Publication that Demonstrates Reversal of Established Fibrosis in a Preclinical Model of Cardiac Fibrosis by VIP

Vectus Biosystems Limited (Vectus) is pleased to announce the publication of preclinical data in a model of cardiac fibrosis. The publication entitled "Vasoactive Intestinal Peptide Infusion Reverses Existing Myocardial Fibrosis in the Rat" (https://doi.org/10.1016/j.ejphar.2019.172629) appeared in the European Journal of Pharmacology, the official journal of The Federation of European Pharmacological Societies, published by Elsevier.

In this fundamental, peer-reviewed publication, researchers from Vectus demonstrated that infusion of the naturally occurring peptide molecule Vasoactive Intestinal Peptide (VIP) for four weeks increased VIP levels in the heart and completely prevented progression of fibrosis in a rat model of cardiac fibrosis. Even more importantly, the research has uniquely demonstrated the ability to reverse fibrotic damage that was already present at the time VIP therapy was commenced. The latter provides a distinct therapeutic advantage compared with currently available anti-fibrotic agents.

Replacement of functioning heart muscle by scar tissue (fibrosis) results in functional loss and eventually to heart failure. Heart failure is the commonest cause for hospital admission in adult medicine and is the most expensive health care item, costing 1-2% of total health budgets in the US ($30.7 billion), the UK, Sweden and Australia. The prognosis for heart failure is worse than for most cancers with a five-year mortality of 50-60% and a one-year mortality exceeding 50% in those with severe disease (termed New York Heart Association class IV). Thus, an effective treatment for cardiac fibrosis represents one of the largest unmet needs in clinical medicine.

Earlier work by Dr Duggan (Vectus' CEO) and other researchers had demonstrated that VIP levels in the heart decreased as the amount of fibrosis increased becoming absent in end-stage experimental cardiomyopathy and in the hearts of patients with end-stage cardiomyopathy that were removed at transplantation. These combined data suggested that depletion of VIP in the heart played a role in the development and progression of fibrosis. The demonstration that increasing cardiac VIP concentrations can reverse pre-existing disease provides evidence for a pivotal role for the depletion of VIP in tissues such as the heart in the development and progression of fibrotic disease. Further, these data establish VIP as a new therapeutic target.

Vectus has completed IND enabling toxicology studies on an orally available VIP analogue (VB0004), which displays similar capacity to reverse pre-existing fibrosis and which will enter Phase 1 clinical trial in 2020.

Vectus Biosystems Limited

Karen Duggan
Chief Executive Officer and Executive Director

Vectus Biosystems Pty Ltd
ABN: 54 117 526 137

Research Division – Level 3, CSIRO Building, 11 Julius Avenue, North Ryde NSW 2112
Tel: 61 2 8876 8200 Fax: 61 2 9870 7420

Corporate Division: 3-11 Primrose Avenue, Rosebery NSW 2018 Australia
Tel: 61 2 9662-4144 Fax: 61 2 9662-6040

About Vectus Biosystems Limited

Vectus Biosystems Limited (Vectus or the Company) is developing a treatment for fibrosis and high blood pressure, which includes the treatment for three of the largest diseases in the fibrotic market, namely heart, kidney and liver disease. Vectus successfully completed its Initial Public Offering (IPO) on the Australian Securities Exchange (ASX:VBS) and commenced trading on ASX on 23 February 2016, after raising A$5.1 million. Funds from the IPO were used to develop the Company's lead compound VB0004, which aims to treat the hardening of functional tissue and high blood pressure. Vectus has conducted a range of successful pre-clinical trials, which have shown that VB0004 slows down the advances of fibrosis, potentially repairs damaged cell tissue and reduces high blood pressure. VB0004 has progressed through a number of important milestones, including pharmaceutical scale-up and additional toxicity studies. Successful results have provided the Company with a clear path to Human Phase I and IIa Clinical Trials. Vectus' strategy is to develop and perform early validation of its drug candidates to the point where they may become commercially attractive to potential pharmaceutical partners.

The Company has also developed technology aimed at improving the speed and accuracy of measuring the amount of DNA and RNA in samples tested in laboratories. The technology, called Accugen, is owned by Vectus' wholly-owned subsidiary, Accugen Pty Limited. The technology offers a time, cost and accuracy benefit compared to currently-available systems. The Company's current stage of investment in Accugen is a commercialisation programme, where a combination of direct sales, distribution partnerships and licensing opportunities are being evaluated.