

### Biotechnology

**PBMD - NASDAQ** August 31, 2017

**Closing Price 08/30/2017** **\$1.66**  
 Rating: Buy  
 12-Month Target Price: \$7.00  
 52-Week Range: \$1.40 - \$3.26  
 Market Cap (M): 39  
 Shares O/S (M): 23.4  
 Float: 0.0%  
 Avg. Daily Volume (000): 102  
 Debt (M): \$0.0  
 Dividend: \$0.00  
 Dividend Yield: 0.00%  
 Risk Profile: Speculative  
 Fiscal Year End: June

#### Total Expenses ('000)

	2017E	2018E	2019E
H1	3,716A	5,934	6,231
H2	5,000	6,428	6,750
FY	8,716	12,362	12,981



**Jason McCarthy, Ph.D.**  
 (212) 895-3556  
 jmccarthy@maximgrp.com

**Jason Kolbert**  
 (212) 895-3516  
 jkolbert@maximgrp.com

**Gabrielle Zhou**  
 212-895-3784  
 gzhou@maximgrp.com

## Prima Biomed Ltd.

**Buy**

### Understanding LAG-3 Function in Controlling T Cells- Grant Funding Awarded to Prima

#### Summary

- Prima announced that the company and Monash University have received a grant of \$285K to conduct a study to 'Investigate the structure of a T cell immune checkpoint molecule.' The study will examine T cell receptors and the role of LAG-3 function in controlling T cell signaling.
- Why is this important? LAG-3 is likely the next blockbuster checkpoint that will be combined with PD1s and PD-L1s, in our view. What differentiates LAG-3 is that unlike a PD1 like Keytruda and Opdivo, or a PD-L1 like Tecentriq, a LAG-3 blocking antibody not only "takes the brakes off" of killer T cells, but it also down-regulates T regulatory cells that suppress anti-cancer responses. This study, if successful, will show for the first time exactly how LAG-3 interacted with immune receptors and how LAG-3 blocking antibodies act as immune checkpoint inhibitors for cancer.
- Prima is partnered with Novartis to develop IMP701 + PD1 in over 15 solid tumor types. The P1 study has expanded from N=240 to N=416 and data should start to emerge soon. Prima is also developing IMP321. P1 data in melanoma in combination with Keytruda is expected in 4Q17. A P2b registration trial in breast cancer i(N=226) is expected to complete enrollment in 1H18.
- Conclusion: We see LAG-3 as the next blockbuster checkpoint. Grant funding to better understand at the molecular level the specific interactions of LAG-3 with immune cells could lead to novel immune oncology agent development. With multiple LAG-3s in hand already and the right big pharma partners, we see Prima ideally positioned to capture value in the next evolution of the checkpoint space.

#### Details

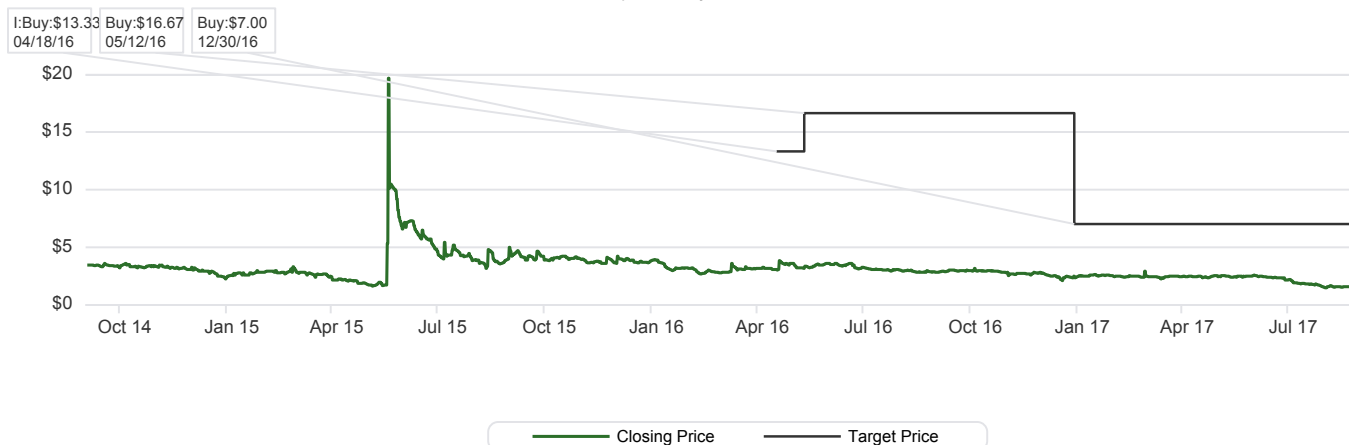
**Large indications and the right partners.** Novartis (NVS - \$82.74 - NR) has licensed IMP701 for development as a combination therapy with PD1 inhibitors in solid tumors. We believe that the ongoing phase I study will expand in its indications, taking a more aggressive timeline to approval. GlaxoSmithKline (GSK - \$42.65 - NR) is evaluating IMP731 in a phase I study in psoriasis (data are expected in 2017). Prima will receive single-digit royalties from each partnership. The lead in-house program, IMP321, an antigen-presenting cell (APC) activator that ramps up T-cell production following chemotherapy, already demonstrated POC in breast cancer and is currently in a phase IIb registration study. IMP321 could launch in 2020. A phase I study of an IMP321 combination with Keytruda in melanoma patients is also positive so far, more data in 2017.

