The role of a newly discovered pancreatic islet peptide in the control of insulin secretion

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A peptide was discovered in the pancreatic islets of STZ-diabetic rats by direct tissue imaging of individual islets using MALDI-TOF mass spectrometry (Stewart *et al.*, 2011). The peptide is similar in structure to glicentin-related pancreatic polypeptide (GRPP) and has initially been called GRPP-like peptide (GRPP-LP). GRPP-LP was synthesized and the effect of both GRPP and GRPP-LP on insulin secretion were tested in an isolated rat pancreatic perfusion preparation. Both peptides markedly attenuated the secretion of insulin in response to a 20 mM glucose infusion. When considered with results from another similar study showing enhanced glucose-induced insulin secretion with glicentin 12-69, which encompasses the GRPP sequence (Yanaihara *et al.*, 1985), these novel findings raise the possibility of a pancreatic control mechanism involving peptides from glicentin.

Stewart, K.W., Phillips, A.R., Whiting, L., Jullig, M., Middleditch, M.J., and Cooper, G.J. (2011). A simple and rapid method for identifying and semi-quantifying peptide hormones in isolated pancreatic islets by direct-tissue matrix-assisted laser desorption ionization time-of-flight mass spectrometry. *Rapid Communications in Mass Spectrometry* **25,** 3387-3395.

Yanaihara, C., Matsumoto, T., Hong, Y.M., and Yanaihara, N. (1985). Isolation and chemical characterization of glicentin C-terminal hexapeptide in porcine pancreas. *FEBS Letters* **189,** 50-56.