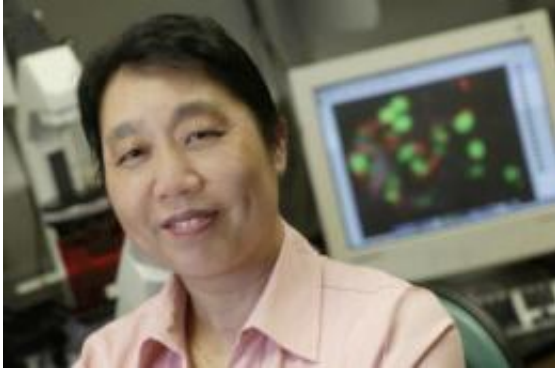


A 'Kit' for increasing insulin production

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Scientists led by Rennian Wang from Western University in London, Canada and the Lawson Health Research Institute have identified the critical role of a receptor called c-Kit in the development and function of insulin-producing beta cells, making it an exciting therapeutic target for managing diabetes. Credit: Western University

Scientists from Western University in London, Canada and the Children's Health Research Institute, an Institute within the Lawson Health Research Institute, have identified the critical role of a receptor called c-Kit in the development and function of insulin-producing beta cells, making it an exciting therapeutic target for the management of diabetes.

The research, led by Rennian Wang, demonstrated that overexpression of c-Kit not only leads to increased [insulin production](#) but also counteracts the early diabetic effects of a high-fat diet. The paper and an accompanying commentary, are published in the August issue of

Diabetologia, and featured in the Research Highlights in *Nature Reviews Endocrinology* (June 5).

Diabetes is one of the most common [metabolic diseases](#) affecting over 25 million Americans and 2 million Canadians. It's associated with a multitude of complications leading to considerable morbidity and a major medical as well as financial burden on society.

One of the major defects in diabetes is the loss of [beta cells](#) in the pancreatic islet. Wang and colleagues, including Zhi Chao Feng, a PhD candidate and first author on the paper, developed a [transgenic mouse model](#) (c-Kit Wv) which overexpressed c-Kit, specifically in beta cells. "When c-Kit is overexpressed, we observed a significant improvement in beta cell function and survival," says Wang, a Professor in the Departments of Physiology and Pharmacology, and Medicine at Western's Schulich School of Medicine & Dentistry. "You can even rescue c-Kit mutant mice from the early onset of diabetes, and protect against high-fat diet-induced beta cell defects. This is a novel finding and is being reported for the first time."

Wang believes ongoing research into c-Kit and its underlying mechanisms, will pave the way to develop strategies to preserve and restore function to beta cells as a cure for both type 1 and type 2 diabetes. This study was funded by the Canadian Institutes of Health Research.

Provided by University of Western Ontario

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