patrys

Harnessing the body's own defence systems to combat cancer

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Letter from the CEO

Dear Shareholders,

Over the past quarter Patrys has made significant developments across both our corporate and operational activities, and I am pleased to share this update with you.

As you may recall, in March 2016 we in-licensed a novel antibody technology, Deoxymab, discovered by Dr. James Hansen from Yale University. The early-stage technology is both exciting and revolutionary, and we were drawn to its science and commercial prospects. Since this time, our team has been working diligently to advance the development of this asset and in April 2017 we announced the selection of a lead candidate, PAT-DX1, that we will progress into a series of pre-clinical cancer models. This selection marks an exciting milestone for us, as we continue to make great strides towards actualising this revolutionary technology and expanding our portfolio.

We have also seen progression of our IgM platform. Our Chinese license partner, Hefei Co-Source, continues to make strong headway with PAT-SC1 and our pursuit of a partner to progress manufacture and an eventual clinical trial for PAT-SM6 is ongoing.

As noted in our 4C announcement released in April 2017, we ended the March quarter with a cash position of $2.081 million; net outflows from the quarter totalled $0.507 million, reflecting our significant investment in the Deoxymab 3E10 program. At the beginning of May, we also received the final tranche outstanding from an agreement related to recoveries from a contracting party. We are pleased to have collected this final instalment of the settlement and we will continue to maximise efforts around other non-dilutive capital inflows, including insurance recoveries, during the next quarter.

Given the advancements over the past months, outlined further in this newsletter, we are anticipating another positive upcoming quarter, and year, as we continue our devotion to the development and commercialisation of antibody technologies to improve the clinical outcomes for cancer patients.

Yours sincerely,

James Campbell
CEO & Managing Director

An Overview and Update on Deoxymabs

In April 2017, Patrys announced the exciting selection of a lead candidate antibody, PAT-DX1, from a number of variants tested from the Deoxymab 3E10 technology.

Since the late 1990s, antibodies have revolutionised cancer therapy with their ability to bind specific targets, and trigger cancer cell death responses. Despite the successes seen with therapeutic antibodies, there are limitations with some antibody therapies – namely resistance caused by changes to the structure or distribution of specific cancer markers and the toxic side effects that occur when antibodies attack healthy cells.

In March 2016, Patrys acquired the rights to a novel antibody-based technology from Yale University – this technology has the potential to overcome these limitations. As opposed to targeting specific markers for cancers, Deoxymab 3E10 targets tumors more generally and stops DNA repair mechanisms that cancer cells use to overcome existing therapies. Deoxymab 3E10 is a DNA-binding antibody that works by accumulating at tumors (as it is attracted to the swarm of extracellular DNA released from dead and dying cancer cells), penetrating the cancer cell nuclei, binding to sites of DNA damage and interfering with repair. Cancer cells, with pre-existing defects in DNA repair, cannot survive Deoxymab 3E10, even more so when it is coupled with an additional treatment therapy such as radiation or chemotherapy.

Working with international service providers, Patrys produced approximately 20 humanised variants of Dexoymab 3E10 and worked with Dr. James Hansen of Yale University, the international leader in this field, to screen the variants using a range of *in vitro* assays. This process saw some variants significantly outperform others, one of these being PAT-DX1. PAT-DX1 had a superior ability to invade cancer cells' nuclei and kill cancer cells. The selection of PAT-DX1 was guided by Patrys' Scientific Advisory Board. Our advisers, Dr. Pamela M. Klein and Dr. Allen Ebens, were impressed by the progress made to date and offered suggestions to refine the Company's pre-clinical activities and

selection of eventual clinical indication.

Deoxymab 3E10 is a radical technology, and the identification and selection of PAT-DX1 as the lead candidate marks a major milestone for Patrys - it allows the company to move forward with pre-clinical animal models in the coming months. The Company looks forward to receiving data from these animal studies that will guide the thinking on this asset; the data is expected to be available in Q3 2017.

PAT-DX1 has potential as a therapy for cancers that remain difficult to treat including endometrial, ovarian, pancreatic, colon and some breast cancers. PAT-DX1 is a very exciting development stage asset.

Patrys is currently in the process of filing patent applications to protect its recent discoveries and has received encouraging communications regarding other patent applications from the U.S. Patent and Trademark Office.

"Cancer cells, with pre-existing defects in DNA repair, cannot survive Deoxymab 3E10, even more so when it is coupled with an additional treatment therapy such as radiation or chemotherapy."

IgM Assets

Patrys currently has two clinical stage IgM assets – one partnered and the other seeking a co-development partner.

The PAT-SC1 program, Patrys' most mature product candidate is progressing under Patrys' Chinese license partner, Hefei Co-source Biomedical. This development program is overseen by a Joint Development Committee that meets face to face annually, and electronically as appropriate.

