## S08-4 Free fatty acid receptor family: novel targets for the treatment of diabetes

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Recently, G-protein-coupled receptor (GPCR) deorphanizing strategy successfully identified multiple receptors for FFAs, which function on the cell surface and play significant roles in nutrition regulation. GPR41 and 43 are activated by short-chain FFAs, whereas GPR40 and GPR120 can be activated by medium and long-chain FFAs. GPR40, which is preferentially expressed in pancreatic beta-cells, mediates the insulin secretion. On the other hand, GPR120, which is abundantly expressed in intestine, functions as a receptor for unsaturated long chain FFAs and promotes the secretion of glucagon-like peptide-1. As GPR120 and GPR40 are activated by similar properties of FFAs, and GPR40 directly and GPR120 indirectly promotes glucose-stimulated insulin secretion, both receptors will be important for assessing the mechanism of FFA-mediated nutrition regulation and promising new target for the treatment of diabetes. In this symposium, we will report the recent advances in our understanding of recently deorphanized free fatty acid receptors and their physiological functions.