SANTA CRUZ BIOTECHNOLOGY, INC.

D1DR (SG2-D1a): sc-33660

BACKGROUND

The members of the G protein-coupled receptor family are distinguished by their slow transmitting response to ligand binding. These 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.

CHROMOSOMAL LOCATION

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

SOURCE

D1DR (SG2-D1a) is a mouse monoclonal antibody raised against the last 123 C-terminal amino acids of D1DR of rat origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

D1DR (SG2-D1a) is available conjugated to agarose (sc-33660 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-33660 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-33660 PE), fluorescein (sc-33660 FITC), Alexa Fluor® 488 (sc-33660 AF488), Alexa Fluor® 546 (sc-33660 AF546), Alexa Fluor® 594 (sc-33660 AF594) or Alexa Fluor® 647 (sc-33660 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-33660 AF680) or Alexa Fluor® 790 (sc-33660 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

D1DR (SG2-D1a) 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 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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: mouse brain extract: sc-2253, KNRK whole cell lysate: sc-2214 or rat brain extract: sc-2392.

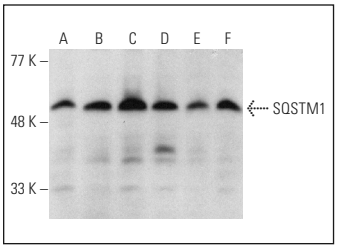
RESEARCH USE

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

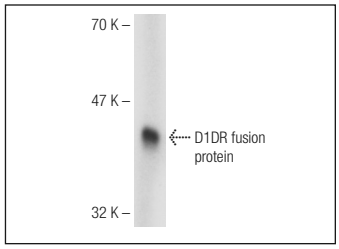
STORAGE

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

DATA



SQSTM1 (D-3) HRP: sc-28359 HRP. Direct western blot analysis of SQSTM1 expression in SK-LMS-1 (**A**), HeLa (**B**), MDA-MB-231 (**C**), SK-BR-3 (**D**),



D1DR (SG2-D1a): sc-33660. Western blot analysis of human recombinant D1DR fusion protein.

SELECT PRODUCT CITATIONS

1. Yang, J., et al. 2007. Reversible unilateral nigrostriatal pathway inhibition induced through expression of adenovirus-mediated clostridial light chain gene in the substantia nigra. Neuromolecular Med. 9: 276-284.
2. Zhu, H.J., et al. 2012. Impaired N-cadherin-mediated adhesion increases the risk of inducible ventricular arrhythmias in isolated rat hearts. Sci. Res. Essays 7: 2983-2991.
3. Wang, H., et al. 2013. Histone deacetylase inhibitors facilitate partner preference formation in female prairie voles. Nat. Neurosci. 16: 919-924.
4. Scheggi, S., et al. 2017. Fasting biases µ-opioid receptors toward β-arrestin2-dependent signaling in the accumbens shell. Neuroscience 352: 19-29.
5. Fanni, S., et al. 2018. 5α-reductase inhibitors dampen L-DOPA-induced dyskinesia via normalization of dopamine D1-receptor signaling pathway and D1-D3 receptor interaction. Neurobiol. Dis. 121: 120-130.
6. Heyl, D.L., et al. 2019. Characterizing the binding of dopamine D1-D2 receptors *in vitro* and in temporal and frontal lobe tissue total protein. FEBS Lett. 593:732-742.
7. Morales-Mulia, S., et al. 2020. Orexin-A up-regulates dopamine D2 receptor and mRNA in the nucleus accumbens Shell. Mol. Biol. Rep. 47: 9689-9697.
8. De Risi, M., et al. 2021. Altered heparan sulfate metabolism during development triggers dopamine-dependent autistic-behaviours in models of lysosomal storage disorders. Nat. Commun. 12: 3495.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.