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IN BRIEF

NEUROENDOCRINE CANCER

Blocking β-catenin signalling—a future therapy for pancreatic neuroendocrine tumours?

A new study in mice suggests that blockade of β-catenin signalling has promise as a new therapeutic strategy against *MEN1*-deficient pancreatic neuroendocrine tumours (NETs). Lack of menin, the protein encoded by *MEN1*, activates β-catenin signalling in mouse and human pancreatic NETs. Genetic or pharmacological suppression of β-catenin signalling inhibited tumour growth, decreased hyperinsulinaemia and hypoglycaemia, and improved survival in mice with *MEN1*-deficient pancreatic NETs.

Original article Jiang, X. *et al.* Targeting β-catenin signaling for therapeutic intervention in *MEN1*-deficient pancreatic neuroendocrine tumours. *Nat. Commun.* **5**, 5809 (2014)

THERAPY

GLP-1–estrogen conjugate superior to GLP-1 alone in decreasing food intake and protecting pancreatic β cells

A GLP-1–estrogen conjugate that enables targeted delivery of estrogen to cells expressing GLP-1 receptors offered more protection against β-cell failure than GLP-1 alone in a study in male New Zealand obese mice, which are prone to developing type 2 diabetes mellitus. GLP-1–estrogen also reduced food intake and weight gain, and improved glucose control and glucose tolerance when compared with GLP-1 alone.

Original article Schwenk, R. W. *et al.* GLP-1–oestrogen attenuates hyperphagia and protects from beta cell failure in diabetes-prone New Zealand obese (NZO) mice. *Diabetologia* doi:10.1007/s00125-014-3478-3

METABOLISM

PPARγ agonists and adipocyte browning—new insights

Novel findings shed light on the mechanisms whereby PPARγ agonists, such as rosiglitazone, induce browning of white adipocytes. In human adipocytes, rosiglitazone triggered a specific 'brown-in-white' (brite) adipocyte gene programme that increased mitochondrial oxidative capacity. Browning induced reprogramming of PPARγ binding, with PPARγ 'superenhancers' being associated with the brite-selective programme. KLF11 was identified as a novel transcription factor that is activated by PPARγ and cooperates with it to induce and maintain the brite-selective programme.

Original article Loft, A. *et al.* Browning of human adipocytes requires KLF11 and reprogramming of PPARγ superenhancers. *Genes Dev.* doi:10.1101/gad.250829.114

DIABETES

Increasing the number of intestinal L cells—an alternative to GLP-1 therapy in type 2 diabetes mellitus?

In a new study, treatment with dibenzazepine increased the number of GLP-1-producing L cells and stimulated GLP-1 secretion in mouse and human organoid-based cell culture systems. Dibenzazepine treatment was also associated with increased insulin secretion and improved glucose tolerance in a mouse model of type 2 diabetes mellitus (T2DM), effects that were mediated through increased GLP-1 signalling. Increasing the number of L cells in the intestine could be an alternative to GLP-1 therapy in patients with T2DM.

Original article Petersen, N. *et al.* Targeting development of incretin-producing cells increases insulin secretion. *J. Clin. Invest.* doi:10.1172/JCI75838