DAT (C-20): sc-1433

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BIOTECHNOLOGY

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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 of Dopamine receptors. The Dopamine transporter, DAT, is a sodium and chloride-dependent Dopamine transporter. DAT also can transport Dopamine neurotoxins and has been implicated in the selective vulnerability of nigrostriatal dopaminergic neurons in major models of Parkinson's disease.

CHROMOSOMAL LOCATION

Genetic locus: SLC6A3 (human) mapping to 5p15.33; Slc6a3 (mouse) mapping to 13 C1.

SOURCE

DAT (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of DAT of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-1433 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

DAT (C-20) is recommended for detection of dopamine transporter 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)], 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). DAT (C-20) is also recommended for detection of dopamine transporter in additional species, including canine.

Suitable for use as control antibody for DAT siRNA (h): sc-41936, DAT siRNA (m): sc-41937, DAT shRNA Plasmid (h): sc-41936-SH, DAT shRNA Plasmid (m): sc-41937-SH, DAT shRNA (h) Lentiviral Particles: sc-41936-V and DAT shRNA (m) Lentiviral Particles: sc-41937-V.

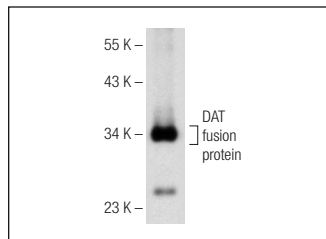Molecular Weight of non-glycosylated DAT: 50 kDa.

Molecular Weight of glycosylated DAT: 80 kDa.

Positive Controls: mouse kidney extract: sc-2255, SH-SY5Y cell lysate: sc-3812 or mouse brain extract: sc-2253.

STORAGE

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

DATA

DAT (C-20): sc-1433. Western blot analysis of human recombinant DAT fusion protein.

SELECT PRODUCT CITATIONS

1. Ho, M., et al. 2000. Dopamine uptake by mouse neuroblastoma N1E-115 cells stably expressing human dopamine transporter is differentially inhibited by anti-idiotypic ab2β antibodies mimicking the configuration of cocaine. Brain Res. 872: 231-235.

2. Salvatore, M.F., et al. 2009. Bilateral effects of unilateral GDNF administration on dopamine- and GABA-regulating proteins in the rat nigrostriatal system. Exp. Neurol. 219: 197-207.

3. Egana, L.A., et al. 2009. Physical and functional interaction between the dopamine transporter and the synaptic vesicle protein synaptogyrin-3. J. Neurosci. 29: 4592-4604.

4. Alyea, R.A. and Watson, C.S. 2009. Nongenomic mechanisms of physiological estrogen-mediated dopamine efflux. BMC Neurosci. 10: 59.

5. Leak, R.K., et al. 2010. Assaying multiple biochemical variables from the same tissue sample. J. Neurosci. Methods 191: 234-238.

6. Keller, C.M., et al. 2011. Biphasic dopamine regulation in mesoaccumbens pathway in response to non-contingent binge and escalating methamphetamine regimens in the Wistar rat. Psychopharmacology 215: 513-526.

7. Fico, A., et al. 2014. Reducing glypican-4 in ES cells improves recovery in a rat model of Parkinson's disease by increasing the production of dopaminergic neurons and decreasing teratoma formation. J. Neurosci. 34: 8318-8323.

RESEARCH USE

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

MONOS
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Try **DAT (6-8D6): sc-32259** or **DAT (6-5G10): sc-32258**, our highly recommended monoclonal alternatives to DAT (C-20). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **DAT (6-8D6): sc-32259**.