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EQUITY RESEARCH
Company Report

November 28, 2016

MabVax Therapeutics (MBVX - $ 3.71)

Healthcare/Biotechnology

Ticker:	**MBVX**
Rating:	**Buy**
Price Target:	**$ 18.00**

First Patient Has Been Dosed In MVT-5873 Combination Portion of the Phase I/II Study

This morning MBVX reported that they have dosed the first patient for the combination portion (with nab-paclitaxel plus gemcitabine) of the MVT-5873 in pancreatic adenocarcinoma (PDAC) Phase I/II clinical trial.

- **Details.** MBVX announced the initiation of the combination portion of MVT-5873 with nab-paclitaxel plus gemcitabine, which is the standard-of-care (SOC) first line therapy for PDAC. The recently established safety and tolerability of MVT-5873 as a monotherapy in treatment experienced patients (see our 2016-11-14 note) has enabled MBVX to expand the study into the first line treatment in pancreatic cancer patients. The initial MVT-5873 dose to be used in the combination setting will be the second dose tested in the monotherapy; while additional dose escalating of MVT-5873 as monotherapy will continue enrolling patients concurrently. The continuing MVT-5873 dose-finding monotherapy could help to establish the potential MTD of MVT-5873 in relapsed or refractory PDAC. The information learned from the monotherapy will ultimately establish a recommended Phase II dose (RP2D) to be used in the combination setting. We estimate MBVX to report results from the monotherapy (top-line) and the combination trial (interim-results) potentially in 1H17.
- **Implications.** We view today's news as encouraging since it demonstrates management's timely execution of clinical advancement of MVT-5873. We believe the outcomes from the Phase I/II combo trial would be the most critical for MBVX value given such a combination setup is the ultimate goal for MVT-5873 as part of a first line pancreatic cancer treatment. We believe the expedited clinical development (with overlapping progress of the mono- and combo therapies) of MVT-5873 could be an effective way to demonstrate the safety and potential activities of MVT-5873 more quickly without losing the integrity of the entire study. Along with the anticipated IND filing in 4Q16 and likely trial commencement in 1H17 for MVT-1075 (Lu^{177}-conjugated HuMab-5B1) in advanced PDAC, MBVX could have two therapeutic programs with different mechanisms of action in clinical development in 2017.
- **Action.** We are reiterating our Buy rating and $18 price target to reflect our view on highly encouraging developments of the broad HuMab-5B1-based platform. Valuation is based on peer comparable, probability adjusted DCF and sum-of-the-parts analyses.

Trading Data:

Last Price (11/28/2016)	$ 3.71
52–Week High (12/1/2015)	$ 7.36
52–Week Low (2/16/2016)	$ 3.03
Market Cap. (MM)	$ 23
Shares Out. (MM)	6

Earnings Estimates: (per share)

(Dec)	1Q	2Q	3Q	4Q	FY	P/E
FY-16E	-0.15A	-0.92A	-0.86A	-0.86	-3.71	NM
FY-15A	-6.25	-0.29	-0.20	-1.03	-13.44	NM
FY-14A	NA	NA	NA	NA	-9.51	NM
FY-13A	NA	NA	NA	NA	NA	NM

Source: Laidlaw & Company estimates

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Anticipated milestones in 2016 and beyond

Product	Indication	Event	Timing	Importance
MVT-5873	Pancreatic adenocarcinoma (PDAC)	Report top-line results of the single agent Phase I /II study	**1H17**	***
		Report interim results of the combination Phase I /II study	**1H17**	****
		Report results of the combination Phase I /II study	**2H17**	****
MVT-1075	Pancreatic adenocarcinoma (PDAC)	Potentially start Phase I study	**1H17**	***
HuMab-5B1 ADC	Pancreatic adenocarcinoma (PDAC)	Potentially start Phase I study	**2018**	***
MVT-2163	Pancreatic adenocarcinoma (PDAC)	Potentially report Phase I study top-line results	**Mid-2017**	****
Sarcoma vaccine	Sarcoma	Potentially report Phase II study OS results	**4Q16**	***
Ovarian cancer vaccine	Ovarian cancer	Potentially report Phase II study OS results	**1H17**	***

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

Source: Laidlaw & Company estimates and company presentation.

