

This morning, MSTX reported positive top-line results from the AIR001 in pulmonary arterial hypertension (PAH) Phase II study (AIR001-CS05).

- Details.** The reported results were from 29 out of 90 patients initially planned to enroll. The patient recruitment shortage was due to capital constraints. The results illustrated that all three doses exhibited improvement in the primary endpoint (median pulmonary vascular resistance [PVR]) and secondary efficacy endpoints, (median distances of 6-minute walk test [6MWD]). AIR001 was well-tolerated and without treatment related SAEs. Methemoglobin levels remained normal. Other secondary endpoints include hemodynamic measurements of cardiac output, mean right atrial pressure and pulmonary capillary wedge pressure at peak; and N-Terminal Pro-Brain Natriuretic Peptide (NT-proBNP). The AIR001-CS05 study was a multi-center, open-label, randomized, parallel-dose study to determine the safety and efficacy of AIR001 in PAH patients. Treatment duration was 16 weeks. The three doses were: 80 mg 1x/day after 2 weeks 46 mg 1x/day; 80 mg 4x/day after 2 weeks 46 mg 4x/day; and 46 mg 4x/day after 2 weeks 46 mg 4x/day. As a reminder, AIR001 is an intermittently nebulized formulation of nitrite that MSTX acquired from Aires Pharmaceuticals.
- Implications.** We view the results to be very encouraging as MSTX has clinically validated its second asset, AIR001 with evidence of hemodynamic activities. As such, it potentially can be used as a treatment in patients with PH associated with left heart disease or heart failure with preserved ejection fraction (HFpEF). We anticipate several (up to three) investigator-sponsored Phase IIa studies to start in 4Q14 with top-line results potentially available in 2H15. We believe any potential positive results could enhance MSTX share value. In our opinion, although AIR001 currently is not the main investor focus for the MSTX share value; the positive top-line results from the PAH Phase II study validate AIR001's value. This supports MSTX shareholders with a more diversified asset portfolio beyond MST-188 in sickle cell disease.
- Action.** We are reiterating our Buy rating and our \$2.50 target price to reflect the continued execution of corporate developments; including completion of the EPIC Phase III study, expansion of additional pipeline developments, and our peer comparable probability adjusted DCF analyses

Healthcare/Biotechnology

Ticker: **MSTX**
Rating: **Buy**
Price Target: **\$ 2.50**

Trading Data:

Last Price (09/05/2014)	\$ 0.63
52-Week High (1/22/2014)	\$ 1.10
52-Week Low (12/12/2013)	\$ 0.40
Market Cap. (MM)	\$ 76
Shares Out. (MM)	122

Earnings Estimates: (per share)

(Dec)	1Q	2Q	3Q	4Q	FY	P/E
FY-14E	-0.06A	-0.06A	-0.06	-0.06	-0.25	N.A.
FY-13A	-0.12	-0.09	-0.05	-0.06	-0.28	N.A.
FY-12A	-0.09	NA	-0.07	-0.08	-0.33	N.A.
FY-11A	NA	NA	NA	NA	-0.47	N.A.

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Source: Laidlaw & Company estimates

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Anticipated milestones in 2014 and beyond

Product	Indication	Event	Timing	Importance
MST-188	Vaso-occlusive crisis (VOC) in sickle cell disease (SCD)	Periodical updates on Phase III trial progress	2014/2015	***
		Completion of Phase III (EPIC) study	4Q15	***
		Report of Phase III study top-line results	Late 2015	****
		Potential NDA filing	1H16	***
		Potential approval	2017	****
	Acute limb ischemia	Report of Phase II study top-line results	Late 2015	***
	Embolic stroke	Report pre-clinical data	2Q15	***
	Heart failure	Potentially complete discussion with the FDA for trial design	4Q14	***
		Report pre-clinical data	1Q15	***
		Start Phase II study	1H15	***
Potentially report Phase II interim results		2H15	***	
AIR001	PH associated with heart failure with preserved ejection fraction (HFpEF),	Potentially start investigator-sponsored Phase II studies	4Q14	***

