SANTA CRUZ BIOTECHNOLOGY, INC.

DAT (6-5G10): sc-32258

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 (6-5G10) is a rat monoclonal antibody raised against recombinant fusion DAT amino acids 1-66 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.

DAT (6-5G10) is available conjugated to agarose (sc-32258 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-32258 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-32258 PE), fluorescein (sc-32258 FITC), Alexa Fluor® 488 (sc-32258 AF488), Alexa Fluor® 546 (sc-32258 AF546), Alexa Fluor® 594 (sc-32258 AF594) or Alexa Fluor® 647 (sc-32258 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-32258 AF680) or Alexa Fluor® 790 (sc-32258 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

DAT (6-5G10) 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 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

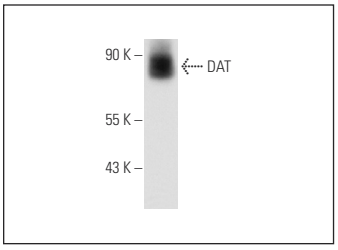
Suitable for use as control antibody for DAT siRNA (h): sc-41936, DAT siRNA (m): sc-41937, DAT shRNA Plasmid (h): sc-41936-SH, DAT shRNA Plasmid (m): sc-41937-SH, DAT shRNA (h) Lentiviral Particles: sc-41936-V and DAT shRNA (m) Lentiviral Particles: sc-41937-V.

Molecular Weight of non-glycosylated/glycosylated DAT: 50/80 kDa.

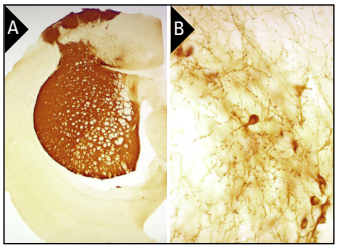
STORAGE

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

DATA



DAT (6-5G10): sc-32258. Western blot analysis of DAT expression in mouse brain tissue extract.



DAT (6-5G10): sc-32258. Immunoperoxidase staining of paraformaldehyde fixed, frozen sections of normal mouse brain tissue showing striatum (**A**) and substantia nigra (**B**) staining. Kindly provided by Dr. Allan Levey and Dr. Howard Rees at Emory University.

SELECT PRODUCT CITATIONS

1. Di Salvio, M., et al. 2010. Otx2 controls neuron subtype identity in ventral tegmental area and antagonizes vulnerability to MPTP. Nat. Neurosci. 13: 1481-1488.
2. Cameron, K.N., et al. 2015. Amphetamine activates calcium channels through dopamine transporter-mediated depolarization. Cell Calcium 58: 457-466.
3. Song, J., et al. 2016. Investigation of the antidepressant effects of exopolysaccharides obtained from *Marasmius androsaceus* fermentation in a mouse model. Mol. Med. Rep. 13: 939-946.
4. Nouri, N. and Awatramani, R. 2017. A novel floor plate boundary defined by adjacent En1 and Dbx1 microdomains distinguishes midbrain dopamine and hypothalamic neurons. Development 144: 916-927.
5. Kesby, J.P., et al. 2018. Effects of HIV-1 TAT protein and methamphetamine exposure on visual discrimination and executive function in mice. Behav. Brain Res. 349: 73-79.
6. Oliver, R.J., et al. 2019. Transient chemogenetic inhibition of D1-MSNs in the dorsal striatum enhances methamphetamine self-administration. Brain Sci. 9: 330.
7. Ferizovic, H., et al. 2020. The fatty acid amide hydrolase inhibitor URB597 modulates splenic catecholamines in chronically stressed female and male rats. Int. Immunopharmacol. 85: 106615.
8. Song, N., et al. 2021. Induced expression of kir6.2 in A1 astrocytes propagates inflammatory neurodegeneration via Drp1-dependent mitochondrial fission. Front. Pharmacol. 11: 618992.

RESEARCH USE

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

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