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Major risks

Clinical study failure could have a major impact on MBVX share value. Despite promising pre-clinical results of the company's lead products, HuMab-5B1 and HuMab-5B1-PET, it remains too early to predict the longer term safety and efficacy from the upcoming clinical studies. Given that clinical validation has not been established, it would be critical for these studies to demonstrate efficacy and a positive safety profile in order to increase the assets and shareholder value. Negative results of Phase I and future clinical studies could have a materially negative impact on the shareholder value; especially since the company has a very diverse-limited pipeline profile.

Yet-to-be-validated vaccinated patient derived monoclonal antibody (Mab) screening platform could remain uncertain. Although monoclonal antibodies have been established as a validated cancer treatment modality; currently there is no Mab derived from vaccinated patients that has been approved or is in a late clinical development stage to demonstrate efficacy. As such, clinical risks for monoclonal antibody based cancer therapy derived from successfully vaccinated patients are higher than similar products generated from other more proven development platforms.

Product may not be approved or reach anticipated sales. Although MBVX's current pipeline products have exhibited the potential to generate positive clinical outcomes from current and future trials; it remains too early to project whether any of these products would be approved by regulatory agencies. Even if the products were to enter the market, sales could be significantly below projections due to the specific product label under approval, physician consensus for prescribing the drug, changes of treatment paradigms, entrance of competitors, and the possible changes in pricing flexibility and payer reimbursement. A revenue outlook below expectations could also negatively affect MBVX shareholder value.

Additional financings could dilute shareholder value. Although the company currently has ~$10MM (pro forma) cash after its recent financing, MBVX most likely would need more financial resources going forward if they want to expand and further develop their pipeline. Should the future operational expenses, especially from R&D, increase significantly, products not receive FDA approval, or product revenue not reach expectations; the company might need to issue new equity to raise additional cash. Under such a scenario, the share value of existing shareholders could be diluted.

Limited trading liquidity limits shareholder options. Given that MBVX shares only entered the public market recently; daily trading volume and name recognition are relatively modest. As such, shareholders wanting to increase or reduce their positions more substantially in a volatile stock market may face constraints.

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Figure 1: Income Statement

MabVax Therapeutics – Income Statement

($ '000)	2014	2015	1Q16	2Q16	3Q16	4Q16E	2016E	2017E	2018E	2019E	2020E	2021E
Revenue												
Grants	304	1,267	148	-	-	0	148	1	1	1	0	0
Product revenue	10	0	0	-	-	0	0	0	0	0	1,500	3,383
Total revenues	314	1,267	148	0	0	0	148	1	1	1	1,500	3,383
Gross revenue											1,500	3,383
Research and development	3,503	9,597	1,701	1,596	1,671	1,705	6,672	8,207	9,766	11,622	14,062	16,453
General and administrative	5,204	9,795	2,652	1,929	2,421	2,469	9,470	10,796	11,876	12,945	13,980	14,959
Marketing and sales												
Total operating costs and expenses	8,707	19,392	4,352	3,525	4,092	4,174	16,143	19,003	21,642	24,567	28,043	31,412
Operating Incomes (losses)	(8,393)	(18,125)	(4,204)	(3,525)	(4,092)	(4,174)	(15,995)	(19,002)	(21,641)	(24,566)	(26,543)	(28,029)
Interest and other income (expense)	(0)	(0)	(200)	(263)	(266)	(400)	(1,129)	(1,600)	(1,600)	(1,600)	(1,600)	(1,600)
Change in fair value of warrant liability	475	20	-	0	0	0	0	0	0	0	0	0
Tax												
Net Income (Loss)	(7,918)	(18,105)	(4,405)	(3,788)	(4,358)	(4,574)	(17,124)	(20,602)	(23,241)	(26,166)	(28,143)	(29,629)
Deemed dividend on Series A-1 preferred-stock	(2,215)	(9,018)	-	0	0	0	0	0	0	0	0	0
Deemed dividend on Series A-1 warrant		(179)	-	0	0	0	0	0	0	0	0	0
Deemed dividend on Series B preferred stock		(8,656)	-	0	0	0	0	0	0	0	0	0
Accretion of preferred stock dividends	(445)	(93)	-	0	0	0	0	0	0	0	0	0
Net loss allocable to common stockholders	(10,578)	(36,051)	(4,405)	(3,788)	(4,358)	(4,574)	(17,124)	(20,602)	(23,241)	(26,166)	(28,143)	(29,629)
Basic and diluted net loss per share	($9.51)	($13.44)	($0.15)	($0.92)	($0.86)	($0.86)	($3.71)	($2.81)	($2.25)	($1.96)	($1.83)	($1.71)
Shares used to calculate the basic and diluted net loss per share	1,112	2,682	3,947	4,129	5,041	5,341	4,615	7,341	10,341	13,341	15,341	17,341
Margin Analysis (% of Sales/Revenue)												
Costs of goods										15%	15%	15%
R&D	1115%	757%	1149%	NA	NA	NA	4507%	820693%	976624%	1162183%	937%	486%
SG&A	1657%	773%	1791%	NA	NA	NA	6397%	1079631%	1187594%	1294477%	932%	442%
Operating Income (loss)	-2671%	-1430%	-2840%	NA	NA	NA	-10803%	-1900224%	-2164118%	-2456560%	-1769%	-828%
Pretax	-2520%	-1429%	-2975%	NA	NA	NA	-11566%	-2060224%	-2324118%	-2616560%	-1876%	-876%
Tax Rate												
Net Income	-705%	-2845%	-2975%	NA	NA	NA	-11566%	-2060224%	-2324118%	-2616560%	-1876%	-876%
Financial Indicator Growth Analysis (YoY%)												
Total Revenue	NA	303%	-38%	-100%	-100%	-100%	-88%	-99%	0%	0%	149904%	126%
R&D	NA	174%	-1%	-31%	-47%	-30%	-30%	23%	19%	19%	21%	17%
SG&A	NA	88%	170%	-54%	6%	6%	-3%	14%	10%	9%	8%	7%
Operating Income (Losses)	NA	116%	70%	-45%	-23%	5%	-12%	19%	14%	14%	8%	6%
Pretax Income	NA	241%	-78%	-41%	-17%	15%	-53%	20%	13%	13%	8%	5%
Net Income	NA	241%	-78%	-41%	-17%	15%	-53%	20%	13%	13%	8%	5%
EPS	NA	41%	-98%	216%	332%	-17%	-72%	-24%	-20%	-13%	-6%	-7%

