

# D4DR (H-50): sc-25649

## BACKGROUND

Members of the G protein-coupled receptor family are distinguished by their slow transmitting response to ligand binding. These seven-transmembrane proteins include the adrenergic, serotonin and dopamine receptors. The effect of the signaling molecule can be excitatory or inhibitory, depending on the type of receptor to which it binds.  $\beta$ -adrenergic receptor binds to adrenaline and activates adenylyl cyclase, while  $\alpha_2$ -adrenergic receptor binds to adrenaline and inhibits adenylyl cyclase. The dopamine receptors are divided into two classes, D1 and D2, which differ in their functional characteristics in that D1 receptors stimulate adenylyl cyclase, while D2 receptors inhibit adenylyl cyclase activity. Five different subtypes of dopamine receptor have been described to date. D1DR and D5DR belong to the D1 subclass, while D2DR, D3DR and D4DR belong to the D2 subclass of dopamine receptors.

## 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: DRD4 (human) mapping to 11p15.5; Drd4 (mouse) mapping to 7 F5.

## SOURCE

D4DR (H-50) is a rabbit polyclonal antibody raised against amino acids 141-190 mapping within an internal region of D4DR of human origin.

## PRODUCT

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

## APPLICATIONS

D4DR (H-50) is recommended for detection of D4DR of mouse, rat and human 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

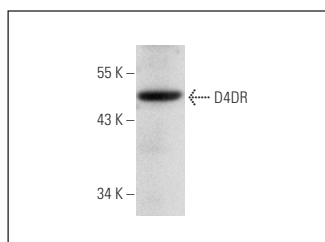
D4DR (H-50) is also recommended for detection of D4DR in additional species, including equine, canine and porcine.

Suitable for use as control antibody for D4DR siRNA (h): sc-41932, D4DR siRNA (m): sc-41933, D4DR shRNA Plasmid (h): sc-41932-SH, D4DR shRNA Plasmid (m): sc-41933-SH, D4DR shRNA (h) Lentiviral Particles: sc-41932-V and D4DR shRNA (m) Lentiviral Particles: sc-41933-V.

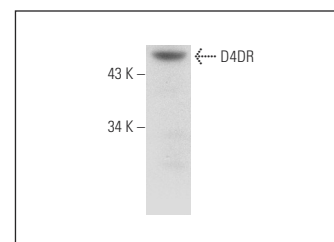
Molecular Weight of D4DR: 48 kDa.

Positive Controls: mouse brain extract: sc-2253 or mouse heart extract: sc-2254.

## DATA



D4DR (H-50): sc-25649. Western blot analysis of D4DR expression in mouse brain tissue extract.



D4DR (H-50): sc-25649. Western blot analysis of D4DR expression in mouse heart tissue extract.

## SELECT PRODUCT CITATIONS

1. Ma, H., et al. 2013. Loss of cone cyclic nucleotide-gated channel leads to alterations in light response modulating system and cellular stress response pathways: a gene expression profiling study. *Hum. Mol. Genet.* 22: 3906-3919.

## 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.

**MONOS**  
Satisfaction  
Guaranteed

Try **D4DR (2B9): sc-136169**, our highly recommended monoclonal alternative to D4DR (H-50).