Biotron Limited ABN 60 086 399 144

BITNews

July 2021

Dear Shareholders,

In 2021 Biotron has continued to progress the clinical development of the Company's lead anti-viral drug BIT225 according to the technical plan developed in consultation with members of our international Scientific Advisory Board and Chief Medical Officer.

BIT225 will shortly enter a pair of clinical trials in HIV-positive populations, one in Thailand and another in Australia, both due to start during the third quarter of this year. The trials will build on the positive results from the completed BIT225-009 Phase 2 clinical trial and will incorporate the findings from ongoing cell-based studies and post-trial analyses of samples.

The BIT225-009 trial was a randomised control study conducted in 36 HIV patients in Thailand. It tested BIT225 in combination with Atripla, an approved current anti-HIV-1 drug. The trial indicated that BIT225 induced statistically significant changes in key cell populations and markers of relevance to immune responses to HIV-1.

BIT225 is a first-in-class small-molecule anti-viral compound that inhibits the Vpu protein of HIV-1. As it infects cells, HIV-1 initiates a process to weaken the body's immune responses. As part of this process, specific cell surface markers that normally signal the immune system to attack the virus are "down-regulated". This enables the virus to evade the immune response and persist in cellular reservoirs, which survive despite potent approved anti-HIV-1 drugs. It is Vpu that is largely responsible for setting up this evasion of the immune response by the virus.

The changes seen in the BIT225-treated group in the BIT225-009 trial indicate that the immune system was able "see" the HIV-infected reservoir cells. The unmasking of virus hidden in reservoirs has the potential to allow the body's immune system to work with the anti-HIV-1 drugs to clear out inaccessible pockets of virus and eradicate the infection.

We have undertaken additional laboratory studies to investigate the mechanisms by which BIT225 induced these positive changes. In July 2020 we presented data from cell-based studies in collaboration with researchers at The Scripps Research Institute, California, which showed that BIT225 restored key receptors on HIV-infected cells in culture through the drug's targeting of Vpu.

Our goal with BIT225 is to eliminate the reservoirs of HIV-1 in the body. Improvements in immune function that appear to be a direct result of BIT225 in the presence of HIV-1 may have additional key health benefits. Improvements in these immune functions in patients can be readily assessed by measuring key immune cell populations and markers.

The next two clinical trials are central to demonstrating to potential pharmaceutical partners and regulatory authorities how BIT225 can be used to improve patient outcomes and address currently unmet medical needs.

The proposed Australian trial (BIT225-011) will include people who have been on approved anti-HIV-1 treatment (ART) for an extended period, with well-controlled HIV-1 infection, but who have not achieved full immune reconstitution. It has been estimated that up to 40% of HIV-infected people do not achieve immune reconstitution despite virus levels below the level of detection. This population is at an increased risk of clinical progression to AIDS and non-AIDS events and has higher rates of mortality than HIV-infected individuals with adequate immune reconstitution. BIT225 will be added to this group's ART treatment for a period of three months. The endpoints will include measurements of improved immune function and markers that link to immune reconstitution.

The Thai trial (BIT225-010) will be conducted on a treatment-naïve group (a population not available in Australia) – meaning they have just been diagnosed with HIV-1 and yet to start ART. This group will have BIT225 added to their ART at the beginning of treatment for a period of six months. The dosing period is twice as long as in the earlier BIT225-009 trial. Successful completion of long-term toxicology studies of BIT225 in late 2020 was an important milestone, as the results support and enable long-term dosing of BIT225 in this next stage of clinical development.

In both of these next trials we will be looking in more detail at the immune changes observed in the BIT225-009 trial. Positive changes such as immune function restoration go hand-in-glove with eradication of HIV reservoirs and are surrogate markers of reduction of virus below the level of quantitation.

Currently, protocols for these two trials are being finalised and progressing through relevant ethics and regulatory processes. Subject to receipt of the necessary approvals, recruitment is expected to commence in the third quarter of 2021 and be complete by mid-2022, with data available in the second half of 2022.

COVID-19 infection

Despite the progress the world has seen over the past year with vaccines, COVID-19 remains a worldwide health issue. The focus is starting to shift to drugs to treat COVID-19. Health authorities know that vaccines are not 100% effective. It is apparent that people who are vaccinated against COVID-19 can still become infected with and transmit the virus. As new strains of COVID-19 emerge, the vaccines may need updating, which means additional delays.

Health authorities want the biotech industry to develop small-molecule anti-viral drugs to reduce the severity of COVID-19 infection and, in particular, the number of hospitalisations. The US government recently announced that it will spend US$3 billion this year developing antiviral drugs to treat the disease. Biotron has continued throughout the last 12 months to make good progress with its COVID-19 antiviral compounds.

As reported in early 2020, Biotron compounds have shown very good activity against a range of coronaviruses, dating back to work undertaken in 2002-2004 during the outbreak of severe acute respiratory syndrome (SARS) which, like SARS-CoV-2, was a coronavirus.

Over the past year Biotron has designed, synthesised and screened a series of new compounds designed specifically to target SARS-CoV-2. As announced in March this year, Biotron has identified a lead series of new novel compounds. They show good activity against SARS-CoV-2 in a series of cell culture-based assays undertaken at The Scripps Research Institute.

These compounds are currently undergoing testing in mice to determine dose and safety profiles, ahead of testing in a specialised mouse model of COVID. This work is progressing well. Demonstration of reduced virus levels in the lungs of these mice will validate Biotron's approach and represent a key milestone for the program for potential partners.

Hepatitis B program progressing

Biotron continues to progress its Hepatitis B virus (HBV) program. Like HIV-1, HBV can be treated with drugs that stop the virus replicating, but these do not eradicate the virus. Chronic infection with HBV can lead to complications such as cirrhosis and liver cancer, which cause close to one million deaths worldwide each year.

Biotron's compounds have demonstrated significant anti-viral activity against HBV in pre-clinical studies in cell-cultures, reducing levels of cccDNA (covalently closed circular DNA), as well as other key viral markers.

We are currently progressing studies to select a lead drug candidate to take forward to safety studies. While Biotron's work on its HBV compounds is pre-clinical, we believe the data from these studies further validate our approach to anti-viral drug development and may lead to an early stage development opportunity with an appropriate partner.

Healthy financial position

Biotron's cash position as at the most recent quarter end (March 2021) of $3,822,000 places the Company in a sound financial position to focus on achieving commercial outcomes for its programs. This position was subsequently strengthened in April by the receipt of an R&D Tax Incentive refund for the 2019/20 financial year of $1,411,944. The Company expects that these funds, along with future R&D Tax Incentive refunds, will be sufficient to complete the studies outlined above.

Best regards,

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