Biotron

Biotron Limited ABN 60 086 399 144

BITNews

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Dear Shareholders,

The first half of 2019 has been very productive for Biotron, following on from the successful outcomes of the BIT225-009 phase 2 HIV-1 clinical trial which were released to the market in late 2018. The Company continues to focus on progressing its core antiviral programs with the aim of achieving a commercial outcome.

Top of the list has been understanding the science behind the unique effect of BIT225 that was observed in the trial. We have been developing BIT225 for several years, generating a solid foundation of data showing how the drug attacks HIV-1 in macrophage cells – these are key reservoirs of virus that current anti-HIV drugs cannot access.

This trial was the first time that BIT225 was tested in HIV-infected people over an extended period (12 weeks of dosing). This means that we were able to measure different responses than can be analysed in shorter trials and identify specific effects in humans that cannot be discerned from cell culture or animal studies.

The relationships between invading viruses and the body's responses to these attacks are complex. Viruses are programmed to enter and hijack cells so that the virus can replicate and infect more cells. The body's responds to prevent this happening, relying on its immune system to seek out and kill the invading virus. To protect itself, each viral species has developed ways to trick the body's immune system so that the virus can evade the cells seeking to destroy them.

One of the main focuses of the international medical field is how to induce the body's immune system to work more efficiently, so that it will seek out and destroy hidden viruses.

The reason why Biotron is so encouraged by the results of the 009 HIV-1 phase 2 trial is because the trial data indicate that BIT225 induces such a desired immune response. This effect is additional to the targeting by BIT225 of virus in macrophage cells. These cells remain one of the key reservoirs of infection even in the presence of current approved anti-HIV-1 drugs. Together, these two effects of BIT225 have the potential to be key steps towards the ultimate goal of eradicating HIV-1 virus.

Since the completion of the 009 trial, we have been working on understanding exactly how treatment with BIT225 has generated this immune response. We have had a strong rationale of how BIT225 induces these changes and to prove this we have been testing samples of blood collected during the trial for a range of different markers. The levels of these markers allow us to determine precisely how BIT225 treatment has impacted on specific immune pathways.

This testing of blood samples is proceeding well and providing key information that is helping us to understand the mechanism behind the results observed in the 009 clinical trial. The results are showing us, and importantly, potential partners, how BIT225 works and how it can be used to eradicate HIV.

In coming weeks, the Company will hold a Scientific/Clinical Advisory Meeting with internationally recognised HIV-1 experts. The participants have extensive expertise in clinical development of HIV-1 treatments, as well as experience in advising the pharma industry. The aim is to map out the next stage of clinical development based on the latest data. During the second half of 2019, we are planning to consult with the USA Food and Drug Administration (FDA) to ensure the proposed path is in accordance with relevant regulations.

The positive outcomes from the 009 trial also mean that Biotron has been meeting with key potential partners with compelling Phase 2 data in hand. Phase 2 is generally considered the best time to license technology to a major pharmaceutical company as they have the expertise and resources necessary for late stage clinical development and regulatory approvals in major markets such as the USA. The additional data being generated on the mechanism of action of BIT225 on the immune system in the 009 trial are central to furthering these discussions.

From time to time there are media reports of HIV-1 "cures". These reports can be misleading and generally do not reflect the fact that the work is at a very early i.e. preclinical stage of development and may be several years away from human trials. In contrast, Biotron has a phase 2 drug with substantial data generated in humans, and which targets HIV-1 in one of the key reservoirs of virus infection that is not cleared by current anti-HIV-1 drugs. New compounds must pass many hurdles before they get to human trials – not all drugs pass safely through the rigorous pre-clinical toxicology testing that are required before first-in-man safety studies.

And as we have stated many times in our communications, eradication of HIV-1 is expected to require several drugs working in combination.

Hepatitis B Virus Program Update

Control and cure of Hepatitis B virus (HBV) has recently emerged as an important focus of endeavour for antiviral drug development by the pharmaceutical industry. Over 2 billion people worldwide have been infected with HBV. The World Health Organisation estimates that over 250 million are chronically infected. Like HIV-1, HBV can be treated with drugs that stop virus replicating, but these do not eradicate the virus. Chronic infection with HBV can lead to complications such as cirrhosis and liver cancer, and causes close to one million deaths each year.

There is a concerted international push to develop strategies to cure HBV. The virus life cycle is complex, and it is expected that several different approaches in combination will be required to eradicate the virus.

Biotron has designed a portfolio of small molecule drugs that effectively work against HBV in cell cultures. While early, the data are encouraging. We are working with a US-based research group to further characterise the anti-HBV activity of Biotron's compounds.

The reason for optimism is the fact that these compounds reduce the levels of several key markers of HBV infection in the cell assays. These reduced markers include one called cccDNA. It is generally accepted that a cure for HBV will require drugs that target cccDNA. To date such compounds have proved elusive.

In parallel with laboratory anti-HBV assays, preliminary safety studies are being performed on two particularly promising compounds. The aim is to identify a lead compound to progress to formal safety studies as quickly as possible.

The FDA recognises the need to develop effective new treatments for HBV. In consultation with European regulatory authorities and professional societies representing the European and American liver groups (EASL and AASLD) the FDA has put out a clear guidance document for preclinical and clinical development of new compounds.

Professor Stephen Locarnini, appointed Non-Executive Director of Biotron in late 2018, brings key expertise to Biotron's HBV program. Professor Locarnini is on the advisory board of international industry players in the HBV field, and is considered one of the world's leading HBV experts.

Biotron continues to share updates on its HBV program with relevant pharmaceutical companies, and this promising program may provide an opportunity for an early partnering deal.

To Conclude

Development of new drugs is not a fast process. The strict international regulatory and safety requirements mean that there are no shortcuts. Similarly, partnerships in the biopharmaceutical industry take time. They are dependent on good science, addressing clear unmet medical needs, and rigorous data. Biotron's core antiviral programs have all these key elements. We have good relationships with the pharmaceutical companies active in this space and ongoing dialogue on these programs are in progress.

We appreciate the ongoing support and patience of shareholders while we work to achieve the long-awaited commercial outcomes.

Regards,

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