

GPR3 (N-13): sc-104295

BACKGROUND

G protein-coupled receptor 3 (GPR3), also designated ACCA orphan receptor, is a 330 amino acid member of the G protein-coupled receptor 1 family. The function of GPR3 is mediated by G proteins which activate adenylate cyclase. GPR3 is a multi-pass membrane protein that is located on the cellular membrane of cells and is detected at low levels in the eye, kidney, lung, ovary and testis. GPR3 is most highly expressed in the central nervous system, where it stimulates the production of cAMP, leading to neurite outgrowth and Myelin inhibition. In oocytes, this control over cAMP production can halt meiosis and prevent Progesterone-induced meiotic maturation. Mice deficient for GPR3 are able to reproduce but have no control over the oocyte maturation process, which results in nondeveloping early embryos and fragmented oocytes as the mice age.

REFERENCES

1. Marchese, A., et al. 1995. Cloning of human genes encoding novel G protein-coupled receptors. *Genomics* 23: 609-618.
2. Iismaa, T.P., et al. 1995. Isolation and chromosomal localization of a novel human G-protein-coupled receptor (GPR3) expressed predominantly in the central nervous system. *Genomics* 24: 391-394.
3. Eggerickx, D., et al. 1995. Molecular cloning of an orphan G protein-coupled receptor that constitutively activates adenylate cyclase. *Biochem. J.* 309: 837-843.
4. Song, Z.H., et al. 1996. Molecular cloning and chromosomal localization of human genes encoding three closely related G protein-coupled receptors. *Genomics* 28: 347-349.
5. Hinckley, M., et al. 2005. The G protein-coupled receptors GPR3 and GPR12 are involved in cAMP signaling and maintenance of meiotic arrest in rodent oocytes. *Dev. Biol.* 287: 249-261.
6. Feuerstein, P., et al. 2006. Oocyte-cumulus dialog. *Gynecol. Obstet. Fertil.* 34: 793-800.
7. Tanaka, S., et al. 2007. Neural expression of G protein-coupled receptors GPR3, GPR6, and GPR12 upregulates cyclic AMP levels and promotes neurite outgrowth. *J. Biol. Chem.* 282: 10506-10515.
8. Richard, F.J. 2007. Regulation of meiotic maturation. *J. Anim. Sci.* 85: E4-E6.

CHROMOSOMAL LOCATION

Genetic locus: GPR3 (human) mapping to 1p36.11.

SOURCE

GPR3 (N-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an N-terminal extracellular domain of GPR3 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-104295 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GPR3 (N-13) is recommended for detection of GPR3 of human 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); non cross-reactive with other GPR family members.

Suitable for use as control antibody for GPR3 siRNA (h): sc-72173, GPR3 shRNA Plasmid (h): sc-72173-SH and GPR3 shRNA (h) Lentiviral Particles: sc-72173-V.

Molecular Weight of GPR3: 35 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

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.

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.