

## MabVax Therapeutics (MBVX - \$2.93)

### 4Q16: Investor Focus Remains on MVT-5873 Phase I/II Data Maturation

MBVX recently reported 4Q16 financial results with net loss of (\$5.1MM) or (\$0.81)/share. MBVX ended 4Q16 with cash of ~\$4MM.

- MVT-5873 in PDAC updates.** MBVX is establishing the safety and tolerability of MVT-5873 as monotherapy in a pancreatic adenocarcinoma (PDAC) dose escalating study. Subsequently the company also initiated the combination portion of the Phase I/II study with Abraxane plus gemcitabine. We believe MBVX remains on track to provide several data readouts in 2017, including: 1) monotherapy portion of Phase I/II results in 1H17 at a scientific meeting; 2) combination portion of the Phase I/II interim results in 1H17; and 3) full results of the combination Phase I/II study in 2H17. We believe the recently reported preliminary results of MVT-5873 in PDAC monotherapy dose finding study bodes well for its use in a combination setting as a potential first-line pancreatic cancer therapy. Those results demonstrated that the drug alone has activity (see our 2017-02-16 note). MBVX is also exploring MVT-5873 in combination with Halozyme's PEGPH20 as a potentially better pancreatic cancer therapy. A preclinical study demonstrated enhanced MVT-5873 accumulation on tumors when administered in sequence with PEGPH20. PEGPH20, a recombinant human hyaluronidase enzyme, could temporarily degrade hyaluronan (HA), which could prevent the access of anti-tumor drugs.
- Additional pipeline development updates.** MBVX plans to commence a Phase I dose escalating study of MVT-1075 (radioimmunotherapy) in recurrent PDAC and other CA19-9 positive malignancies in 1H17. The study will evaluate safety, PK, and potential efficacy signal with data readout possible in 2H17. Memorial Sloan Kettering Cancer Center in NYC is one of the major investigative sites. The MVT-2163 PET imaging agent Phase I study interim results were encouraging, and MBVX is planning to start an expansion cohort in newly diagnosed PDAC patients before surgery in mid-2017. The initial results could be presented at a scientific meeting in 1H17 and full data might be available potentially shortly thereafter. Additionally, MBVX is continuing to further preclinical development of HuMab-5B1 ADC candidates and we estimate the company could select lead candidate potentially in 2H17.
- 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.

#### Earnings Estimates: (per share)

| (Dec)         | 1Q    | 2Q    | 3Q    | 4Q    | FY     | P/E |
|---------------|-------|-------|-------|-------|--------|-----|
| <b>FY-17E</b> | -0.81 | -0.80 | -0.81 | -0.80 | -3.22  | NM  |
| <b>FY-16A</b> | -0.15 | -0.92 | -0.86 | -0.81 | -3.64  | NM  |
| <b>FY-15A</b> | -6.25 | -0.29 | -0.20 | -1.03 | -13.44 | NM  |
| <b>FY-14A</b> | -     | -     | -     | -     | -9.51  | NM  |

#### Healthcare/Biotechnology

|               |                |
|---------------|----------------|
| Ticker:       | <b>MBVX</b>    |
| Rating:       | <b>Buy</b>     |
| Price Target: | <b>\$18.00</b> |

#### Trading Data:

|                          |        |
|--------------------------|--------|
| Last Price (3/2/2017)    | \$2.93 |
| 52-Week High (3/21/2016) | \$6.48 |
| 52-Week Low (2/13/2017)  | \$2.51 |
| Market Cap. (MM)         | \$18   |
| Shares Out. (MM)         | 4.858  |

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Source: Laidlaw & Company estimates

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## Anticipated milestones in 2017 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     | ***        |
|                        |                                  | Potentially report early Phase I data                         | 2H17     | ***        |
| 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 | ****       |
|                        |                                  | Potentially report early Phase I data                         | 2H17     | ***        |
|                        |                                  | Potential partnership for further development                 | 2017     | ****       |
| Sarcoma vaccine        | Sarcoma                          | Potentially report Phase II study OS results                  | 2017     | ***        |
| 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.

## Major risks

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**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.

