

D1DR (G-18): sc-31478

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 bound to adrenaline activates adenylyl cyclase, while α 2-adrenergic receptor bound 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.

REFERENCES

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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. *Biochem.* 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: DRD1 (human) mapping to 5q35.2; Drd1a (mouse) mapping to 13 B1.

SOURCE

D1DR (G-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of D1DR of human 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 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-31479 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

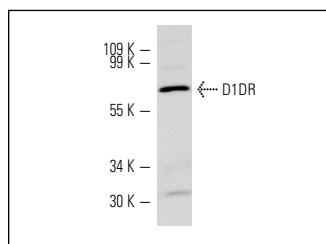
D1DR (G-18) is recommended for detection of D1DR of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 D1DR siRNA (h): sc-35159, D1DR siRNA (m): sc-35160, D1DR shRNA Plasmid (h): sc-35159-SH, D1DR shRNA Plasmid (m): sc-35160-SH, D1DR shRNA (h) Lentiviral Particles: sc-35159-V and D1DR shRNA (m) Lentiviral Particles: sc-35160-V.

Molecular Weight of D1DR: 74 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214, mouse brain extract: sc-2253 or HeLa whole cell lysate: sc-2200.

DATA



D1DR (G-18): sc-31478. Western blot analysis of D1DR expression in mouse brain tissue extract.

SELECT PRODUCT CITATIONS

1. Drescher, M.J., et al. 2010. An adenylyl cyclase signaling pathway predicts direct dopaminergic input to vestibular hair cells. *Neuroscience* 171: 1054-1074.
2. Zhang, L., et al. 2012. Alteration of striatal dopaminergic neurotransmission in a mouse model of DYT11 myoclonus-dystonia. *PLoS ONE* 7: e33669.

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.