

Cynata Partners with UWA Centre for Cell Therapy and Regenerative Medicine

- The University of WA (UWA) to test Cynata's Cymerus™ stem cells in lung fibrosis disease model
- Leading stem cell and regenerative medicine researchers overseeing study recognise the unique qualities and advantages of Cymerus™ stem cells
- Market value in US and EU for idiopathic form of lung fibrosis approaching US\$1billion [1]

Melbourne, Australia; 3 December 2014: Stem cell and regenerative medicine company, Cynata Therapeutics Ltd (ASX: CYP), announced today that it has commenced a study to test the potential therapeutic efficacy of its Cymerus™ mesenchymal stem cells (MSCs) in an animal model of lung fibrosis. This study will be performed within The University of Western Australia's Centre for Cell Therapy and Regenerative Medicine (CCTRM) in the School of Medicine and Pharmacology with researchers who have a wealth of expertise in lung fibrosis and regenerative medicine. Professor Geoff Laurent, who will take primary responsibility for the study, is a world authority in extracellular matrix regulation and lung fibrosis, having made major contributions to these fields. He has more than 300 publications in this and related areas. The lead investigator of the study is Dr Cecilia Prêle, a cell biologist with expertise in tissue fibrosis, animal models and signal transduction pathways. The study is intended to provide further proof-of-concept data on Cynata's Cymerus™ MSCs.

Lung fibrosis occurs in a range of disorders characterised by excessive deposition of extracellular matrix (ECM) proteins within the pulmonary interstitium, leading to impaired gas transfer and a loss of lung function [2]. In the lung, fibrosis may be caused by known insults such as asbestos or radiation exposure but can develop in the absence of a known stimulus, such as in idiopathic pulmonary fibrosis (IPF). To date, no treatment has been shown to be effective for IPF, and on average, patients survive for only 3-5 years after diagnosis with this extremely debilitating condition [3]. The development of more efficient therapeutic approaches is urgently required to suppress and reverse the fibrotic response.

All adult tissues, including the lung, have some capacity to self-repair or regenerate through the replication and differentiation of stem cells resident within these organs [4]. While lung resident stem cells are a candidate cell therapy for lung diseases, limitations exist regarding our knowledge of the biology of these cells. In contrast, there is considerable interest in the therapeutic potential of exogenous cells, particularly MSCs, for lung diseases. Many studies have provided direct evidence that MSCs can potentially be used for the treatment of lung diseases including lung fibrosis [5]. Most of these studies have used bone marrow-derived MSCs although several studies have used MSCs derived from other sources.



Professor Laurent said: “While adult tissues represent a useful source of MSCs, there are also significant limitations with this approach. In particular, it is known that as a stem cell matures, it gradually loses its versatility. The range of tissues into which it can differentiate becomes restricted and its expansion capability is diminished. This study will examine the potential of MSCs derived using Cymerus™ technology, to prevent and reverse fibrosis in an animal model of lung fibrosis.” He went on to conclude: “It is important to achieve economic manufacture of relevant quantities of very pure and well-characterised MSCs at a commercial scale to use in medicine and this is why we are partnering with Cynata on this project. Our long-term goal is to develop effective treatments for patients suffering with fibrotic lung disorders such as IPF.”

“This partnership with UWA builds on Cynata’s existing relationship, announced in 2014, with Grey Innovation in the development of a unique nebuliser technology to conveniently and efficiently deliver viable stem cells to the lung,” said Cynata CEO, Dr Ross Macdonald. “Reliable delivery of stem cells into the lung will be an essential element of a commercially relevant treatment for lung fibrosis as well as for a range of other lung diseases. We look forward to working with Professor Laurent and Dr Prêlle in this exciting new program.”

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About Cynata Therapeutics (ASX:CYP)

Cynata Therapeutics Ltd (ASX: CYP) is an Australian stem cell and regenerative medicine company that is developing a therapeutic stem cell platform technology, Cymerus™, originating from the University of Wisconsin-Madison, a world leader in stem cell research. The proprietary Cymerus™ technology seeks to address a critical shortcoming in existing methods of production of mesenchymal stem cells (MSCs) for therapeutic use, which is the ability to achieve economic manufacture at commercial scale. Cymerus™ does so through the production of a particular type of MSC precursor, called a mesenchymoangioblast (MCA). The Cymerus™ MCA platform provides a source of MSCs that is independent of donor limitations and provides a potential “off-the-shelf” stem cell platform for therapeutic product use, with a pharmaceutical business model and economies of scale. This has the potential to create a new standard in the emergent arena of stem cell therapeutics and provides both a unique differentiator and an important competitive position.

About UWA Centre for Cell Therapy and Regenerative Medicine

The CCTRM facilitates a multidisciplinary approach to research, building on the acknowledged research expertise already present in Western Australia. The Centre is directed by Professor Geoffrey Laurent, an internationally recognised researcher who until recently led a world recognised research and training centre at University College London, UK. Professor Laurent is supported by the Centre’s Deputy and Clinical Directors, Winthrop Professors George Yeoh and Fiona Wood. Professor Yeoh is world leading expert in liver stem cell biology particularly in relation to cancer. Professor Wood is a leading surgeon and has an international reputation for the clinical use of cell therapy approaches for skin repair. Over the last century we have seen transformational changes in medical practice based on scientific discovery. The next transformations in patient care will come from stem cell therapy and regenerative medicine. There are already some spectacular successes in treating leukaemia and eye diseases such as macular degeneration. The aim of our research is to extend these technologies to treat a wider spectrum of debilitating and chronic diseases.

The vision of the Centre “New Ideas Leading to New Medicines” is supported by a common research strategy across many areas of medicine. Disease areas include cancer, asthma, chronic lung diseases, diabetes, heart disease, rheumatoid



arthritis, osteoarthritis, osteoporosis, fibrosis, macular degeneration, muscle degeneration and neurodegenerative diseases such as Alzheimer's. In addition, we are investigating strategies to replace damaged tissue following acute trauma.

References

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