

Product Information

Anti-Dopamine Transporter, Extracellular Loop 2

Developed in Rabbit, Affinity Isolated Antibody

Product Number **D 9442**

Product Description

Anti-Dopamine Transporter (DAT) Extracellular Loop 2 (EL2) is developed in rabbit using a synthetic peptide from the extracellular loop 2 region of human dopamine transporter (DAT) conjugated to KLH as immunogen. The antibody was affinity isolated using a peptide-SulfoLink[®] column matrix.

Anti-Dopamine Transporter (DAT) Extracellular Loop 2 specifically recognizes DAT in human and monkey striatum. It has been used in immunoblotting, Dot Blots and immunohistochemistry applications.

The dopamine transporter (DAT1) acts to take released dopamine back up into presynaptic terminals and has been implicated in human disorders such as parkinsonism, Tourette syndrome, and substance abuse. Dopamine transporter is a primary candidate gene for Attention Deficit Disorder. Study of 122 children, siblings and parents with behavioral problems, confirmed the 480-bp allele as the high-risk allele. Within-family analyses of linkage disequilibrium, suggested association and linkage of ADHD with dopamine transporter gene (DAT1). The relation of DAT1 to ADHD increased monotonically, from low to medium to high levels of symptom severity. These results replicate and extend previous findings of the association between the DAT1 gene and childhood ADHD.²

The studies of the age-related changes in the dopaminergic system, included measurements of the levels of several presynaptic dopaminergic markers [dopamine (DA), homovanillic acid, tyrosine hydroxylase (TH), aromatic L-amino acid decarboxylase (AADC), vesicular monoamine transporter 2 (VMAT2), and dopamine transporter (DAT)] in post-mortem human striatum. Declines in dopamine-related function during adulthood and senescence could be contributed to lower dopamine levels per se as opposed to dopaminergic innervation/neuropil that continue to develop well past birth but become over elaborated and undergo regressive remodeling during adolescence.³

There is a significant association between homozygosity for the 480-bp DAT allele, maternal prenatal smoking, and hyperactivity-impulsivity and oppositional behaviors.⁴ Animal studies suggest that the development of substance dependence (e.g., alcoholism) is associated with dopaminergic activity in striatum and the limbic system.

Reagent

The antibody is supplied as 100 μ L in 10 mM HEPES, pH 7.5, 150 mM NaCl, 100 μ g/ml BSA and 50% glycerol.

Storage/Stability

Store at -20°C . Do not store in frost-free freezers. Working dilution samples should be discarded if not used within 12 hours. The antibody is stable for at least 12 months when stored appropriately.

Product Profile

The supplied reagent is sufficient for 10 immunoblots.

A recommended working dilution of 1:1000 is determined by immunoblotting with SDS-solubilized human striatal samples and by immunohistochemistry with formaldehyde-fixed human and monkey brain sections

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

1. Giros, B., et al., Cloning, pharmacological characterization, and chromosome assignment of the human dopamine transporter., *Mol. Pharmacol.*, **42**, 383-90 (1992).
2. Waldman, I. D., et al., Association and linkage of the dopamine transporter gene and attention-deficit hyperactivity disorder in children: heterogeneity owing to diagnostic subtype and severity., *Am. J. Hum. Genet.*, **63**, 1767-1776 (1998).

3. Haycock, J.W., et al., Marked disparity between age-related changes in dopamine and other presynaptic dopaminergic markers in human striatum., *J. Neurochem.*, **87**, 574 – 585 (2003).
4. Kahn, R. S., et al., Role of dopamine transporter genotype and maternal prenatal smoking in childhood hyperactive-impulsive, inattentive, and oppositional behaviors., *J. Pediat.*, **143**, 104-110 (2003).

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