

DAT (hDAT-LOOP): sc-58517

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.

REFERENCES

1. Cotecchia, S., et al. 1990. Multiple second messenger pathways of α -adrenergic receptor subtypes expressed in eukaryotic cells. *J. Biol. Chem.* 265: 63-69.
2. Senogles, S.E. 1994. The D2 dopamine receptor isoforms signal through distinct G_i proteins to inhibit adenylyl cyclase. A study with site-directed mutant G_i proteins. *J. Biol. Chem.* 269: 23120-23127.
3. 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.
4. 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.
5. Ogawa, N. 1995. Molecular and chemical neuropharmacology of dopamine receptor subtypes. *Acta Med. Okayama* 49: 1-11.
6. Nirenberg, M.J., et al. 1996. The dopamine transporter is localized to dendritic and axonal plasma membranes of nigrostriatal dopaminergic neurons. *J. Neurosci.* 16: 436-447.

CHROMOSOMAL LOCATION

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

SOURCE

DAT (hDAT-LOOP) is a rat monoclonal antibody raised against amino acids 180-218 corresponding to the second extracellular loop of DAT of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

DAT (hDAT-LOOP) is recommended for detection of DAT 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

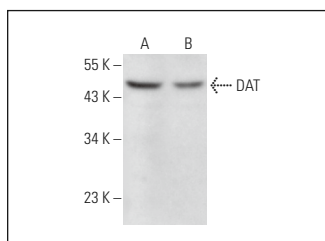
Suitable for use as control antibody for DAT siRNA (h): sc-41936, DAT siRNA (m): sc-41937, DAT shRNA Plasmid (h): sc-41936-SH, DAT shRNA Plasmid (m): sc-41937-SH, DAT shRNA (h) Lentiviral Particles: sc-41936-V and DAT shRNA (m) Lentiviral Particles: sc-41937-V.

Molecular Weight of non-glycosylated DAT: 50 kDa.

Molecular Weight of glycosylated DAT: 80 kDa.

Positive Controls: SUP-T1 whole cell lysate: sc-364796, SK-N-SH cell lysate: sc-2410 or U-87 MG cell lysate: sc-2411.

DATA



DAT (hDAT-LOOP): sc-58517. Western blot analysis of DAT expression in U-87 MG (A) and SUP-T1 (B) whole cell lysates.



DAT (hDAT-LOOP): sc-58517. Immunoperoxidase staining of formalin fixed, paraffin-embedded human hippocampus tissue showing cytoplasmic staining of neuronal cells and glial cells.

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.

PROTOCOLS

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



See **DAT (6-8D6): sc-32259** for DAT antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.