

GPR40 (FL-300): sc-32905

BACKGROUND

G protein-coupled receptors provide attractive targets for drug therapy due to the sheer size and diversity of ligands within this receptor family. G protein-coupled receptor 40 (GPR40) functions as a cell-surface receptor for long-chain free fatty acids (FFAs). FFAs provide an important energy source, but also function as signaling molecules in various pathways, notably the process of Insulin secretion. In pancreatic tissue, the interaction of long chain FFAs with GPR40 amplifies glucose-stimulated Insulin secretion from β cells, suggesting a possible role for GPR40 in the treatment of diabetes associated with Insulin-deficiency. Specifically, the Arg211His polymorphism in the GPR40 gene may contribute to the variation of Insulin secretory capacity in Japanese men. Also, GPR40 may be involved in the control of breast cancer cell growth by fatty acids and, therefore, provide a link between fat and cancer.

CHROMOSOMAL LOCATION

Genetic locus: FFAR1 (human) mapping to 19q13.12; Ffar1 (mouse) mapping to 7 B1.

SOURCE

GPR40 (FL-300) is a rabbit polyclonal antibody raised against amino acids 1-300 representing full length GPR40 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

GPR40 (FL-300) is recommended for detection of GPR40 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

GPR40 (FL-300) is also recommended for detection of GPR40 in additional species, including canine and porcine.

Suitable for use as control antibody for GPR40 siRNA (h): sc-105408, GPR40 siRNA (m): sc-145734, GPR40 shRNA Plasmid (h): sc-105408-SH, GPR40 shRNA Plasmid (m): sc-145734-SH, GPR40 shRNA (h) Lentiviral Particles: sc-105408-V and GPR40 shRNA (m) Lentiviral Particles: sc-145734-V.

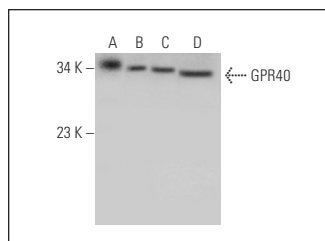
Molecular Weight of GPR40: 31 kDa.

Positive Controls: human liver extract: sc-363766, Jurkat whole cell lysate: sc-2204 or CCRF-CEM cell lysate: sc-2225.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



GPR40 (FL-300): sc-32905. Western blot analysis of GPR40 expression in human liver tissue extract (A) and CCRF-CEM (B), Raji (C) and Jurkat (D) whole cell lysates.

SELECT PRODUCT CITATIONS

- Soto-Guzman, A., et al. 2008. Oleic acid induces ERK1/2 activation and AP-1 DNA binding activity through a mechanism involving Src kinase and EGFR transactivation in breast cancer cells. *Mol. Cell. Endocrinol.* 294: 81-91.
- Del Guerra, S., et al. 2010. G protein-coupled receptor 40 (GPR40) expression and its regulation in human pancreatic islets: the role of type 2 diabetes and fatty acids. *Nutr. Metab. Cardiovasc. Dis.* 20: 22-25.
- Wu, P., et al. 2010. The relationship between GPR40 and lipotoxicity of the pancreatic β -cells as well as the effect of pioglitazone. *Biochem. Biophys. Res. Commun.* 403: 36-39.
- Oliveira, V., et al. 2015. Diets containing α -Linolenic (ω 3) or Oleic (ω 9) fatty acids rescues obese mice from insulin resistance. *Endocrinology* 156: 4033-4046.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.