

DESCRIPTION

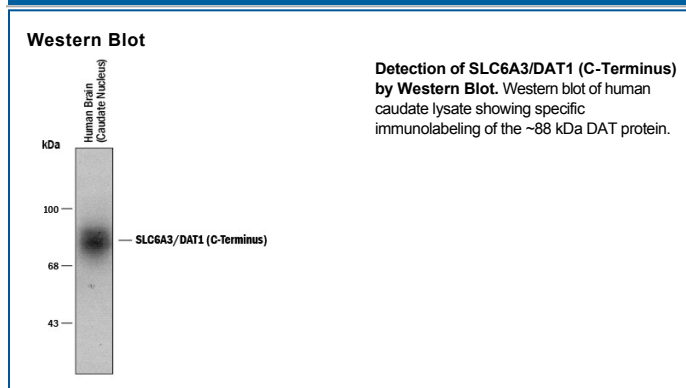
Species Reactivity	Human/Mouse/Primate
Specificity	Specific for the ~88 kDa DAT protein in Western blots of SDS-solubilized human and mouse striatal samples and in IHC applications with formaldehyde-fixed human and monkey (Macaque) brain sections.
Source	Polyclonal Rabbit IgG
Purification	Antigen Affinity-purified
Immunogen	SLC6A3/DAT1
Formulation	100 µL in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg/mL BSA and 50% glycerol. See Certificate of Analysis for details.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Western Blot	1:1000 dilution	See Below
Immunohistochemistry	1:1000 dilution	(frozen sections)

DATA



PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	For long-term storage, ≤ -20° C is recommended. Product is stable at ≤ -20° C for at least 1 year.

BACKGROUND

The dopamine transporter (DAT) is a 70-80 kDa member of the Na⁺-neurotransmitter symporter family of transmembrane (TM) proteins. DAT plays a crucial role in the synaptic clearance of dopamine (DA). It mediates the uptake of dopamine by the presynaptic terminal, thus limiting the strength of the dopaminergic response. One molecule of DA is accompanied by two Na⁺ and one Cl⁻ ion. Molecules such as amphetamine both competitively inhibit DA uptake, and induce DA release through the DAT, increasing the rewarding property of DA. Human DAT is a 620 amino acid (aa), 12 TM phosphoglycoprotein with an N- and C-terminal cytoplasmic domain. It exists as a disulfide-linked oligomer on the cell surface. Phosphorylation of the N-terminus (S7/12) promotes DA release. The C-terminus binds CaMKII, as well as Hic5, Pick1, and synuclein which regulate receptor trafficking and expression. There is an extended 71 aa extracellular (EC) loop between TM segments 3 and 4. Glycosylation at this site is necessary for oligomer expression on the cell membrane. The human 42 aa DAT C-terminus is 93% aa identical to the mouse DAT C-terminus. The human EC loop is also 93% aa identical to the rhesus monkey EC loop.

References:

1. Torres, G.E. (2006) *J. Neurochem.* **97**(Suppl. 1):3.
2. Sotnikova, T.D. *et al.* (2006) *CNS Neurol. Disord. Drug Targets.* **5**:45.
3. Fog, J.U. *et al.* (2006) *Neuron* **51**:417.
4. Giros, B. *et al.* (1992) *Mol. Pharmacol.* **42**:383.
5. Cervinski, M.A. *et al.* (2005) *J. Biol. Chem.* **280**:40442.