

# INVESTOR UPDATE

by  **PRIMA BIOMED**

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Marc Voigt, CEO



Lucy Turnbull, AO

## Message from CEO & Chairman

Dear Fellow Shareholders,

In mid-January we were in San Francisco during the annual JP Morgan global healthcare conference, where it was very evident that the overall understanding and appreciation of the importance of LAG-3's role in the immune system is growing significantly. The clinical community is beginning to recognise the potential of LAG-3 as one of the next big checkpoints after PD-1 and CTLA-4. This is underpinned by the significant increase in the number of LAG-3 related clinical trials and the number of patients in these trials. The level of demand and calibre of meetings we had were very pleasing.

Just prior to the conference, we provided market updates on the two clinical trials for our lead product, IMP321 (a first-in-class Antigen Presenting Cell activator based on the immune checkpoint LAG-3).

In late December we announced interim data from the Phase IIb clinical trial of IMP321 in combination with paclitaxel for patients with metastatic breast cancer (AIPAC). The data from all 15 patients demonstrated that IMP321 is safe and well tolerated at both the 6mg and 30mg dose levels. IMP321 also generated the desired immune response. Patient screening for the randomised phase of the trial in 226 patients is now underway across our various European centres.

Also in late December we announced interim data for our Australian pilot Phase I trial for IMP321 in combination with PD-1 checkpoint inhibitor pembrolizumab (KEYTRUDA®) for the treatment of melanoma (TACTI-mel). The data confirmed that IMP321 was safe and well tolerated at the first 1mg dose level with no drug-related serious adverse events reported. The Drug Safety Monitoring

Board (DSMB) approved the dose escalation of IMP321 to a higher 6mg dose and four out of six patients in the second cohort have already been dosed.

In March, we were granted a new patent for IMP321, entitled "Use of Recombinant LAG-3 or the Derivatives thereof for Eliciting Monocyte Immune Response" by the United States Patent Office. This will provide protection for the treatment of cancer where a plurality of doses of IMP321 is used to generate a monocyte mediated response. In terms of further strengthening our intellectual property portfolio, Prima has filed additional applications in the US seeking protection for the IMP321 product itself.

Meanwhile our pharma partners Novartis and GSK continue to progress trials for their respective LAG-3 product candidates.

Novartis recently enlarged its study for its LAG-3 antagonist antibody in cancer from 240 to 416 patients. As per our agreements with these partners, Prima is eligible for cash milestones in connection with our partners achieving certain clinical, regulatory, and commercial milestones.

### Development Activities

We have also been active in developing an entirely new product candidate in our Paris laboratory. In early January, we announced a new, early stage LAG-3 antibody known as IMP761, the first ever agonist antibody of LAG-3. Its mechanism of action is different than that of our other product candidates in that it can turn off activated T cells without killing them, which is hypothesised to be more applicable to certain indications. We feature IMP761 later in this newsletter.

Also, noteworthy in terms of recent news was our Memo of Understanding ("MoU") with WuXi Biologics for exclusive clinical and commercial manufacturing of IMP321.

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This is a key component of our commercial development strategy: securing a robust global supply of IMP321 for the foreseeable future. We have an open dialogue and ongoing discussions with WuXi in which we continue to solidify our relationship with them. We also entered into a Material Transfer Agreement (“MTA”) with Cytlimic ([www.cytlimic.com](http://www.cytlimic.com)), a spin off company established by NEC Corporation. As per this agreement, Cytlimic will pay Prima to provide IMP321 product for their clinical research in Japan.

#### **Finance Update**

As a result of careful financial management, Prima remains in a solid financial position, with approximately A\$16.57m of cash as of 31 December 2016. In addition, on February 13 we announced receipt of AUD\$860,000 in French tax credits as a result of reimbursement for conducting R&D activities in France.

Based on current forecasts and excluding any milestone payments from our partners, our current cash balance is sufficient to fund operations through the first quarter of calendar year 2018. We continue to assess opportunities to ensure we remain well capitalised.

