SANTA CRUZ BIOTECHNOLOGY, INC.

# GPR45 (N-15): sc-68982

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*The Power to Question*

## BACKGROUND

G protein-coupled receptors (GPRs) are a protein family of transmembrane receptors that transmit an extracellular signal (ligand binding) into an intracellular signal (G protein activation). GPR signaling is an evolutionarily ancient mechanism used by all eukaryotes to sense environmental stimuli and mediate cell-cell communication. All of the receptors have seven membrane-spanning domains and the extracellular parts of the receptor can be glycosylated. These extracellular loops also contain two highly conserved cysteine residues which create disulfide bonds to stabilize the receptor structure. GPR45, also known as PSP24-1 or PSP24-$\alpha$, is a 372 amino acid orphan receptor that is suspected to play a role in brain function. Expressed in brain, GPR45 has been detected in the basal forebrain, frontal cortex and caudate, but not in thalamus, hippocampus or putamen.

## REFERENCES


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2. Kawasawa, Y., et al. 2000. Brain-specific expression of novel G-protein-coupled receptors, with homologies to *Xenopus* PSP24 and human GPR45. Biochem. Biophys. Res. Commun. 276: 952-956.
3. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 604838. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Alderton, F., et al. 2001. Assessment of agonism at G-protein coupled receptors by phosphatidic acid and lysophosphatidic acid in human embryonic kidney 293 cells. Br. J. Pharmacol. 134: 6-9.
5. Lee, D.K., et al. 2001. Discovery and mapping of ten novel G protein-coupled receptor genes. Gene 275: 83-91.
6. Belous, A.E., et al. 2006. Mitochondrial calcium transport is regulated by P2Y1- and P2Y2-like mitochondrial receptors. J. Cell. Biochem. 99: 1165-1174.
7. Parravicini, C., et al. 2008. GPR17: molecular modeling and dynamics studies of the 3-D structure and purinergic ligand binding features in comparison with P2Y receptors. BMC Bioinformatics 9: 263.
8. De Meyts, P., et al. 2009. Structural basis of allosteric ligand-receptor interactions in the Insulin/relaxin peptide family: implications for other receptor tyrosine kinases and G-protein-coupled receptors. Ann. N.Y. Acad. Sci. 1160: 45-53.


## CHROMOSOMAL LOCATION

Genetic locus: GPR45 (human) mapping to 2q12.1.

## SOURCE

GPR45 (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an N-terminal extracellular domain of GPR45 of human origin.

## RESEARCH USE

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

## 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-68982 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

GPR45 (N-15) is recommended for detection of GPR45 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).

Suitable for use as control antibody for GPR45 siRNA (h): sc-75181, GPR45 shRNA Plasmid (h): sc-75181-SH and GPR45 shRNA (h) Lentiviral Particles: sc-75181-V.

Molecular Weight of GPR45: 42 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 or our catalog for detailed protocols and support products.