

D5DR (H-107): sc-25650

BACKGROUND

D5DR (Dopamine receptor D5, DR1B, DRD1L2) is a G protein-coupled receptor of the D1-like family that stimulates adenylyl cyclase and has a 10-fold higher affinity for Dopamine than the D1 subtype. D5DR is present in neurons in the limbic regions of the brain. D5DR mRNA is most abundant in discrete cortical areas (layers II, IV and VI), the dentate gyrus and hippocampal subfields with low levels in the striatum. There are five major types of Dopamine receptors. All are G protein-coupled metabotropic receptors and can be excitatory or inhibitory to the post-synaptic neuron. D1 (D1A, D1C, D1D) and D5 (D1B) receptors belong to the D1-like receptor family. The D2, D3 and D4 receptors belong to the D2-like receptor family. Activation of the D1-like family receptors couples to increases in cAMP and is typically excitatory, while D2-like activation reduces cAMP and is typically inhibitory. Significant age-related decline in Dopamine receptor mRNAs occurs in the hippocampus and entorhinal cortex.

REFERENCES

- Hausdorff, W.P., et al. 1990. Two kinases mediate agonist-dependent phosphorylation and desensitization of the β_2 -adrenergic receptor. *Symp. Soc. Exp. Biol.* 44: 225-240.
- Cotecchia, S., et al. 1990. Multiple second messenger pathways of α -adrenergic receptor subtypes expressed in eukaryotic cells. *J. Biol. Chem.* 265: 63-69.
- Hayes, G., et al. 1992. Structural subtypes of the Dopamine D2 receptor are functionally distinct: expression of the cloned D2A and D2B subtypes in a heterologous cell line. *Mol. Endocrinol.* 6: 920-926.
- Senogles, S.E. 1994. The D2 Dopamine receptor isoforms signal through distinct $G_{i\alpha}$ proteins to inhibit adenylyl cyclase. A study with site-directed mutant $G_{i\alpha}$ proteins. *J. Biol. Chem.* 269: 23120-23127.
- Barak, L.S., et al. 1995. The conserved seven-transmembrane sequence NP(X)2,3Y of the G protein-coupled receptor superfamily regulates multiple properties of the β_2 -adrenergic receptor. *Biochem.* 34: 15407-15414.
- Ng, G.Y., et al. 1995. Agonist-induced desensitization of Dopamine D1 receptor-stimulated adenylyl cyclase activity is temporally and biochemically separated from D1 receptor internalization. *Proc. Natl. Acad. Sci. USA* 92: 10157-10161.
- Ogawa, N. 1995. Molecular and chemical neuropharmacology of Dopamine receptor subtypes. *Acta Med. Okayama* 49: 1-11.

CHROMOSOMAL LOCATION

Genetic locus: DRD5 (human) mapping to 4p16.1; Drd5 (mouse) mapping to 5 B3.

SOURCE

D5DR (H-107) is a rabbit polyclonal antibody raised against amino acids 371-477 of D5DR of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

D5DR (H-107) is recommended for detection of D5DR of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], 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 D5DR siRNA (h): sc-41934, D5DR siRNA (m): sc-41935, D5DR shRNA Plasmid (h): sc-41934-SH, D5DR shRNA Plasmid (m): sc-41935-SH, D5DR shRNA (h) Lentiviral Particles: sc-41934-V and D5DR shRNA (m) Lentiviral Particles: sc-41935-V.

Molecular Weight of D5DR: 53 kDa.

Positive Controls: mouse brain extract: sc-2253.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

- Gildea, J.J., et al. 2008. Differential D1 and D5 receptor regulation and degradation of the angiotensin type 1 receptor. *Hypertension* 51: 360-366.
- Voulalas, P.J., et al. 2011. Differential subcellular distribution of rat brain dopamine receptors and subtype-specific redistribution induced by cocaine. *Mol. Cell. Neurosci.* E-Published.

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 or our catalog for detailed protocols and support products.



Try **D5DR (E-12): sc-376088** or **D5DR (SG4-D1b): sc-33661**, our highly recommended monoclonal alternatives to D5DR (H-107).