Figure 1: Income Statement

| MabVax Therapeutics – Income Statement                            |          |           |          |          |          |          |          |          |          |          |          |          |           |           |          |          |  |
|---|----------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|----------|----------|--|
| (\$ '000)   | 2014     | 2015      | 1Q16     | 2Q16     | 3Q16     | 4Q16     | 2016     |          |          |          |          | 2017E    | 2018E     | 2019E     | 2020E    | 2021E    |  |
|   |          |           |          |          |          |          |          | 1Q17E    | 2Q17E    | 3Q17E    | 4Q17E    |          |           |           |          |          |  |
| <b>Revenue</b>  |          |           |          |          |          |          |          |          |          |          |          |          |           |           |          |          |  |
| Grants  | 304      | 1,267     | 148      | -        | -        | -        | 148      | 0        | -        | -        | -        | 0        | 1         | 1         | 0        | 0        |  |
| Product revenue   | 10       | 0         | -        | -        | -        | -        | 0        | 0        | -        | -        | -        | 0        | 0         | 0         | 1,500    | 3,383    |  |
| <b>Total revenues</b>   | 314      | 1,267     | 148      | -        | -        | -        | 148      | 0        | 0        | 0        | 0        | 0        | 1         | 1         | 1,500    | 3,383    |  |
| Gross revenue   |          |           |          |          |          |          |          |          |          |          |          |          |           |           |          |          |  |
| Research and development  | 3,503    | 9,597     | 1,701    | 1,596    | 1,671    | 2,833    | 7,801    | 2,918    | 3,064    | 3,125    | 3,313    | 12,420   | 14,780    | 17,588    | 21,281   | 24,899   |  |
| General and administrative  | 5,204    | 9,795     | 2,652    | 1,929    | 2,421    | 2,009    | 9,010    | 2,049    | 2,070    | 2,111    | 2,132    | 8,362    | 9,198     | 10,026    | 10,828   | 11,586   |  |
| Marketing and sales   |          |           |          |          |          |          |          |          |          |          |          |          |           |           |          |          |  |
| <b>Total operating costs and expenses</b>                         | 8,707    | 19,392    | 4,352    | 3,525    | 4,092    | 4,842    | 16,811   | 4,967    | 5,134    | 5,236    | 5,445    | 20,782   | 23,978    | 27,614    | 32,109   | 36,485   |  |
| <b>Operating Incomes (losses)</b>                                 | (8,393)  | (18,125)  | (4,204)  | (3,525)  | (4,092)  | (4,842)  | (16,663) | (4,967)  | (5,134)  | (5,236)  | (5,445)  | (20,782) | (23,977)  | (27,613)  | (30,609) | (33,102) |  |
| Interest and other income (expense)                               | (0)      | (0)       | (200)    | (263)    | (266)    | (268)    | (997)    | (300)    | (250)    | (340)    | (270)    | (1,160)  | (1,160)   | (1,160)   | (1,160)  | (1,160)  |  |
| Change in fair value of warrant liability                         | 475      | 20        | -        | -        | -        | 0        | 0        | 0        | -        | -        | -        | 0        | 0         | 0         | 0        | 0        |  |
| Tax   |          |           |          |          |          | 0        | 0        |          |          |          |          |          |           |           |          |          |  |
| <b>Net Income (Loss)</b>  | (7,918)  | (18,105)  | (4,405)  | (3,788)  | (4,358)  | (5,110)  | (17,660) | (5,267)  | (5,384)  | (5,576)  | (5,715)  | (21,942) | (25,137)  | (28,773)  | (31,769) | (34,262) |  |
| Deemed dividend on Series A-1 preferred-stock                     | (2,215)  | (9,018)   | -        | -        | -        | 0        | 0        | 0        | -        | -        | -        | 0        | 0         | 0         | 0        | 0        |  |
| Deemed dividend on Series A-1 warrant                             |          | (179)     | -        | -        | -        | 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        |  |
| Accretion of preferred stock dividends                            | (445)    | (93)      | -        | -        | -        | 0        | 0        | 0        | -        | -        | -        | 0        | 0         | 0         | 0        | 0        |  |
| Net loss allocable to common stockholders                         | (10,578) | (36,051)  | (4,405)  | (3,788)  | (4,358)  | (5,110)  | (17,660) | (5,267)  | (5,384)  | (5,576)  | (5,715)  | (21,942) | (25,137)  | (28,773)  | (31,769) | (34,262) |  |
| Basic and diluted net loss per share                              | (\$9.51) | (\$13.44) | (\$0.15) | (\$0.92) | (\$0.86) | (\$0.81) | (\$3.64) | (\$0.81) | (\$0.80) | (\$0.81) | (\$0.80) | (\$3.22) | (\$2.56)  | (\$2.25)  | (\$2.14) | (\$2.04) |  |
| Shares used to calculate the basic and diluted net loss per share | 1,112    | 2,682     | 3,947    | 4,129    | 5,041    | 6,314    | 4,858    | 6,514    | 6,714    | 6,914    | 7,114    | 6,814    | 9,814     | 12,814    | 14,814   | 16,814   |  |
| <b>Margin Analysis (% of Sales/Revenue)</b>                       |          |           |          |          |          |          |          |          |          |          |          |          |           |           |          |          |  |
| Costs of goods  |          |           |          |          |          |          |          |          |          |          |          |          |           | 15%       | 15%      | 15%      |  |
| R&D   | 1115%    | 757%      | 1149%    | NA       | NA       | NA       | 5269%    | NA       | NA       | NA       | NA       | NA       | 1477962%  | 1758775%  | 1419%    | 736%     |  |
| SG&A  | 1657%    | 773%      | 1791%    | NA       | NA       | NA       | 6086%    | NA       | NA       | NA       | NA       | NA       | 919799%   | 1002581%  | 722%     | 342%     |  |
| Operating Income (loss)   | -2671%   | -1430%    | -2840%   | NA       | NA       | NA       | -11255%  | NA       | NA       | NA       | NA       | NA       | -2397660% | -2761255% | -2041%   | -978%    |  |
| Pretax  | -2520%   | -1429%    | -2975%   | NA       | NA       | NA       | -11928%  | NA       | NA       | NA       | NA       | NA       | -2513660% | -2877255% | -2118%   | -1013%   |  |
| Tax Rate  |          |           |          |          |          |          |          |          |          |          |          |          |           |           |          |          |  |
| Net Income  | -705%    | -2845%    | -2975%   | NA       | NA       | NA       | -11928%  | NA       | NA       | NA       | NA       | NA       | -2513660% | -2877255% | -2118%   | -1013%   |  |
| <b>Financial Indicator Growth Analysis (YoY%)</b>                 |          |           |          |          |          |          |          |          |          |          |          |          |           |           |          |          |  |
| Total Revenue   | NA       | 303%      | -38%     | -100%    | -100%    | -100%    | -88%     | -100%    | NA       | NA       | NA       | -100%    | NA        | 0%        | 149904%  | 126%     |  |
| R&D   | NA       | 174%      | -1%      | -31%     | -47%     | 17%      | -19%     | 72%      | 92%      | 87%      | 17%      | 59%      | 19%       | 19%       | 21%      | 17%      |  |
| SG&A  | NA       | 88%       | 170%     | -54%     | 6%       | -13%     | -8%      | -23%     | 7%       | -13%     | 6%       | -7%      | 10%       | 9%        | 8%       | 7%       |  |
| Operating Income (Losses)   | NA       | 116%      | 70%      | -45%     | -23%     | 22%      | -8%      | 18%      | 46%      | 28%      | 12%      | 25%      | 15%       | 15%       | 11%      | 8%       |  |
| Pretax Income   | NA       | 241%      | -78%     | -41%     | -17%     | 28%      | -51%     | 20%      | 42%      | 28%      | 12%      | 24%      | 15%       | 14%       | 10%      | 8%       |  |
| Net Income  | NA       | 241%      | -78%     | -41%     | -17%     | 28%      | -51%     | 20%      | 42%      | 28%      | 12%      | 24%      | 15%       | 14%       | 10%      | 8%       |  |
| EPS   | NA       | 41%       | -98%     | 216%     | 332%     | -21%     | -73%     | 436%     | -13%     | -7%      | -1%      | -11%     | -20%      | -12%      | -4%      | -5%      |  |
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Source: Bloomberg LP; Company reports; Laidlaw & Company estimates.

