

GPR43 (I-20): sc-28424

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 (GPR) GPR41 and GPR43 are related members of a homologous family of orphan G protein-coupled receptors that are tandemly encoded at a single chromosomal locus in both humans and mice. GPR43 functions as a ligand for short chain fatty acids (SCFAs), notably acetate and propionate. Bacteria in the gut produce high concentrations of SCFAs, which are subsequently released in the bloodstream, where they exert cellular effects on blood leukocytes, including calcium release, ERK1/2 activation, and inhibition of cAMP accumulation. These effects indicate a role for GPR43 in the recruitment of leukocytes, particularly polymorphonuclear cells, to sites of bacterial infection.

REFERENCES

1. Sawzdargo, M., et al. 1997. A cluster of four novel human G protein-coupled receptor genes occurring in close proximity to CD22 gene on chromosome 19q13.1. *Biochem. Biophys. Res. Commun.* 239: 543-547.
2. Senga, T., et al. 2003. LSSIG is a novel murine leukocyte-specific GPCR that is induced by the activation of Stat3. *Blood* 101: 1185-1187.
3. Briscoe, C.P., et al. 2003. The orphan G protein-coupled receptor GPR40 is activated by medium and long chain fatty acids. *J. Biol. Chem.* 278: 11303-11311.
4. Brown, A.J., et al. 2003. The Orphan G protein-coupled receptors GPR41 and GPR43 are activated by propionate and other short chain carboxylic acids. *J. Biol. Chem.* 278: 11312-11319.
5. Le Poul, E., et al. 2003. Functional characterization of human receptors for short chain fatty acids and their role in polymorphonuclear cell activation. *J. Biol. Chem.* 278: 25481-25489.
6. Lee, D.K., et al. 2003. Continued discovery of ligands for G protein-coupled receptors. *Life Sci.* 74: 293-297.
7. Nilsson, N.E., et al. 2003. Identification of a free fatty acid receptor, FFA2R, expressed on leukocytes and activated by short-chain fatty acids. *Biochem. Biophys. Res. Commun.* 303: 1047-1052.

CHROMOSOMAL LOCATION

Genetic locus: Ffar2 (mouse) mapping to 7 B1.

SOURCE

GPR43 (I-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of GPR43 of mouse origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-28424 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GPR43 (I-20) is recommended for detection of GPR43 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Suitable for use as control antibody for GPR43 siRNA (m): sc-77340, GPR43 shRNA Plasmid (m): sc-77340-SH and GPR43 shRNA (m) Lentiviral Particles: sc-77340-V.

Molecular Weight of GPR43: 43 kDa.

Positive Controls: mouse spleen extract: sc-2391.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Liu, F., et al. 2011. Expression of Hsf1, Hsf2, and Phlda1 in cells undergoing cryptorchid-induced apoptosis in rat testes. *Mol. Reprod. Dev.* 78: 283-291.
2. Li, Y., et al. 2013. Gustducin couples fatty acid receptors to GLP-1 release in colon. *Am. J. Physiol. Endocrinol. Metab.* 304: E651-E660.

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.

PROTOCOLS

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



Try **GPR43 (3B3): sc-293202**, our highly recommended monoclonal alternative to GPR43 (I-20).