



Media Release

3 October 2006

Researchers find new clue to treating diabetes

Researchers in Auckland have decoded the structure of a molecule that may provide clues for a new type of diabetes drug.

Through a combination of biology and chemistry, researchers at the Maurice Wilkins Centre for Molecular Biodiscovery have mapped the atomic structure of myo-inositol oxygenase (MIOX), a key enzyme involved in the body's metabolism of sugars. Details of the structure, outlined in the prestigious US journal *Proceedings of the National Academy of Sciences*, may allow researchers at the Wilkins Centre to create a new class of drug for the treatment of diabetes.

Diabetes affects about 200,000 people in New Zealand [about 200 million people worldwide], and is estimated to kill four million people worldwide each year. Scientific evidence suggests that diabetes is associated with changes in inositol metabolism. MIOX is the only enzyme known to break down inositol compounds and is a key regulator of inositol levels in the body. High levels of MIOX and the subsequent reduction in inositol are linked to hyperglycaemia, the increase of glucose in the blood and a symptom of diabetes.

By unravelling the structure of MIOX, researchers can use rational drug design and medicinal chemistry to develop drugs that inhibit MIOX activity. Reduction of this activity should normalise inositol levels and lower glucose levels in diabetes.

"This is a very exciting discovery for our team, and a testament to the multidisciplinary approach of the Centre," says Professor Ted Baker, Director of the Wilkins Centre. "Diabetes is a major problem, not just in New Zealand but globally. It is through gathering knowledge of biological mechanisms that we can hope to treat and prevent diseases such as this effectively in the future. We are working with our partner Industrial Research Limited to use this knowledge of MIOX to develop drugs for the future treatment of diabetes."

The Maurice Wilkins Centre for Molecular Biodiscovery is a New Zealand Centre for Research Excellence (CoRE) based at The University of Auckland. The Wilkins Centre brings together over 200 researchers from multidisciplinary teams to create a world-leading infrastructure for drug discovery and development. It has established important research collaborations with institutions across New Zealand, including the Malaghan Institute, Industrial Research Limited and the Auckland Cancer Society Research Centre.

Contact

Emma Timewell, Communications Adviser
Phone: 09 373 7599 ext. 83258 or 021 970089
Email: e.timewell@auckland.ac.nz

Professor Ted Baker
Phone: 09 373 7599 ext. 84415
Email: en.baker@auckland.ac.nz