## DISCLOSURES:

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#### 3 Year Rating Change History

| Date       | Rating  | Closing Price (\$) |
|------------|---------|--------------------|
| 04/13/2... | Buy (B) | 5.18               |

#### 3 Year Price Change History

| Date       | Target Price (\$) | Closing Price (\$) |
|------------|-------------------|--------------------|
| 04/13/2... | 18.50**           | 5.18               |

\*\* Split Adjusted

Source: Laidlaw & Company

Created by: Blue-Compass.net

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|----------------------------------|---|--|---|-----------|
|                                  |   |  | Investment Banking  | Brokerage |
| <b>Strong Buy (SB)</b>           | Expected to significantly outperform the sector over 12 months.                   | 2.44%  | 2.44%   | 0.00%     |
| <b>Buy (B)</b>                   | Expected to outperform the sector average over 12 months.                         | 60.98%   | 26.83%  | 2.44%     |
| <b>Hold (H)</b>                  | Expected returns to be in line with the sector average over 12 months.            | 2.44%  | 0.00%   | 0.00%     |
| <b>Sell (S)</b>                  | Returns expected to significantly underperform the sector average over 12 months. | 4.88%  | 0.00%   | 0.00%     |

### ADDITIONAL COMPANIES MENTIONED

Halozyne Therapeutics (HALO – Not Rated)

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