A Vaccine Against Type 1 Diabetes

A novel vaccine to protect against type 1 diabetes.

Problem Solved by This Technology
Type 1 Diabetes (once known as “juvenile diabetes”) is usually detected in children and young adults. It occurs when the pancreas stops producing insulin, the body’s mechanism for converting starch and glucose into energy. The condition is serious and requires continuous monitoring and a life-long regimen of proper diet, exercise, and insulin injections. This course of treatment is difficult to comply with, and carries with it major adverse side-effects. Current immunomodulatory clinical trials failed to achieve insulin independence.

Applications
Dr. Czyzyk at the University of Rochester has identified a novel immune response against the protease inhibitor Serpin B13, which both suppresses T-cell mediated autoimmune inflammation and enhances beta cell survival. Using a T1D mouse model, he showed that injection of SerpinB13 proteins was able to reduce the blood glucose to near normal levels over an extended period (Figure). Further efficacy studies have been planned and the safety profile will also be examined. Once fully developed, the SepinB13 vaccine may be offered to young children who are at a high risk of developing T1D for disease prevention as well as to T1D patients for treatment.

Intellectual Property Status
Patent application pending in the United States.

UR Ventures

URV Reference Number
6-2146

Inventor
Jan Czyzyk, M.D.

Publication

For More Information, Contact
Weimin Kaufman, Ph.D., MBA - Licensing Manager
e: weimin.kaufman@rochester.edu
t: 585.276.6608