DAT (H-80): sc-14002

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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 (H-80) is a rabbit polyclonal antibody raised against amino acids 541-620 mapping near the C-terminus 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.

APPLICATIONS

DAT (H-80) 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), immunohistochemistry (including paraffin-embedded sections) (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 (H-80) 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.

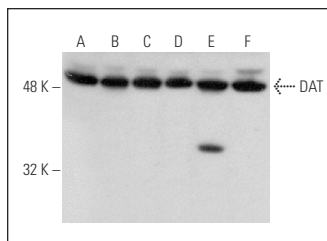Molecular Weight of glycosylated DAT: 80 kDa.

STORAGE

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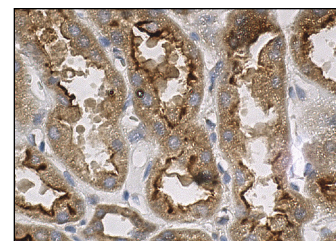
RESEARCH USE

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

DATA

DAT (H-80): sc-14002. Western blot analysis of DAT expression in BE (2)-M17 (**A**), IMR-32 (**B**), SK-N-SH (**C**), SH-SY5Y (**D**), SK-N-MC (**E**) and EOC 20 (**F**) whole cell lysates.

DAT (H-80): sc-14002. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing membrane and cytoplasmic staining of cells in tubules.

SELECT PRODUCT CITATIONS

1. Schott, B.H., et al. 2006. The dopaminergic midbrain participates in human episodic memory formation: evidence from genetic imaging. J. Neurosci. 26: 1407-1417.

2. Frankhauser, P., et al. 2006. Characterization of the neuronal dopamine transporter DAT in human blood platelets. Neurosci. Lett. 399: 197-201.

3. Lau, T., et al. 2006. Rapid and efficient differentiation of dopaminergic neurons from mouse embryonic stem cells. Neuroreport 17: 975-979.

4. Cruz-Muros, I., et al. 2009. Aging effects on the dopamine transporter expression and compensatory mechanisms. Neurobiol. Aging 30: 973-986.

5. Kern, C.H., et al. 2010. Preweaning manganese exposure causes hyper-activity, disinhibition, and spatial learning and memory deficits associated with altered dopamine receptor and transporter levels. Synapse 64: 363-378.

6. Kern, C.H., et al. 2010. Preweaning Mn exposure leads to prolonged astrocyte activation and lasting effects on the dopaminergic system in adult male rats. Synapse 65: 532-544.

7. Esposito, E., et al. 2012. Neuroprotective activities of palmitoylethanol-amide in an animal model of Parkinson's disease. PLoS ONE 7: e41880.

8. Xu, Y.Q., et al. 2013. Simvastatin induces neuroprotection in 6-OHDA-lesioned PC12 via the PI3K/AKT/caspase 3 pathway and anti-inflammatory responses. CNS Neurosci. Ther. 19: 170-177.

9. Pan, X., et al. 2015. Acrylamide increases dopamine levels by affecting dopamine transport and metabolism related genes in the striatal dopaminergic system. Toxicol. Lett. 236: 60-68.

MONOS
Satisfation Guaranteed

Try **DAT (6-8D6): sc-32259** or **DAT (6-5G10): sc-32258**, our highly recommended monoclonal alternatives to DAT (H-80). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **DAT (6-8D6): sc-32259**.