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

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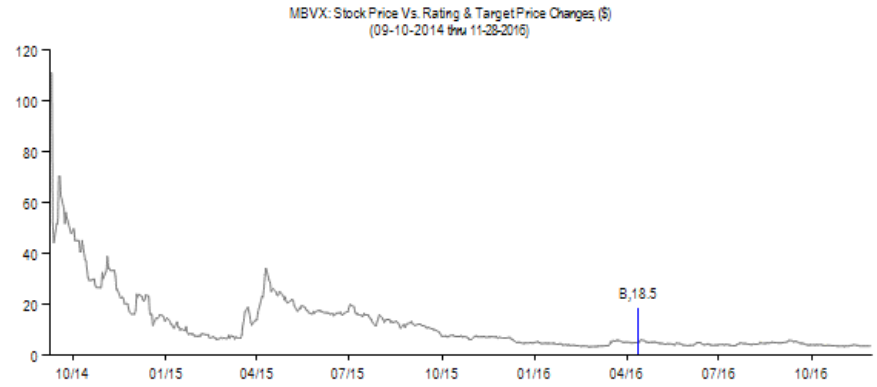
RATINGS INFORMATION

Rating and Price Target Change History



3 Year Rating Change History

Date	Rating	Closing Price ($)
04/13/2016	Buy (B)	5.18

3 Year Price Change History

Date	Target Price ($)	Closing Price, ($)
04/13/2016	18.50**	5.18

** *Split Adjusted*

Source: Laidlaw & Company **Created by: Blue-Compass.net**

Laidlaw & Company Rating System*		% of Companies Under Coverage With This Rating	% of Companies for which Laidlaw & Company has performed services for in the last 12 months	
			Investment Banking	Brokerage
Strong Buy (SB)	Expected to significantly outperform the sector over 12 months.	2.56%	2.56%	0.00%
Buy (B)	Expected to outperform the sector average over 12 months.	58.97%	28.21%	2.56%
Hold (H)	Expected returns to be in line with the sector average over 12 months.	5.13%	0.00%	0.00%
Sell (S)	Returns expected to significantly underperform the sector average over 12 months.	2.56%	0.00%	0.00%

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