#### **Calendar Year 2017 Outlook**

Looking at the year ahead, we can expect immune monitoring and activity (safety run-in phase) data in

mid 2017 for our AIPAC trial. For TACTI-mel we anticipate that a further dose escalation will take place later in the year subject to favourable ongoing safety data at the 6mg and the subsequent 30 mg dose. TACTI-mel is expected to be fully recruited in the third quarter of CY 2017. We also hope to bring you more updates through the year on our new product IMP761 as we progress our pre-clinical studies in animal models. As our partners update us on the progress of their trials we will of course keep you informed, and as always, we will provide you with news from the industry regarding LAG-3 broadly and what else is happening clinically. In contrast to 2016 we should be in a position to have multiple clinical data releases.

#### **New Management Appointment**

In closing we would like to welcome Jay Campbell as General Manager, US Operations. Based in New York, Jay will be primarily responsible for business development and investor engagement activities as we look to broaden our stakeholder relationships in the US market. We introduce him later in the newsletter.

We are highly encouraged and energised by the positive progress we are making. We look forward to updating you further in the months ahead.

Yours sincerely,  
Lucy Turnbull, AO & Marc Voigt, CEO



*Jay Campbell*

## **Introduction to Jay Campbell**

Jay Campbell was most recently Senior Director of Business Development and Investor Relations at Kolltan Pharmaceuticals, Inc., a privately-held biotechnology company developing biologic therapeutics targeting receptor tyrosine kinases for oncology and immunology, up until the sale of Kolltan to Celldex Therapeutics, Inc. in November 2016.

Prior to Kolltan, Mr. Campbell spent over 13 years working in the financial services industry and as an independent business development consultant, the majority of which was as an investment banker focusing on the life sciences industry.

During this time, Jay was a business development consultant to ISTA Pharmaceuticals, Inc. in connection with the company's review of strategic alternatives that culminated in the sale of the company to Bausch & Lomb in 2012. Mr. Campbell previously worked at Maxim Group, Royal Bank of Scotland, ABN AMRO, Rothschild, and Schrodgers. Throughout his career, Jay has successfully worked on 25 financing, licensing, and M&A transactions representing more than \$13.0 billion.

## New candidate IMP761 unveiled

On the 2nd January this year, Prima announced a new addition to the product pipeline - an early stage LAG-3 antibody. The humanized antibody known as IMP761 has been developed at our laboratory in Châtenay-Malabry south of Paris and is, we believed, the first agonist antibody of LAG-3. So what does this mean exactly and how is it different to the other antibodies our partners are developing?

*IMP761 is mechanistically distinct from any of the known LAG-3 antibodies:* In theory, a LAG-3 agonist will bind directly to the LAG-3 receptor on activated T cells and give a signal directly into the cell to turn them off and prevent them from proliferating. The T cells will simply become inactive; they will not die and the number of LAG-3 + cells will slowly decline over time. So why is this important?

Inflammatory and autoimmune diseases are characterised by activated T cells that react against the patients' own tissues. They fail to switch off when they should and therefore cause tissue destruction or inflammatory responses. By treating patients with autoimmune disease with the LAG-3 agonist antibody to switch off their activated T cells, we could potentially overcome this tissue destruction. Long-term, we could also potentially prevent organ transplant rejection and graft versus host disease. This, however, remains to be demonstrated clinically and there is considerable work to be done before this stage is reached.

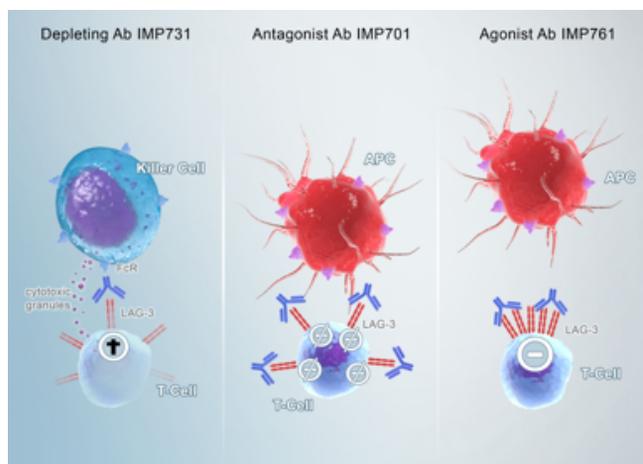
*IMP761 is an agonist while IMP701 (Novartis) is an antagonist and IMP731 (GSK) is a depleting antibody:* LAG-3 is an immune checkpoint that is present on different cells of the immune system and can play a role to activate some cells and suppress others. It is therefore a versatile immune checkpoint that can be exploited for developing therapies in cancer and autoimmune disease – depending on the clinical setting we can aim to activate, suppress or remove the undesired response.

