

## **Abstract of Presentation**

Presentation Title:

**Free Fatty Acid Receptor GPR120: Function and Pharmacology**

Abstract:

Diabetes, a disease in which the body does not produce or use insulin properly, is a serious global health problem. Gut polypeptides secreted in response to food intake, such as glucagon-like peptide-1 (GLP-1), are potent incretin hormones that enhance the glucose-dependent secretion of insulin from pancreatic beta cells.

Free fatty acids (FFAs) provide an important energy source and also act as signaling molecules in various cellular processes, including the secretion of gut incretin peptides. Here we show that a G-protein-coupled receptor, GPR120, which is abundantly expressed in intestine, functions as a receptor for unsaturated long-chain FFAs. Furthermore, we show that the stimulation of GPR120 by FFAs promotes the secretion of GLP-1 in vitro and in vivo, and increases circulating insulin.

Because GLP-1 is the most potent insulinotropic incretin, our results indicate that GPR120-mediated GLP-1 secretion induced by dietary FFAs is important in the treatment of diabetes.