SANTA CRUZ BIOTECHNOLOGY, INC.

GPR41 (L-13): sc-131163

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

G protein-coupled receptors (GPRs), also known as seven transmembrane receptors, heptahelical receptors or 7TM receptors, comprise a superfamily of proteins that play a role in many different stimulus-response pathways. GPRs translate extracellular signals into intracellular signals (a process called G-protein activation) and they respond to a variety of signaling molecules, such as hormones and neurotransmitters. GPR41 (G-protein coupled receptor 41), also known as FFAR3 (free fatty acid receptor 3), is a 346 amino acid multi-pass membrane protein that belongs to the G protein-coupled receptor family. Expressed at high levels in adipose tissue and at lower levels throughout the body, GPR41 functions as a receptor for short chain fatty acids via elevation of intracellular calcium levels and inhibition of adenylyl cyclase.

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.
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3. 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.
4. 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.
5. Xiong, Y., et al. 2004. Short-chain fatty acids stimulate leptin production in adipocytes through the G protein-coupled receptor GPR41. Proc. Natl. Acad. Sci. USA 101: 1045-1050.
6. Brown, A.J., et al. 2005. A family of fatty acid binding receptors. DNA Cell Biol. 24: 54-61.
7. Covington, D.K., et al. 2006. The G-protein-coupled receptor 40 family (GPR40-GPR43) and its role in nutrient sensing. Biochem. Soc. Trans. 34: 770-773.
8. Yonezawa, T., et al. 2007. Short-chain fatty acids induce acute phosphorylation of the p38 mitogen-activated protein kinase/heat shock protein 27 pathway via GPR43 in the MCF7 human breast cancer cell line. Cell. Signal. 19: 185-193.

CHROMOSOMAL LOCATION

Genetic locus: FFAR3 (human) mapping to 19q13.12.

SOURCE

GPR41 (L-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of GPR41 of human origin.

STORAGE

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

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-131163 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

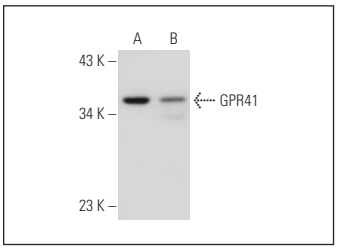
GPR41 (L-13) is recommended for detection of GPR41 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with other GPR family members.

Suitable for use as control antibody for GPR41 siRNA (h): sc-97148, GPR41 shRNA Plasmid (h): sc-97148-SH and GPR41 shRNA (h) Lentiviral Particles: sc-97148-V.

Molecular Weight of GPR41: 39 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, Jurkat whole cell lysate: sc-2204 or A549 cell lysate: sc-2413.

DATA



GPR41 (L-13): sc-131163. Western blot analysis of GPR41 expression in Jurkat (**A**) and human PBL (**B**) whole cell lysates.

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.