BioSpectrum
the business of Bio & Health Sciences
ASIA EDITION

Singapore scientists make a major breakthrough in fibrotic diseases

12 November 2017 | News

The scientists have founded a new company in Singapore to develop first-in-class therapies to treat patients with fibrotic diseases.

Singapore – Researchers from Duke-NUS Medical School (Duke-NUS) and the National Heart Centre Singapore (NHCS) have discovered that a critical protein, known as interleukin 11 (IL11) is responsible for fibrosis and causes organ damage. While it is surprising that the importance of IL11 has been overlooked and misunderstood for so long, it has now been very clearly demonstrated by this work.

A protein known as transforming growth factor beta 1 ("TGFB1") has long been known as the major cause of fibrosis and scarring of body organs, but treatments based on switching off the protein have severe side effects. The scientists discovered that IL11, is even more important than TGFB1 for fibrosis and that IL11 is a much better drug target than TGFB1.

The international team, led by Professor Stuart Cook, Tanoto Foundation Professor of Cardiovascular Medicine, along with Assistant Professor Sebastian Schäfer, both from NHCS and Duke-NUS' Programme in Cardiovascular and Metabolic Disorders, carried out the translational research to identify the key drivers of chronic fibrotic disease in heart, kidney and other tissues. The team also includes researchers from Harvard University and University of California, San Diego/UCSD (USA), Max Delbrück Center for Molecular Medicine/MDC-Berlin (Germany), London Institute of Medical Sciences/MRC-LMS and Imperial College London (the UK), and the University of Melbourne (Australia).

"Fibrotic diseases represent a major cause of illness and death around the world. The discovery that IL11 is a critical fibrotic factor represents a breakthrough for the field and for drug development. It is an incredibly exciting discovery," explained the study's senior author, Professor Cook, who is also Director, National Heart Research Institute Singapore.

The research was supported by the National Medical Research Council under its Singapore Translational Research award, the National Research Council Singapore Centre Grant to the NHCS, Goh Foundation, Tanoto Foundation, National Heart, Lung and Blood Institute, UK, Howard Hughes Medical Institute, USA (HHMI), and the Fondation Leducq.