In tumours, the cancer cells trick our T cells into being inactive. Our IMP701 antibody which is now being developed in the clinic by Novartis as an antagonist – it works by blocking the interaction between the cancer cells and the T cells to stop the cancer cells turning them off. In the autoimmune setting, the IMP731 antibody that is being developed by GSK is called a depleting or cytotoxic antibody. It works to irreversibly destroy the activated T cells and is freely able to circulate and destroy all LAG-3 activated T cells until none remain. The depletion of LAG-3 positive cells in autoimmune tissue will be much more rapid and long lasting while waiting for the T cells to regenerate.

As IMP761 is an agonist, it can turn off activated T cells. The effects may be shorter lasting and reversible which might be of benefit in certain clinical settings. The key features of each of the LAG-3 antibodies in the Prima pipeline are summarised in the picture below.

IMP761 is an early stage product and in the year ahead we aim to take it into pre-clinical development, including in vivo efficacy assays so we can better understand its potential applications.

Dr Frederic Triebel  
Prima's Chief Scientific Officer and Chief Medical Officer



## Do we have your correct email address?

If Boardroom has a valid email address for you then you can receive all communication from Prima, including investor newsletters like this one, electronically. To add an email address to your account, or change the email registered there, please call Boardroom Ltd on **1300 737 760** within Australia or **+61 2 9260 9600** outside Australia.

## Company Calendar

<b>March 07–08, 2017</b>	Breast Cancer Summit, Boston, Massachusetts. On March 7, Frederic Triebel will talk about “An active immunotherapy combined with first-line weekly paclitaxel in metastatic breast cancer: first results of IMP321 (LAG-3lg) as an antigen presenting cell activator in the AIPAC phase IIb trial.”
<b>March 14–16, 2017</b>	3rd Annual Immune Checkpoint Inhibitors (ICI) Boston conference, Massachusetts
<b>March 28, 2017</b>	5th Annual Cancer BioPartnering & Investment Forum, New York Academy of Sciences, New York City, New Jersey
<b>June 02–06, 2017</b>	ASCO 2017, Chicago, Illinois

## Follow Prima’s progress

Prima BioMed is dedicated to maintaining consistent and clear communications with our investors. In addition to our quarterly newsletter, we encourage our shareholders to continue following Prima’s progress in a number of ways:

► **[www.primabiomed.com.au](http://www.primabiomed.com.au)**

The company website is a treasure trove for those in search of details about our company, our management team, and archived information. We encourage everyone to check it out regularly.

► **[www.clinicaltrials.gov](http://www.clinicaltrials.gov)**

Prima registers all of our clinical trials, and the details of enrolling doctors, on the ClinicalTrials.gov website, a service of the United States National Institutes of Health. This register is the largest such repository of clinical trial information around the world.

Our ClinicalTrials.gov ID for our trials are as follows:

- TACTI-mel trial is NCT02676869
- APAIC is NCT02614833

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## Prima BioMed – Fast Facts

### Listings

Australian Securities Exchange (ASX), NASDAQ

### Stock Codes

ASX: PRR, NASDAQ: PBMD

### Issued Capital – Ordinary shares

2.07B (approximate as of 1 March 2017)

### Issued ADR’s

6.14M (approximate as of 28 February 2017)

### Market Capitalisation

A\$74.52M (approximate as of 1 March 2017)

## Board of Directors

<b>Ms Lucy Turnbull, AO</b>	Non-executive Chairman
<b>Mr Albert Wong</b>	Non-executive Deputy Chairman
<b>Mr Marc Voigt</b>	Executive Director and Chief Executive Officer
<b>Dr Russell J Howard</b>	Non-executive Director
<b>Mr Pete A Meyers</b>	Non-executive Director

## Senior Management

<b>Prof Dr Frédéric Triebel</b>	Chief Medical Officer and Chief Scientific Officer
<b>Ms Deanne Miller</b>	Chief Operating Officer, General Counsel and Company Secretary