

Product Information

Anti-Dopamine Transporter (N-terminal)

produced in rabbit, affinity isolated antibody

Product Number **D6944**

Product Description

Anti-Dopamine Transporter (N-terminal) is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 42-59 of rat dopamine transporter (DAT) (GeneID 24898) conjugated to KLH. This sequence is highly conserved in mouse DAT (single amino acid substitution) and has lower homology (72% identity) to human DAT. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Dopamine Transporter (N-terminal) specifically recognizes human and rat DAT. The antibody may be used in immunoblotting (~50 kDa, additional band may appear at ~65kDa due to PTMs) and immuno-fluorescence. Staining of the DAT band by immunoblotting is specifically inhibited by the DAT immunizing peptide.

Dopamine transporter (also known as DAT, DAT1, solute carrier family 6, member 3, SLC6A3) belongs to a family of biogenic amine transporters that include the norepinephrine, serotonin (SERT), and vesicular monoamine transporters. These transporters are members of a larger Na⁺/Cl⁻-dependent neurotransmitter transporter family.¹ DAT is a principal regulator of dopaminergic-neurotransmission. It is localized on presynaptic nerve terminals and mediates the active reuptake of dopamine from the synapse, thus terminating the neurotransmitter signal.^{1,2} DAT is expressed in major dopaminergic areas of the brain, and is enriched in dendrites and cell bodies of neurons in the substantia nigra (SN) and ventral tegmental area (VTA).² DAT is the primary site for the action of neurotoxins, such as MPTP, and the drugs of abuse cocaine and amphetamine.^{1,3} Cocaine binds directly DAT and slows dopamine transport. In contrast, amphetamine induces phosphorylation and internalization of DAT via signaling cascades thought to involve MAPK/PKC.^{4,5} DAT has been implicated in a number of dopamine-related disorders, including attention deficit hyperactivity disorder (ADHD), bipolar disorder, clinical depression, and alcoholism. Because DAT can transport dopamine neurotoxins, it has been implicated in the selective vulnerability of nigrostriatal dopaminergic neurons in Parkinson's disease.⁶

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody Concentration: ~1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working antibody concentration of 0.5-1 µg/mL is recommended using a rat brain extract.

Immunofluorescence: a working antibody concentration of 5-10 µg/mL is recommended using SH-SY-5Y cells. .

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

1. Torres, G.E., et al., *Nature Rev. Neurosci.*, **4**, 13-25 (2003).
2. Ciliax, B.J., et al., *J. Comp. Neurol.*, **409**, 38-56 (1999).
3. Kahlig, K.M., et al., *J. Biol. Chem.*, **279**, 8966-8975 (2004).
4. Morón, J.A., et al., *J. Neurosci.*, **23**, 8480-8488 (2003).
5. Pristupa, Z.B., et al., *Synapse*, **30**, 79-87 (1998).
6. Storch, A., et al., *J. Neural Transm.*, **111**, 1267-1286 (2004).

ER,DS,PHC 04/16-3