New drug therapy targeting chronic kidney disease

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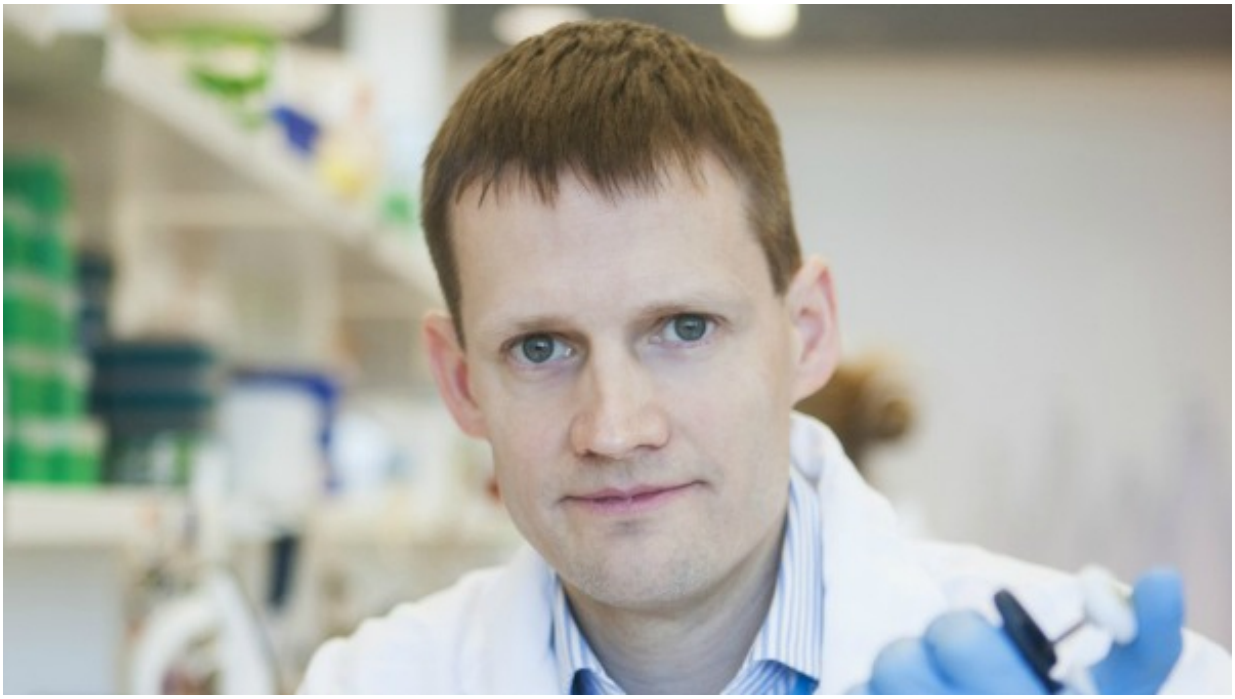

Associate Professor Kevin Pfleger. Credit: Perkins' Institute

A new drug therapy based on technology developed by Western Australian research could potentially control protein leakage from the kidneys.

Protein leakage (proteinuria) is a common manifestation of chronic kidney disease, an illness that may lead to kidney failure, cardiovascular

disease and premature death. Chronic kidney disease affects one in three Australians.

Head of Molecular Endocrinology and Pharmacology at the Harry Perkins Institute of Medical Research, Associate Professor Kevin Pfleger, is also Chief Scientific Advisor of biotechnology company Dimerix that is on track to release early results in the coming months from Phase II clinical trials of its flagship drug therapy DMX-200.

This breakthrough therapy, designed to alleviate the suffering of people afflicted with the loss of kidney function over time, was conceived due to the groundbreaking Receptor-Heteromer Investigation Technology (Receptor-HIT) developed at The University of Western Australia/Perkins and assigned to Dimerix in 2006.

A recent meeting with the US Food and Drug Administration (FDA) highlighted recognition of heteromer pharmacology, where receptors functionally interact in a cell, and therefore the importance of such approaches as Receptor-HIT for identifying new treatments.

The therapy being trialled comprises the addition of a blocker compound to one currently used to treat hypertension and nephropathy in Type II diabetic patients. A form of the added compound is currently used for the treatment of Hepatitis B in Japan.

A/Prof Pfleger says these blocker compounds were selected due to finding a functional interaction between the receptors they bind to in human kidney cells.

"These findings have been published in the scientific journal *PLoS One*, validated in rodent models by colleagues at St.Vincent's in Melbourne, and have led to the Phase II clinical trials" A/Prof Pfleger says.

A/Prof Pfleger says that this therapy also has the potential to treat other conditions and Dimerix is now investigating it for the treatment of non-alcoholic steatohepatitis (NASH), a form of non-alcoholic fatty liver disease. NASH is a severe disease affecting an estimated 6 million people in the US alone that currently has no established treatment.

A/Prof Pfleger, who is Chair-Elect of the Scientific Advisory Committee of the Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists (ASCEPT), has recently been awarded the prestigious Novartis Prize of the British Pharmacological Society and will receive this prize in December in London.

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