



## GPR50 (G-15): sc-50590

### BACKGROUND

G protein-coupled receptors (GPCRs) play a central role in mediating the intracellular effects of numerous neurotransmitters and hormones, including melatonin. GPR50, also designated Melatonin-related receptor, GPCR50 and H9, does not bind melatonin. It is a multi-pass membrane protein primarily detected in hypothalamus and pituitary. GPR50 is a 613 amino acid protein that contains the 7 hydrophobic segments that are characteristic of GPCRs, as well as the distinguishing sequence motifs of the melatonin receptor GPCR family. The GPR50 protein is 45% identical to the melatonin receptors 1A and 1B and has an unusually long proline-rich C-terminal tail. Research suggests that a deletion variant within the GPR50 gene is a sex-specific risk factor for susceptibility to BPAD (bipolar affective disorder) and that other variants in the gene may be sex-specific risk factors in the development of schizophrenia.

### REFERENCES

1. Reppert, S.M., et al. 1996. Cloning of a Melatonin-related receptor from human pituitary. *FEBS Lett.* 386: 219-224.
2. Gubit, A.K., et al. 1999. Assignment of the Melatonin-related receptor to human chromosome X (GPR50) and mouse chromosome X (Gpr50). *Genomics* 55: 248-251.
3. Conway, S., et al. 2000. Chimeric melatonin MT1 and melatonin-related receptors. Identification of domains and residues participating in ligand binding and receptor activation of the melatonin MT1 receptor. *J. Biol. Chem.* 275: 20602-20609.
4. Drew, J.E., et al. 2001. Localization of the Melatonin-related receptor in the rodent brain and peripheral tissues. *J. Neuroendocrinol.* 13: 453-458.
5. Barrett, P., et al. 2003. Digging deep—structure-function relationships in the melatonin receptor family. *J. Pineal Res.* 35: 221-230.
6. Thomson, P.A., et al. 2005. Sex-specific association between bipolar affective disorder in women and GPR50, an X-linked orphan G protein-coupled receptor. *Mol. Psychiatry* 10: 470-478.
7. Bhattacharyya, S., et al. 2006. Sequence variants in the Melatonin-related receptor gene (GPR50) associate with circulating triglyceride and HDL levels. *J. Lipid Res.* 47: 761-766.
8. Levoye, A., et al. 2006. The orphan GPR50 receptor specifically inhibits MT1 melatonin receptor function through heterodimerization. *EMBO J.* 25: 3012-3023.

### CHROMOSOMAL LOCATION

Genetic locus: GPR50 (human) mapping to Xq28; Gpr50 (mouse) mapping to X A7.2.

### 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.

### SOURCE

GPR50 (G-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of GPR50 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-50590 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

GPR50 (G-15) is recommended for detection of GPR50 of mouse, rat and 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).

GPR50 (G-15) is also recommended for detection of GPR50 in additional species, including canine and porcine.

Suitable for use as control antibody for GPR50 siRNA (h): sc-61014, GPR50 siRNA (m): sc-61015, GPR50 shRNA Plasmid (h): sc-61014-SH, GPR50 shRNA Plasmid (m): sc-61015-SH, GPR50 shRNA (h) Lentiviral Particles: sc-61014-V and GPR50 shRNA (m) Lentiviral Particles: sc-61015-V.

Molecular Weight of GPR50: 67 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.

### SELECT PRODUCT CITATIONS

1. Grünewald, E., et al. 2009. GPR50 interacts with neuronal NOGO-A and affects neurite outgrowth. *Mol. Cell. Neurosci.* 42: 363-371.

### PROTOCOLS

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