

D4DR (R-20): sc-1439

BACKGROUND

The 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. β -adrenergic receptor binds to adrenaline activates adenylyl cyclase, while α 2-adrenergic receptor binds to adrenaline 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 β 2-adrenergic receptor. *Symp. Soc. Exp. Biol.* 44: 225-240.
2. Cotecchia, S., et al. 1990. Multiple second messenger pathways of α -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 α proteins to inhibit adenylyl cyclase. A study with site-directed mutant G_i α 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 β 2-adrenergic receptor. *Biochemistry* 34: 15407-15414.

CHROMOSOMAL LOCATION

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

SOURCE

D4DR (R-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of D4DR of rat origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-1439 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

D4DR (R-20) is recommended for detection of D4DR of mouse, rat and, to a lesser extent, 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).

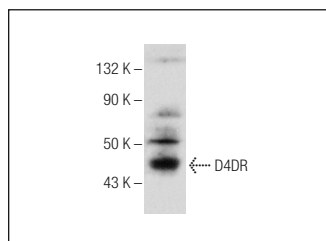
D4DR (R-20) is also recommended for detection of D4DR in additional species, including porcine.

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.

DATA



D4DR (R-20): sc-1439. Western blot analysis of D4DR expression in mouse brain tissue extract.

SELECT PRODUCT CITATIONS

1. Gómez Mde, J., et al. 2002. Functional and autoradiographic characterization of Dopamine D2-like receptors in the guinea pig heart. *Can. J. Physiol. Pharmacol.* 80: 578-587.
2. Chua, E., et al. 2004. 7-OH-DPAT-induced inhibition of norepinephrine release in PC-12 cells. *Pharmacology* 70: 130-139.
3. Li, Q., et al. 2007. The usefulness of the spontaneously hypertensive rat to model attention-deficit/hyperactivity disorder (ADHD) may be explained by the differential expression of Dopamine-related genes in the brain. *Neurochem. Int.* 50: 848-857.

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 (R-20).