The deal with Hefei Co-source Biomedical covers the exclusive development and commercialisation of PAT-SC1 in China and Patrys is seeking similar partners for this asset in other jurisdictions.

Following a successful clinical trial in 2012, the Company completed the Phase 1/2a clinical trial of PAT-SM6 in multiple myeloma in March 2014. Patrys has identified a potentially improved manufacturing process for PAT-SM6, and can reactivate a clinical development program if appropriate partnership funding is obtained.

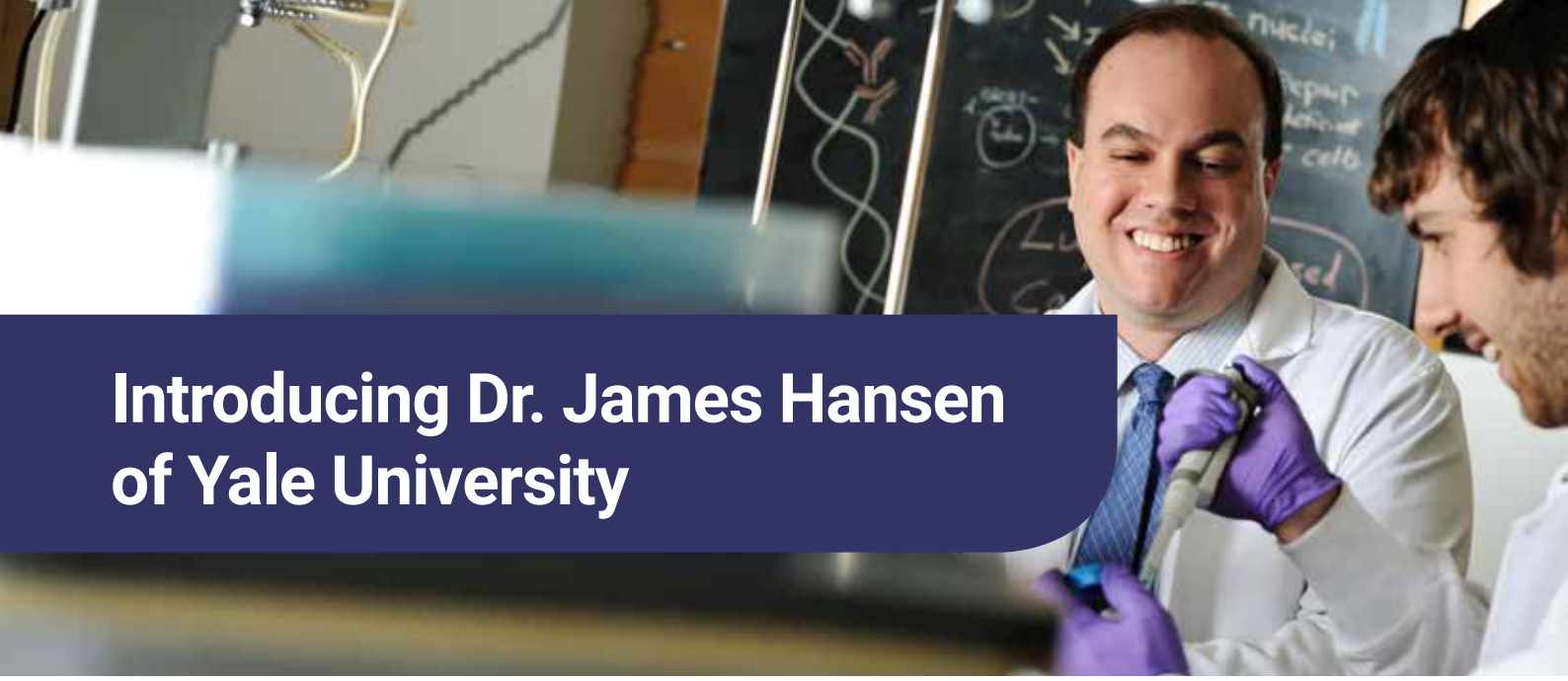
Financial Position

Patrys closed the quarter with a strong financial position.

Patry's Appendix 4C was announced to the ASX in April 2017. The report noted that the Company held cash reserves of $2.081 million at the end of March, with $0.507 million of net cash outflows from operating activities during the quarter, reflecting the investment in the development activities associated with the Deoxymab 3E10 program and chosen lead candidate, PAT-DX1.

More recently, in May, the Company received $394,947 as the final instalment of a settlement agreement regarding amounts due from a contracting party; the total settlement was $730,000. Patrys management continues with efforts to maximise other non-dilutive capital inflows, including insurance recoveries.

"The deal with Hefei Co-source Biomedical covers the exclusive development and commercialisation of PAT-SC1 in China..."



Introducing Dr. James Hansen of Yale University

Dr. James Hensen is the inventor of our Deoxymab technology, we talk to him about how he made this important discovery and his partnership with Patrys.

How did you begin in this particular field of research?

