

Further Data Confirms Potential Utility of Cymerus MSCs in Restoring Cardiac Function Following Heart Attack

Melbourne, Australia; 24 September 2020: Cynata Therapeutics Limited (ASX: CYP), a clinical-stage biotechnology company specialising in cell therapeutics, is pleased to announce further positive efficacy data from a study of its Cymerus™ mesenchymal stem cells (MSCs) in a preclinical heart attack model. In particular, treatment with Cymerus MSCs was shown to enhance the recovery of the blood supply to the damaged heart through the generation of new blood vessels. New vessel formation is accepted as an essential element of repair after the damage caused by a myocardial infarction, i.e. heart attack.

Key Highlights

- **Additional efficacy data from preclinical disease model on recovery of cardiac function post heart attack help to explain the previously announced superior therapeutic effects demonstrated by Cymerus MSC treatment when compared to conventional bone marrow-derived MSC treatment and placebo**
- **The new data show that Cynata’s Cymerus MSCs enhance the recovery of the blood supply to the damaged heart by:**
 - **Enhancing the development of new blood capillaries** (around twice as many capillaries were shown in the Cymerus MSC group versus placebo controls)
 - **Enhancing arteriogenesis (growth of arterioles: small blood vessels) - whereas bone marrow-derived MSCs did not** (nearly three times as many arterioles were shown in the Cymerus MSC group versus placebo controls)
 - **Releasing higher levels of molecules known to be involved in the stimulation of new blood vessel growth** (provides a rationale for the increased growth of blood vessels seen following treatment with Cymerus MSCs)
- **This builds on the significant dataset demonstrating the potential benefits of treatment with Cynata’s Cymerus MSCs and Cynata will continue to work with relevant parties to determine the next steps for this program and broader clinical development**

The data arise from further studies conducted by a team led by Associate Professor James Chong (Westmead Institute for Medical Research, Sydney). As previously announced, initial studies by Associate Professor Chong’s team showed that Cymerus MSC treatment improved recovery of cardiac function post heart attack compared to either placebo or bone marrow-derived MSCs (BM-MSCs). The latest results help to explain the mechanism for the superior therapeutic effects of Cymerus MSCs compared to conventional BM-MSCs and placebo in this disease model. The data from this study will be submitted for publication to a peer-reviewed medical journal.

Dr Kilian Kelly, Cynata’s Chief Operating Officer, said: *“With the benefit of this further data we are now able to better understand the beneficial effects of our Cymerus MSCs in this model of heart attack. It is particularly notable that the latest results are consistent with the greater benefit demonstrated by Cymerus MSCs over BM-MSCs in the earlier studies of heart function. Given the scalability and consistency advantages of the Cymerus MSC manufacturing process over conventional processes, the potential therapeutic advantages shown here are particularly interesting as a putative treatment for post heart-attack cardiac damage.”*

-ENDS-

Authorised for release by Dr Ross Macdonald, Managing Director & CEO

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About the Study: Preclinical Heart Attack Model

This study was conducted under the leadership of Associate Professor James Chong at the Westmead Institute for Medical Research, Sydney. In the study, a heart attack was induced in rats, which received treatment four days later, and were then assessed over a 28-day period. The rats (15 per group) were randomly assigned to one of three treatment groups (Cymerus MSCs; BM-MSCs; or placebo), and all assessments were performed in a blinded manner, which means that staff were not aware of which treatment the animals had received.

About Cynata Therapeutics (ASX: CYP)

Cynata Therapeutics Limited (ASX: CYP) is an Australian clinical-stage stem cell and regenerative medicine company focused on the development of therapies based on Cymerus, a proprietary therapeutic stem cell platform technology. Cymerus overcomes the challenges of other production methods by using induced pluripotent stem cells (iPSCs) and a precursor cell known as mesenchymoangioblast (MCA) to achieve economic manufacture of cell therapy products, including mesenchymal stem cells (MSCs), at commercial scale without the limitation of multiple donors.

Cynata's lead product candidate CYP-001 met all clinical endpoints and demonstrated positive safety and efficacy data for the treatment of steroid-resistant acute graft-versus-host disease (GvHD) in a Phase 1 trial. Cynata plans to advance its Cymerus MSCs into Phase 2 trials for severe complications arising from COVID-19, acute GvHD and a Phase 3 trial in osteoarthritis. In addition, Cynata has demonstrated utility of its Cymerus MSC technology in preclinical models of asthma, diabetic wounds, heart attack, sepsis, acute respiratory distress syndrome (ARDS) cytokine release syndrome and pulmonary fibrosis.

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