

GPR3 (18-L): sc-100300

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 (18-L) is a mouse monoclonal antibody raised against recombinant GPR3 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

GPR3 (18-L) is recommended for detection of GPR3 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), immunohistochemistry (including paraffin-embedded sections) (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 GPR3 siRNA (h): sc-72173, GPR3 shRNA Plasmid (h): sc-72173-SH and GPR3 shRNA (h) Lentiviral Particles: sc-72173-V.

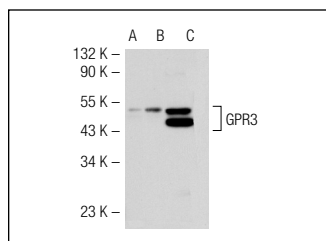
Molecular Weight of GPR3: 35 kDa.

Positive Controls: GPR3 (h): 293T lysate: sc-115143, Jurkat whole cell lysate: sc-2204 or human transitional cell carcinoma.

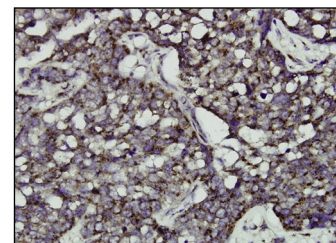
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



GPR3 (18-L): sc-100300. Western blot analysis of GPR3 expression in non-transfected 293T: sc-117752 (A), human GPR3 transfected 293T: sc-115143 (B) and Jurkat (C) whole cell lysates.



GPR3 (18-L): sc-100300. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human transitional cell carcinoma tissue showing membrane localization.

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 for detailed protocols and support products.