In 2003, during my clinical rotations in medical school at UCLA, I was fortunate to cross paths with Robert Nishimura, from whom I first learned of the cell-penetrating antibody called 3E10. At the time, Robert and his colleague Richard Weisbart, believed 3E10 might be useful as a molecular delivery vehicle, but were having trouble with the protein biochemistry and their yeast expression system. Coincidentally, I had a strong background in both these fields and, as such, I went on to spend a month in their lab to apply my knowledge.

Once in the lab, I was able to successfully get the yeast system going and then spent the rest of the month working with 3E10 and testing it on cells. After graduating, I joined Richard's lab full-time and, over the next three years, we collectively sought to understand the mechanism by which 3E10 penetrates cells while simultaneously working to develop 3E10 as a vehicle for delivery of therapeutic cargo proteins into cells. By the time my postdoc was done – we had identified the key transporter that allows 3E10 to penetrate into cells and established the therapeutic potential of using 3E10 as a delivery vehicle.

When did you begin developing the Deoxymab 3E10 technology?

After completing my postdoc in the lab with Richard, I moved to Yale for a residency in radiation oncology. Given my past work, I thought it would be interesting to use 3E10 to deliver molecules into cancer cells to modulate their response to radiation treatments. Shortly after initiating this research, I discovered that 3E10 inhibits key steps in DNA repair and, as such, actually makes cancer cells and tumours more sensitive to radiation.

We went on to show that cancer cells that harbor certain defects in DNA repair become overwhelmed with DNA damage and die when exposed to 3E10, whereas normal cells with robust DNA repair survive the effects of 3E10; these findings established the foundation for our new Deoxymab 3E10 technology.

What makes Deoxymab 3E10 unique from other antibody therapies?

Deoxymab 3E10 has several key features that distinguish it from all other antibodies currently in use in cancer therapy: it preferentially localises to tumours, it is able to penetrate into cancer cell nuclei using a novel mechanism, and it inhibits DNA repair and sensitizes the cancer cells to chemotherapy or radiation.

How do you ensure that the antibody therapy doesn't attack healthy cells?

3E10 is not toxic to normal cells because they have robust DNA repair machinery and can repair any damage that may occur as a result of exposure to 3E10; only cancerous cells are repair-deficient and, as a result, die. That said, most normal cells are never even exposed to 3E10 as the antibody therapy preferentially localises to tumors.

How will you ensure that 3E10 won't cause any lupus-like side effects?

Once we recognized the potential to use 3E10 against cancer - we set out to optimise the antibody for this purpose. In doing so, we have re-engineered the antibody to maximise its interaction with DNA and increase its effects on cancer, whilst also to eliminating the components of the antibody that carry the greatest risk for causing lupus-like side effects.

Could Deoxymab 3E10 be used in other therapies beyond cancer?

Now that we understand that 3E10 preferentially localizes to sites that are enriched in DNA, it's reasonable to expect that we will be able to harness this feature to help deliver agents to other sites of tissue damage where DNA is also released –i.e. for treatment of traumatic injuries, myocardial infarctions, or stroke.

How far along is the development of the second Deoxymab lupus autoantibody, Deoxymab 5C6?

We have found that Deoxymab 5C6 has similarities to 3E10 in that it penetrates nuclei and is preferentially toxic to DNA repair-deficient cancer cells, but it is also distinct because it has direct DNA-damaging activity. 5C6 adds an extra dimension to the Deoxymab library, and ongoing studies will determine its mechanism of nuclear penetration, biodistribution profile, and ultimate clinical potential.

Why Patrys?

The Deoxymabs represent an entirely new approach to antibody-based cancer therapy, and many companies were interested in obtaining the rights to this technology. James Campbell and the Patrys team best demonstrated that they understood the novelty of these antibodies, had the expertise necessary for the manufacture of therapeutic antibody formulations, and shared my goal of getting this technology into the clinic where it can help patients as quickly as possible. We are making excellent progress and I remain convinced that the Deoxymabs have potential to make major contributions to patient care and that Patrys is the best commercial partner to help advance their development.

Patrys Overview

Patrys Group is a biopharmaceutical drug development company with operations in Australia and the United States of America.

Patrys' expertise and assets target antibody therapeutics in the field of oncology with both IgM antibodies and IgG antibody fragments under development.

Patrys has successfully out-licensed a clinical candidate, PAT-SC1 for the Chinese oncology market and has conducted two clinical trials with another lead candidate from its IgM platform, PAT-SM6. Patrys has recently in-licensed from Yale University a suite of novel, nucleus penetrating antibodies (Deoxymabs 3E10 and 5C6) which it will progress through development. Patrys will continue to advance lead candidates from both technology platforms towards the market.

Patrys Limited is an ASX listed company (ASX:PAB) with its corporate headquarters in Melbourne, Australia.

For further information on Patrys, visit www.patrys.com

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