ASX ANNOUNCEMENT **31 May 2018**

Cynata's Cymerus™ MSCs Effective in Preclinical Model of Diabetic Wounds

Melbourne, Australia, 31 May 2018: Australian stem cell and regenerative medicine company Cynata Therapeutics Limited (ASX: CYP) is pleased to announce that it has received positive data demonstrating the efficacy of its Cymerus™ mesenchymal stem cells (MSCs) in a preclinical model of diabetic wounds (also known as diabetic ulcers). The studies were conducted independently by the Cooperative Research Centre for Cell Therapy Manufacturing (CTM CRC) and were designed to compare cells from various sources.

Key Highlights:

- **Cymerus MSCs resulted in significantly faster wound healing than bone marrow-derived MSCs**
- **Discussions between Cynata and CTM CRC are underway regarding progressing Cymerus MSCs and CTM CRC's wound-dressing technology into a clinical trial in human patients with diabetic foot ulcers**
- **Diabetic wounds are prevalent among the 400m+ diabetics globally and a significant opportunity exists to improve existing treatments and meet a growing unmet medical need**

CTM CRC, based in Adelaide, South Australia, is developing an active wound care dressing for the treatment of diabetic wounds. This novel dressing, for which a patent is pending, consists of a polymer-coated silicone dressing seeded with MSCs or similar cells.

Dr Leanna Read, CTM CRC's Chair and CEO, said, "Rapid wound closure reduces the risk of infection and wound management costs, and improves health outcomes for patients. Our studies show that delivery of Cymerus MSCs via CTM CRC's proprietary polymer-coated dressing can accelerate re-epithelialisation and wound closure when compared to the dressing alone or treatment with commercially produced bone marrow-derived MSCs. We need only a small number of MSCs to seed the dressing, so we expect that this product could be produced at a low cost and positioned very competitively against existing treatment options."

Study Findings:

In these preclinical studies, CTM CRC evaluated cells from five different sources: Cymerus MSCs, bone marrow-derived MSCs supplied by a commercial manufacturer, and MSCs derived from dental pulp, bone chips and gingival fibroblasts (cells found in the gums) that were supplied by an academic collaborator.

The primary outcome measure was the extent of re-epithelialisation (skin restoration) of the wound surface after three days, which is representative of the speed of wound healing. Dressings seeded with MSCs from any source were found to be more effective than the dressing alone (48 percent re-epithelialisation after three days). However, dressings seeded with Cymerus MSCs resulted in significantly greater re-epithelialisation after three days (86 percent) than dressings seeded with commercially available bone marrow-derived MSCs (51 percent). MSCs derived from dental pulp, gingival fibroblasts and bone chips resulted in re-epithelialisation of 68, 80 and 91 percent, respectively, after three days.

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These results suggest that the most effective cell types for this application are Cymerus MSCs or MSCs derived from gingival fibroblasts or bone chips. However, the gingival fibroblast- and bone chip-derived MSCs were produced in an academic laboratory under non-GMP conditions, and there are major challenges associated with producing clinical-grade cells from those sources at commercial scale. Conversely, Cynata's Cymerus technology platform provides a readily available and effectively limitless source of consistent, clinical-grade MSCs.

Diabetes is the fastest growing chronic disease worldwide,[1] affecting an estimated 425 million, or 1 in 11, adults globally in 2017 and forecasted to affect 629 million adults by 2045.[2] Up to 34% of those with diabetes will develop a foot ulcer,[3] providing a portal for infection that can lead to life-threatening sepsis and/or amputation.[4] With one diabetes-related extremity amputation now performed every 20 seconds,[5] the burden associated with this condition is extremely high for both the individuals affected and society as a whole.

Dr Kilian Kelly, Cynata's Vice President of Product Development, said, "We are very encouraged by these results, and believe the combination of CTM CRC's wound-dressing technology with Cynata's Cymerus MSCs has the potential to address a huge – and growing – unmet medical need. We look forward to continuing this very promising collaboration with CTM CRC."

Next Steps:

Cynata and CTM CRC are in discussions regarding an extended collaboration, with a view to commencing a clinical trial of Cymerus MSCs with CTM CRC's wound-dressing technology in human patients with diabetic foot ulcers.

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About the CRC for Cell Therapy Manufacturing (CTM CRC)

The Cooperative Research Centre for Cell Therapy Manufacturing (CTM CRC) is an international collaboration of 16 participant organisations spanning industry, clinicians, healthcare and research providers.

A $60M investment from the Australian Government and CTM CRC's participants enables CTM CRC to connect cell biology with advanced materials in a unique approach to address the challenges in regenerative medicine today. Through this, CTM CRC is developing integrated solutions for cost effective, accessible cell therapies.

CTM CRC is part of the Australian Government's Cooperative Research Centres (CRC) Programme. The CRC Programme aims to foster high-quality research to solve industry-identified issues through industry-led and outcome-focused collaborative research partnerships.

About Cynata Therapeutics (ASX: CYP)

Cynata Therapeutics Limited (ASX: CYP) is an Australian clinical-stage 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 addresses 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™ utilises induced pluripotent stem cells (iPSCs) to produce a particular type of MSC precursor, called a mesenchymoangioblast (MCA). Cymerus™ provides a source of MSCs that is independent of donor limitations and an "off-the-shelf" stem cell platform for therapeutic product use, with a pharmaceutical product 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.

[1] Zimmet P, Alberti KG, Shaw J. Global and societal implications of the diabetes epidemic. Nature. 2001;414(6865): 782-7.
[2] International Diabetes Federation. IDF Diabetes Atlas, 8th edn. Brussels, Belgium: International Diabetes Federation, 2017.
[3] Armstrong DG, Boulton AJM, Bus SA. Diabetic foot ulcers and their recurrence. N Engl J Med. 2017;376: 2367-75.
[4] Brem H, Tomic-Canic M. Cellular and molecular basis of wound healing in diabetes. J Clin Invest. 2007;117(5): 1219-22.
[5] Armstong DG, Kanda VA, Lavery LA, Marston W, Mills Sr JL, Boulton JM. Mind the gap: disparity between research funding and costs of care for diabetic foot ulcers. Diabetes Care. 2013;36(7): 1815-1817.

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