**IMP321** is Prima Biomed's lead LAG-3 candidate, and it is in development as an immune adjuvant or immune stimulator. IMP321 is a soluble dimeric recombinant form of LAG-3Ig, a fusion protein used to increase the immune response to tumors by stimulating dendritic cells through high affinity binding to MHC class II molecules on the dendritic cell surface. LAG-3 is one of two proteins shown to be able to properly condition dendritic cells (and monocytes) to undergo maturation and step up the stimulation of antigen targeting T cells (the other is CD40 ligand). What's important to note is that both LAG-3 and CD40 can do this without inflammation. IMP321 was developed by Dr. Frédéric Triebel in the late 1990s as a dendritic-cell activator. IMP321 has been shown to be highly efficacious as a vaccine adjuvant to inhibit tumor growth in a number of models of both cancer and infectious disease. The protein is safe and non-immunogenic, and has already shown efficacy in humans. When used at low doses, it can be used as a T-cell adjuvant for cancer vaccines. At higher doses, IMP321 can be combined with cancer chemotherapy to ramp up the immune response by driving dendritic cells and monocytes to increase tumor antigen presentation.

DISCLOSURES

Prima Biomed Ltd. Rating History as of 08/30/2017

powered by: BlueMatrix



Maxim Group LLC Ratings Distribution		As of: 08/30/17	
		% of Coverage Universe with Rating	% of Rating for which Firm Provided Banking Services in the Last 12 months
<b>Buy</b>	Fundamental metrics and/or identifiable catalysts exist such that we expect the stock to outperform its relevant index over the next 12 months.	<b>76%</b>	<b>38%</b>
<b>Hold</b>	Fundamental metrics are currently at, or approaching, industry averages. Therefore, we expect this stock to neither significantly outperform nor underperform its relevant index over the next 12 months.	<b>20%</b>	<b>20%</b>
<b>Sell</b>	Fundamental metrics and/or identifiable catalysts exist such that we expect the stock to underperform its relevant index over the next 12 months.	<b>3%</b>	<b>17%</b>

\*See valuation section for company specific relevant indices

I, Jason McCarthy, Ph.D., attest that the views expressed in this research report accurately reflect my personal views about the subject security and issuer. Furthermore, no part of my compensation was, is, or will be directly or indirectly related to the specific recommendation or views expressed in this research report.

I, Jason Kolbert, attest that the views expressed in this research report accurately reflect my personal views about the subject security and issuer. Furthermore, no part of my compensation was, is, or will be directly or indirectly related to the specific recommendation or views expressed in this research report.

I, Gabrielle Zhou, attest that the views expressed in this research report accurately reflect my personal views about the subject security and issuer. Furthermore, no part of my compensation was, is, or will be directly or indirectly related to the specific recommendation or views expressed in this research report.

The research analyst(s) primarily responsible for the preparation of this research report have received compensation based upon various factors, including the firm's total revenues, a portion of which is generated by investment banking activities.

**Maxim Group makes a market in Prima Biomed Ltd.**

**Maxim Group managed/co-managed/acted as placement agent for an offering of the securities for Prima Biomed Ltd. in the past 12 months.**

**Maxim Group received compensation for investment banking services from Prima Biomed Ltd. in the past 12 months.**

**Maxim Group expects to receive or intends to seek compensation for investment banking services from Prima Biomed Ltd. in the next 3 months.**

**PBMD:** For Prima Biomed, we use the BTK (Biotechnology Index) as the relevant index.

**Valuation Methods**

**PBMD:** Our therapeutic model assumes a royalty structure for each LAG-3 product, initially with IMP701 and IMP321 in 2020 and followed by IMP731 in 2023. Our models assume risk adjustments for each product based on the stage(s) of development. Our therapeutic models assume a risk adjustment. We then apply a 30% discount to our free-cash-flow, discounted EPS, and sum-of-the-parts models, which are equally weighted to derive a price target.

**Price Target and Investment Risks**

**PBMD:** Aside from general market and other economic risks, risks particular to our price target and rating for Prima Biomed include: (1) Development—To date, LAG-3 checkpoint modulators have not been approved; (2) Regulatory—The company's ongoing and future studies may not be sufficient to gain approval; (3) Commercial—The company lacks commercial infrastructure to support a launch if approved; (4) Financial—The company is not yet profitable and may need to raise additional capital to fund operations.

