

Work starts on new therapy to prevent Type 1 diabetes

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Scientists at King's College London have launched a project to develop a new therapy for Type 1 diabetes. It is hoped the therapy will control the autoimmune responses that underlie the inflammation that leads to diabetes and prevent it from developing.

Type 1 diabetes affects approximately 290,000 people in the UK, predominantly children and young adults, and incidence in Europe and North America is increasing. There is currently no known cure or effective prevention and treatment requires multiple, daily, lifelong insulin injections.

The project at King's College London, as part of King's Health Partners Academic Health Sciences Centre, is the culmination of drug discovery efforts in the Department of Immunobiology and will be supported by a

Translation Award of £2.3 million from the Wellcome Trust.

The team will develop a drug called MultiPepT1De, made from a ‘cocktail’ of peptides, in a strategy known as peptide immunotherapy.

The autoimmune response in [Type 1 diabetes](#) targets specific peptides in the β -cells that make insulin, leading to inflammation, loss of β -cells and complete insulin deficiency. By introducing selected fragments of key proteins from β -cells in a form that switches off inflammation, it is hoped this will ‘re-set’ the immune system.

The King’s group has identified several of the key peptides involved in this process and will develop these as a therapeutic that counters the immune attack on β -cells but leaves the rest of the immune system intact. The project will focus on the physico-chemical, immunological and toxicological properties of the β -cell peptides. The project is expected to complete in 2014, with early clinical trials to follow.

Professor Mark Peakman from King’s College London said:

‘MultiPepT1De has some important advantages over current approaches to the prevention of Type 1 diabetes, especially its ability to avoid global immune suppression which is a problem with several other approaches under consideration.

‘Peptide immunotherapy is being explored in other diseases, such as allergies and multiple sclerosis, using cocktails of peptides and shows considerable promise and potential for long-lasting effects. We have pinpointed the key peptides involved in Type 1 diabetes, and are hopeful that this could lead to an effective preventative treatment for children and adults who may be at risk of developing the condition.

‘The Translation Award from the Wellcome Trust is an exciting opportunity to develop the drug all the way through to testing in

volunteers in 2014.'

Dr Mike Shaw, Director of IP and Licensing at King's commented: 'This new funding enables us to continue progressing efficiently towards positioning the technology for clinical trials. New data emerging from the work together with the suite of intellectual property and patents in which King's has invested for a number of years provides a solid basis from which commercial partners can work with us to see the therapy developed for patient benefit.'

Provided by King's College London

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