**** / ***** Major catalyst event that could impact share price very significantly while *** event is more informative

Source: Laidlaw & Company and company presentation

Figure 1: Income Statement

Mast Therapeutics – Income Statement														
(\$'000)	2011	2012	2013	1Q14	2Q14	3Q14E	4Q14E	2014E	2015E	2016E	2017E	2018E	2019E	2020E
Revenue														
MST-188 revenue	0	0	0					0	0	0	28,253	86,796	167,886	252,822
Net sales	0	0	0	-	-	-	-	0	0	0	0	0	0	0
Licensing revenue	0	0	0	-	-	-	-	0	0	0	0	0	0	0
Grant revenue	0	0	0	-	-	-	-	0	0	0	0	0	0	0
Total revenue	0	0	0	-	-	-	-	0	0	0	28,253	86,796	167,886	252,822
Costs of goods	0	0		-							2,543	7,812	15,110	22,754
Research and development	5,758	8,088	12,902	4,281	4,820	4,868	5,014	18,983	21,641	23,156	19,682	18,698	19,259	19,837
Selling, general and administrative	7,190	7,519	8,518	2,266	2,370	2,441	2,539	9,616	10,289	10,598	11,552	12,591	13,725	14,823
Marketing and sales											20,000	23,000	24,380	25,599
Transaction-related expenses	411	(70)	80	280	(11)	10	18	297			0	0	0	0
Depreciation and amortization	38	90	40	11	23	23	23	80	80	80	80	80	80	80
Total Operating Expenses	13,397	15,628	21,539	6,839	7,202	7,342	7,594	28,977	32,011	33,834	53,857	62,182	72,554	83,093
Operating Incomes (losses)	(13,397)	(15,628)	(21,539)	(6,839)	(7,202)	(7,342)	(7,594)	(28,977)	(32,011)	(33,834)	(25,604)	24,614	95,332	169,729
Reduction of fair value of warrants	0	0	0	-	0	0	-	0	0	0	0	0	0	0
Investment income	66	74	60	15	15	15	15	61	68	74	82	90	99	109
Interest expense	0	0	0	-	0	0	-	0	0	0	0	0	0	0
Other income/(expense), net	71	(5)	(1)	453	35	1	0	489	2	2	(20)	24	(27)	(27)
Loss before cumulative effect of change in accounting principle	(13,260)	(15,559)	(21,480)	(6,371)	(7,152)	(7,326)	(7,578)	(28,427)	(31,941)	(33,758)	(25,542)	24,728	95,404	169,811
Cumulative effect of change in accounting principle	0	0	0	-	0	0	-	0	0	0	0	0	0	0
Income before tax	(13,260)	(15,559)	(21,480)	(6,371)	(7,152)	(7,326)	(7,578)	(28,427)	(31,941)	(33,758)	(25,542)	24,728	95,404	169,811
Tax Rate								37%	37%	37%	37%	37%	37%	37%
Tax	0.0	0	0	-	0	0	-	0	0	0	0	(9,149)	(35,299)	(62,830)
Net Income (Loss)	(13,260)	(15,559)	(21,480)	(6,371)	(7,152)	(7,326)	(7,578)	(28,427)	(31,941)	(33,758)	(25,542)	15,579	60,104	106,981
Net Income (Loss) Applicable to Common Shareholders	(13,260)	(15,559)	(21,480)	(6,371)	(7,152)	(7,326)	(7,578)	(28,427)	(31,941)	(33,758)	(25,542)	15,579	60,104	106,981
Net Earnings (Losses) Per Share—Basic and Diluted	(\$0.47)	(\$0.33)	(\$0.28)	(\$0.06)	(\$0.06)	(\$0.06)	(\$0.06)	(\$0.25)	(\$0.26)	(\$0.26)	(\$0.20)	\$0.12	\$0.45	\$0.80
Shares outstanding—basic	28,175	47,641	76,586	105,054	115,587	115,987	117,987	113,654	122,987	129,987	130,987	131,987	132,987	133,987
Shares outstanding—diluted	28,175	47,641	76,586	105,054	115,587	115,987	117,987	113,654	122,987	129,987	130,987	131,987	132,987	133,987
Margin Analysis (% of Sales/Revenue)														
Costs of goods										9%	9%	9%	9%	9%
R&D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	70%	22%	11%	8%
MG&A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	112%	41%	23%	16%
Operating Income (loss)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-91%	28%	57%	67%
Pretax	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-90%	28%	57%	67%
Tax Rate											37%	37%	37%	37%
Net Income	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-90%	18%	36%	42%
Financial Indicator Growth Analysis (YoY%)														
Licensing revenue									0%	0%	0%	0%	0%	0%
Grant revenue									0%	0%	0%	0%	0%	0%
Total Revenue		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	207%	93%	51%
R&D	40%	60%	24%	70%	57%	42%	47%	14%	7%	-15%	-5%	3%	3%	
SG&A	5%	13%	7%	13%	13%	18%	13%	7%	3%	9%	9%	8%	8%	
Marketing and sales											15%	6%	5%	
Operating Income (Losses)	17%	38%	22%	45%	39%	33%	35%	10%	6%	-24%	-196%	287%	78%	
Pretax Income		38%	14%	45%	39%	33%	32%	12%	6%	-24%	-197%	286%	78%	
Net Income	17%	38%	14%	45%	39%	33%	32%	12%	6%	-24%	-161%	286%	78%	
EPS	-31%	-14%	-50%	-33%	23%	17%	-11%	4%	0%	-25%	-161%	283%	77%	

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Source: Bloomberg LP; Company reports; Laidlaw & Company estimates

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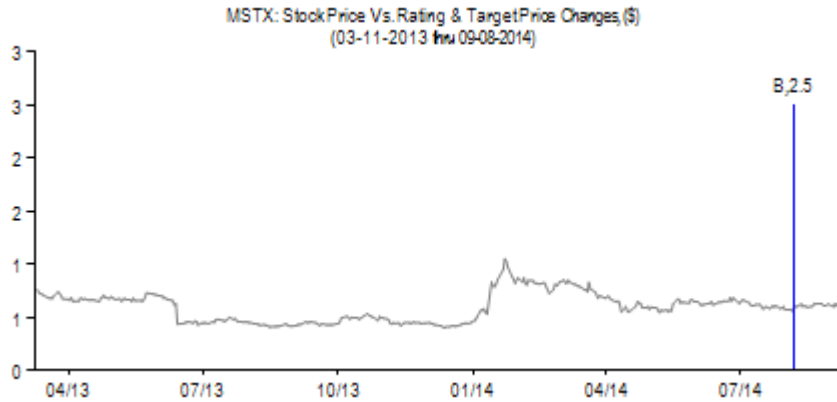
Rating and Price Target Change History

3 Year Rating Change History

Date	Rating	Closing Price (\$)
08/06/2014	Buy (B)	0.60

3 Year Price Change History

Date	Target Price (\$)	Closing Price, (\$)
08/06/2014	2.50	0.60



Source: Laidlaw & Company

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			Investment Banking	Brokerage
Strong Buy (SB)	Expected to significantly outperform the sector over 12 months.	0.00%	0.00%	0.00%
Buy (B)	Expected to outperform the sector average over 12 months.	94.74%	31.58%	10.53%
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Sell (S)	Returns expected to significantly underperform the sector average over 12 months.	0.00%	0.00%	0.00%

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