---

**RISK RATINGS**

---

Risk ratings take into account both fundamental criteria and price volatility.

**Speculative – Fundamental Criteria:** This is a risk rating assigned to early-stage companies with minimal to no revenues, lack of earnings, balance sheet concerns, and/or a short operating history. Accordingly, fundamental risk is expected to be significantly above the industry. **Price Volatility:** Because of the inherent fundamental criteria of the companies falling within this risk category, the price volatility is expected to be significant with the possibility that the investment could eventually be worthless. Speculative stocks may not be suitable for a significant class of individual investors.

**High – Fundamental Criteria:** This is a risk rating assigned to companies having below-average revenue and earnings visibility, negative cash flow, and low market cap or public float. Accordingly, fundamental risk is expected to be above the industry. **Price Volatility:** The price volatility of companies falling within this category is expected to be above the industry. High-risk stocks may not be suitable for a significant class of individual investors.

**Medium – Fundamental Criteria:** This is a risk rating assigned to companies that may have average revenue and earnings visibility, positive cash flow, and is fairly liquid. Accordingly, both price volatility and fundamental risk are expected to approximate the industry average.

**Low – Fundamental Criteria:** This is a risk rating assigned to companies that may have above-average revenue and earnings visibility, positive cash flow, and is fairly liquid. Accordingly, both price volatility and fundamental risk are expected to be below the industry.

---

**DISCLAIMERS**

---

Some companies that Maxim Group LLC follows are emerging growth companies whose securities typically involve a higher degree of risk and more volatility than the securities of more established companies. The securities discussed in Maxim Group LLC research reports may not be suitable for some investors. Investors must make their own determination as to the appropriateness of an investment in any securities referred to herein, based on their specific investment objectives, financial status and risk tolerance.

This communication is neither an offer to sell nor a solicitation of an offer to buy any securities mentioned herein. This publication is confidential for the information of the addressee only and may not be reproduced in whole or in part, copies circulated, or disclosed to another party, without the prior written consent of Maxim Group, LLC ("Maxim").

Information and opinions presented in this report have been obtained or derived from sources believed by Maxim to be reliable, but Maxim makes no representation as to their accuracy or completeness. The aforementioned sentence does not apply to the disclosures required by FINRA Rule 2241. Maxim accepts no liability for loss arising from the use of the material presented in this report, except that this exclusion of liability does not apply to the extent that such liability arises under specific statutes or regulations applicable to Maxim. This report is not to be relied upon in substitution for the exercise of independent judgment. Maxim may have issued, and may in the future issue, other reports that are inconsistent with, and reach different conclusions from, the information presented in this report. Those reports reflect the different assumptions, views and analytical methods of the analysts who prepared them and Maxim is under no obligation to ensure that such other reports are brought to the attention of any recipient of this report.

Past performance should not be taken as an indication or guarantee of future performance, and no representation or warranty, express or implied, is made regarding future performance. Information, opinions and estimates contained in this report reflect a judgment at its original date of publication by Maxim and are subject to change without notice. The price, value of and income from any of the securities mentioned in this report can fall as well as rise. The value of securities is subject to exchange rate fluctuation that may have a positive or adverse effect on the price or income of such securities. Investors in securities such as ADRs, the values of which are influenced by currency volatility, effectively assume this risk. Securities recommended, offered or sold by Maxim: (1) are not insured by the Federal Deposit Insurance Company; (2) are not deposits or other obligations of any insured depository institution; and (3) are subject to investment risks, including the possible loss of principal invested. Indeed, in the case of some investments, the potential losses may exceed the amount of initial investment and, in such circumstances, you may be required to pay more money to support these losses.

---

ADDITIONAL INFORMATION IS AVAILABLE UPON REQUEST

---



## Corporate Headquarters

The Chrysler Building  
405 Lexington Ave., 2<sup>nd</sup> FL  
New York, NY 10174  
Tel: 212-895-3500

Capital Markets/Syndicate: 212-895-3695

Corporate Finance: 212-895-3811

Equity/Options Trading: 212-895-3790

Equity Research: 212-895-3736

Event Driven/Risk Arb Group: 212-895-3878

Fixed Income Trading: 212-895-3875

Global Equity Trading: 212-895-3623

Institutional Sales: 212-895-3745

Institutional Sales Trading: 212-895-3873

Prime Brokerage: 212-895-3755

Wealth Management: 212-895-3624

### Woodbury, Long Island

20 Crossways Park Drive North  
Suite 304  
Woodbury, NY 11797  
Tel: 516-393-8300

### Red Bank, New Jersey

246 Maple Avenue  
Red Bank, NJ 07701  
Tel: 732-784-1900

### San Francisco, Bay Area

Lafayette, California  
3732 Mt. Diablo Blvd  
Suite 158  
Lafayette, CA 94549  
Tel: 415-762-0114

### Boca Raton, Florida

7900 Glades Road  
Suite 505  
Boca Raton, FL 33434  
Tel: 561-465-2605