

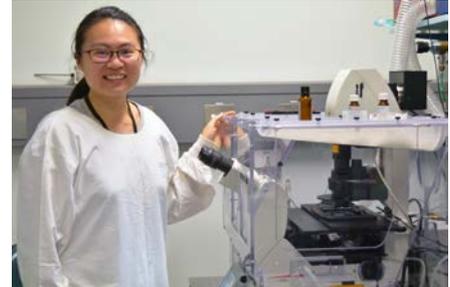
MEDIA RELEASE

29th November 2018

New treatment for diabetes-related blindness could be in sight

Scientists at the Centenary Institute have developed a novel drug which could potentially be used to effectively treat patients with diabetic retinopathy; the main cause of blindness from diabetes.

Diabetic retinopathy often occurs in diabetic patients, even when their blood sugar levels are controlled. The retina is responsible for detecting light and converting it to signals sent through the optic nerve to the brain. In diabetic retinopathy, the tiny blood vessels in the retina are damaged and can leak fluid or haemorrhage, often leading to vision loss.



Lead author Dr Ka Ka Ting

Treatment options for patients with diabetic retinopathy are currently limited to laser treatment, surgery or the direct injection into the eye of anti-vascular endothelial growth factor (VEGF) therapy – an antibody-based treatment. However, anti-VEGF is not always successful in patients or can result in side effects; highlighting the need for alternative therapeutic approaches.

The key process involved in diabetic retinopathy pathology is the breakdown of the blood-retinal barrier (BRB), which is normally impermeable. Its integrity relies on how well capillary endothelial cells are bound together by tight junctions. If the junctions are loose or damaged, the blood vessels can leak.

In collaboration with researchers in Denmark, scientists at the Centenary Institute in Sydney have demonstrated in mouse models, how a novel drug, CD5-2, can mend the damaged blood retinal barrier and reduce vascular leakage.

“We believe CD5-2 could potentially be used as a stand-alone therapy to treat those patients who fail to respond to the anti-VEGF treatment. It also may work in conjunction with existing anti-VEGF treatments to extend the effectiveness of the treatment. With limited treatment options currently available, it is critical we develop alternative strategies for the treatment of this outcome of diabetes,” says lead author Dr Ka Ka Ting from the Centenary Institute.

Head of Centenary’s Vascular Biology Program, Professor Jenny Gamble, has overseen previous studies where CD5-2 has been shown to have effects on the growth of blood vessels.

“This drug has shown great promise for the treatment of several major health problems, in the eye and in the brain. We are trying to raise the funds to progress CD5-2 through to clinical trials,” says Professor Gamble.

[‘Therapeutic regulation of VE-cadherin with a novel oligonucleotide drug for diabetic eye complications using retinopathy mouse models’](#) has been published in *Diabetologia*.

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