

## D5DR (R-18): sc-1441

### 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

1. Hausdorff, W.P., et al. 1990. Two kinases mediate agonist-dependent phosphorylation and desensitization of the  $\beta_2$ -adrenergic receptor. *Symp. Soc. Exp. Biol.* 44: 225-240.
2. Cotecchia, S., et al. 1990. Multiple second messenger pathways of  $\alpha$ -adrenergic receptor subtypes expressed in eukaryotic cells. *J. Biol. Chem.* 265: 63-69.
3. 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.
4. 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.
5. 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  $\beta_2$ -adrenergic receptor. *Biochemistry* 34: 15407-15414.
6. 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.
7. Ogawa, N. 1995. Molecular and chemical neuropharmacology of Dopamine receptor subtypes. *Acta Med. Okayama* 49: 1-11.

### CHROMOSOMAL LOCATION

Genetic locus: Drd5 (mouse) mapping to 5 B3.

### SOURCE

D5DR (R-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of D5DR of rat origin.

### STORAGE

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

### PRODUCT

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

Blocking peptide available for competition studies, sc-1441 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

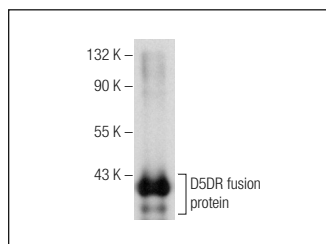
D5DR (R-18) is recommended for detection of D5DR of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 D5DR siRNA (m): sc-41935, D5DR shRNA Plasmid (m): sc-41935-SH and D5DR shRNA (m) Lentiviral Particles: sc-41935-V.

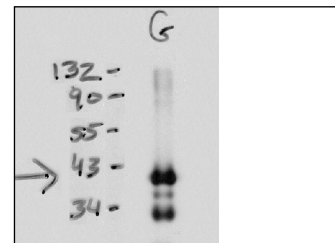
Molecular Weight of D5DR: 53 kDa.

Positive Controls: mouse brain extract: sc-2253.

### DATA



D5DR (R-18): sc-1441. Western blot analysis of human recombinant D5DR fusion protein.



D5DR (R-18): sc-1441. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse brain tissue showing membrane and cytoplasmic localization.

### SELECT PRODUCT CITATIONS

1. Ricci, A., et al. 2001. Dopamine receptors in human platelets. *Naunyn Schmiedeberg's Arch. Pharmacol.* 363: 376-382.
2. Ricci, A., et al. 2006. Dopamine receptor subtypes in the human pulmonary arterial tree. *Auton. Autacoid Pharmacol.* 26: 361-369.

### RESEARCH USE

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

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Try **D5DR (SG4-D1b): sc-33661**, our highly recommended monoclonal alternative to D5DR (R-18).