

25 January 2023

ASX Announcement

New publication highlights i-body potential in treating osteoporosis

Key highlights:

- **UWA and La Trobe University paper in peer reviewed Journal of Biological Chemistry suggests potential for i-bodies as therapies for osteoporosis**
- **The work is the subject of a patent application and opens a new area of commercial potential, further demonstrating the broad utility of i-bodies**
- **Osteoporosis affects 5% of men and 20% of women over 50, and costs the US healthcare system more than US\$25 billion per annum**

MELBOURNE Australia, 25 January 2023: AdAlta Limited (ASX:1AD), the clinical stage biotechnology company developing novel therapeutic products from its i-body platform, is pleased to advise that a new publication by collaborators at University of Western Australia (UWA) and La Trobe University has been published in the peer reviewed *Journal of Biological Chemistry*¹, further demonstrating the broad applicability of the i-body platform and opening up another area of commercial opportunity.

The research, led by Prof Jiake Xu at UWA, suggests the potential to use i-bodies as improved therapies for osteoporosis and other bone diseases.

AdAlta CEO and Managing Director, Dr Tim Oldham, commented: *"This work further demonstrates the potential of the i-body platform to engage diverse targets to modify disease. We look forward to continuing to support Professor Xu and his team as they work to discover improved therapies for osteoporosis. We have applied for a patent to protect this invention and are open to industry collaborations to advance this program."*

Osteoporosis is the result of imbalance between bone forming and bone resorption processes resulting in reduced bone density and the increased risk of fractures, particularly of the hip, spine and wrist. In US, EU and Japan it affects 20% of women and 5% of men aged over 50 and costs the US healthcare system more than US\$25 billion per year.²

Bone resorption is controlled by a cell membrane protein called RANKL. The published data demonstrates that an i-body, ADR3, that binds to RANKL is capable of inhibiting a wide range of cell signalling pathways controlled by RANKL, reducing bone resorption in *in vitro* assays. ADR3 demonstrated stability properties suitable for a therapeutic agent.

Therapeutics to treat osteoporosis and reduce fracture risk generate sales of US\$8 billion per year, with the leading antibody product, Prolia™ (denosumab) generating US\$3.2 billion.³ Side-effects such as osteonecrosis of the jaw (breakdown of the jaw bone), severe hypocalcaemia (low calcium levels), and increased femur (thigh) fractures may prompt the need for the discontinuation of therapy, which in turn causes a rebound of increased bone resorption and an increased risk of fractures. There is therefore a need for improved therapies for osteoporosis.

¹ Qiu H, Hosking C, Rothzerg E, Samantha A, Chen K, Kuek V, Jin H, Zhu S, Vrielink A, Lim K, Foley M, Xu J, ADR3, a next generation i-body to human RANKL, inhibits osteoclast formation and bone resorption, *Journal of Biological Chemistry* (2023), doi: <https://doi.org/10.1016/j.jbc.2023.102889>

² GlobalData, Osteoporosis: Global Drug Forecast and Market Analysis to 2027 update (2019).

³ Amgen FY21 Annual Report

Authorised for lodgement by:

Tim Oldham
CEO and Managing Director
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Notes to Editors

About AdAlta

AdAlta Limited is a clinical stage drug development company headquartered in Melbourne, Australia. The Company is using its proprietary i-body technology platform to solve challenging drug targeting problems and generate a promising new class of single domain antibody protein therapeutics with the potential to treat some of today's most challenging medical conditions.

The i-body technology mimics the shape and stability of a unique and versatile antigen binding domain that was discovered initially in sharks and then developed as a human protein. The result is a range of unique proteins capable of interacting with high selectivity, specificity and affinity with previously difficult to access targets such as G-protein coupled receptors (GPCRs) that are implicated in many serious diseases. i-bodies are the first fully human single domain antibody scaffold and the first based on the shark motif to reach clinical trials.

AdAlta has completed Phase I clinical studies for its lead i-body candidate, AD-214, that is being developed for the treatment of Idiopathic Pulmonary Fibrosis (IPF) and other human fibrotic diseases for which current therapies are sub-optimal and there is a high unmet medical need. AdAlta has a second target in discovery research, also in the field of fibrosis and inflammation.

The Company is also entering collaborative partnerships to advance the development of its i-body platform. It has a collaboration with Carina Biotech to co-develop precision engineered, i-body enabled CAR-T cell therapies (i-CAR-T) to bring new hope to patients with cancer. It has an agreement with GE Healthcare to co-develop i-bodies as diagnostic imaging agents (i-PET imaging) against Granzyme B, a biomarker of response to immuno-oncology drugs, a program now in pre-clinical development.

AdAlta's strategy is to maximise the products developed using its next generation i-body platform by internally discovering and developing selected i-body enabled product candidates against GPCRs implicated in fibrosis, inflammation and cancer and partnering with other biopharmaceutical companies to develop product candidates against other classes of receptor, in other indications, and in other product formats.

Further information can be found at: <https://adalta.com.au>

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