

# GPR78 (C-18): sc-69175



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. G protein-coupled receptors translate extracellular signals into intracellular signals (G protein activation) and they respond to a variety of signaling molecules, such as hormones and neurotransmitters. GPR78 (G protein-coupled receptor 78) is a 363 amino acid multi-pass membrane protein that belongs to the G protein-coupled receptor 1 family. Expressed in placenta and pituitary tissue, GPR78 functions as an orphan receptor that is thought to play a role in signaling events throughout the cell. GPR78 expression is upregulated in response to UV radiation or endoplasmic reticulum (ER) stress, suggesting an additional role for GPR78 in the unfolded protein response pathway.

## REFERENCES

1. Larhammar, D., Blomqvist, A.G. and Wahlestedt, C. 1993. The receptor revolution—multiplicity of G protein-coupled receptors. *Drug Des Discov.* 9: 179-188.
2. Ji, T.H., Grossmann, M. and Ji, I. 1998. G protein-coupled receptors. I. Diversity of receptor-ligand interactions. *J. Biol. Chem.* 273: 17299-17302.
3. Schöneberg, T., Schultz, G. and Gudermann, T. 1999. Structural basis of G protein-coupled receptor function. *Mol. Cell. Endocrinol.* 151: 181-193.
4. van Laar, T., Schouten, T., Hoogervorst, E., van Eck, M., van der Eb, A.J. and Terleth, C. 2000. The novel MMS-inducible gene MIF1/KIAA0025 is a target of the unfolded protein response pathway. *FEBS Lett.* 469: 123-131.
5. Vanti, W.B., Nguyen, T., Cheng, R., Lynch, K.R., George, S.R. and O'Dowd, B.F. 2003. Novel human G protein-coupled receptors. *Biochem. Biophys. Res. Commun.* 305: 67-71.
6. Vassilatis, D.K., Hohmann, J.G., Zeng, H., Li, F., Ranchalis, J.E., Mortrud, M.T., Brown, A., Rodriguez, S.S., Weller, J.R., Wright, A.C., Bergmann, J.E. and Gaitanaris, G.A. 2003. The G protein-coupled receptor repertoire of human and mouse. *Proc. Natl. Acad. Sci. U.S.A.* 100: 4903-4908.
7. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 606921. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
8. Bjarnadóttir, T.K., Fredriksson, R., Höglund, P.J., Gloriam, D.E., Lagerström, M.C. and Schiöth, H.B. 2004. The human and mouse repertoire of the adhesion family of G protein-coupled receptors. *Genomics.* 84: 23-33.
9. Underwood, S.L., Christoforou, A., Thomson, P.A., Wray, N.R., Tenesa, A., Whittaker, J., Adams, R.A., Le Hellard, S., Morris, S.W., Blackwood, D.H., Muir, W.J., Porteous, D.J. and Evans, K.L. 2006. Association analysis of the chromosome 4p-located G protein-coupled receptor 78 (GPR78) gene in bipolar affective disorder and schizophrenia. *Mol. Psychiatry.* 11: 384-394.

## CHROMOSOMAL LOCATION

Genetic locus: GPR78 (human) mapping to 4p16.1.

## RESEARCH USE

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

## SOURCE

GPR78 (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of GPR78 of human 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-69175 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

GPR78 (C-18) is recommended for detection of GPR78 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:5000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GPR78 siRNA (h): sc-75187, GPR78 shRNA Plasmid (h): sc-75187-SH and GPR78 shRNA (h) Lentiviral Particles: sc-75187-V.

Molecular Weight of GPR78: 39 kDa.

## 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.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.