New treatment for glucose and weight control

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Technology description

Baker IDI researchers, in collaboration with researchers at the University of Kiel, have synthesised a first-in-class therapy for insulin sensitisation in diabetic patients to address the treatment gap. The biological agent, IC7, underwent preclinical optimisation to achieve a daily, injectable treatment regime for those with T2D who are already faced with the option of insulin injections to manage the progressive nature of their disease.

CNTF has anti-obesity central and peripheral effects. It was developed as Axokine by Regeneron Ltd but failed in phase III trials due to antibodies developing and reducing its efficacy. To overcome this problem, IC7, a chimeric protein that combines the beneficial properties of CNTF with those of interleukin-6 (IL6), has been developed, based on the discovery that receptor binding domains of Gp30 cytokines are modular. IC7 utilises the IL-6 receptor to initiate CNTF-like signalling but does not present immunogenic properties. IC7 has been modified by Fc fusion to extend circulating half life. Using insulin-resistant mice, modified IC7 (mIC7) has been shown to significantly reduce fasting blood glucose, food intake, fat mass, gluconeogenesis and hepatic lipid deposition, improve glucose tolerance, and increase fatty acid oxidation. These results strongly suggest that the long-term use of mIC7 could help treat T2D and support patient weight loss efforts.

Institution

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