Anti-Dopamine Transporter Antibody

HA500007

Product Type:	Rabbit polyclonal IgG, primary antibodies
Species reactivity:	Human, Mouse, Rat
Applications:	WB, IHC-P, IF-Cell, FC
Molecular Wt:	Predicted band size: 68 kDa

Description: The dopamine transporter (also dopamine active transporter, DAT, SLC6A3) is a membrane-spanning protein that pumps the neurotransmitter dopamine out of the synaptic cleft back into cytosol. In the cytosol, other transporters sequester the dopamine into vesicles for storage and later release. Dopamine reuptake via DAT provides the primary mechanism through which dopamine is cleared from synapses, although there may be an exception in the prefrontal cortex, where evidence points to a possibly larger role of the norepinephrine transporter.DAT is implicated in a number of dopamine-related disorders, including attention deficit hyperactivity disorder, bipolar disorder, clinical depression, alcoholism, and substance use disorder. The gene that encodes the DAT protein is located on human chromosome 5, consists of 15 coding exons, and is roughly 64 kbp long. Evidence for the associations between DAT and dopamine related disorders has come from a type of genetic polymorphism, known as a VNTR, in the DAT gene (DAT1), which influences the amount of protein expressed.

Immunogen: Synthetic peptide within human Dopamine Transporter aa 570-620.

Positive control: Mouse brain tissue lysate, rat brain tissue lysate, rat brain tissue, mouse brain tissue, SKOV-3, F9.

Subcellular location: Cell membrane.

Database links: SwissProt: Q01959 Human | Q61327 Mouse | P23977 Rat

Recommended Dilutions:

WB	1:500-1:1,000
IHC-P	1:100-1:500
IF-Cell	1:50-1:200
FC	1:50-1:100

Storage Buffer: 1*TBS (pH7.4), 0.2% BSA, 50% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Shipped at 4℃. Store at +4℃ short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20℃ long term.

Purity: Immunogen affinity purified.

Images

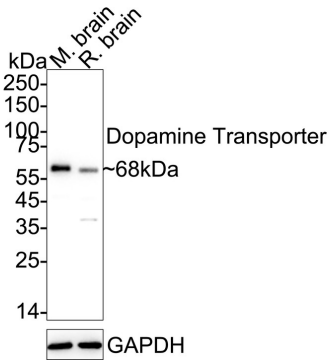

Fig1: Western blot analysis of Dopamine Transporter on different lysates with Rabbit anti-Dopamine Transporter antibody (HA500007) at 1/1,000 dilution.

Lane 1: Mouse brain tissue lysate
Lane 2: Rat brain tissue lysate

Lysates/proteins at 30 µg/Lane.

Predicted band size: 68 kDa
Observed band size: 68 kDa

Exposure time: 25 seconds; ECL: K1801;

4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (HA500007) at 1/1,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1/50,000 dilution was used for 1 hour at room temperature.

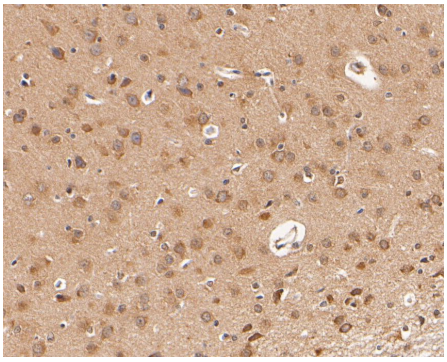

Fig2: Immunohistochemical analysis of paraffin-embedded rat brain tissue using anti-Dopamine Transporter antibody. The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 8.0-8.4) for 20 minutes.The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA500007, 1/400) for 30 minutes at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

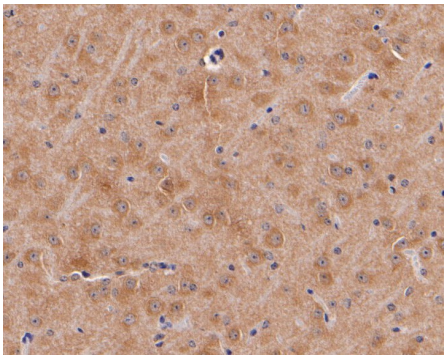

Fig3: Immunohistochemical analysis of paraffin-embedded mouse brain tissue using anti-Dopamine Transporter antibody. The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 8.0-8.4) for 20 minutes.The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA500007, 1/400) for 30 minutes at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

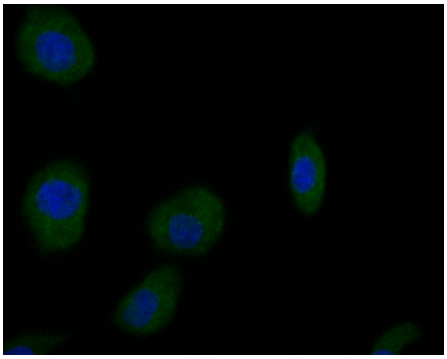

Fig4: ICC staining of Dopamine Transporter in SKOV-3 cells (green). Formalin fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 10 minutes at room temperature and blocked with 1% Blocker BSA for 15 minutes at room temperature. Cells were probed with the primary antibody (HA500007, 1/200) for 1 hour at room temperature, washed with PBS. Alexa Fluor®488 Goat anti-Rabbit IgG was used as the secondary antibody at 1/1,000 dilution. The nuclear counter stain is DAPI (blue).

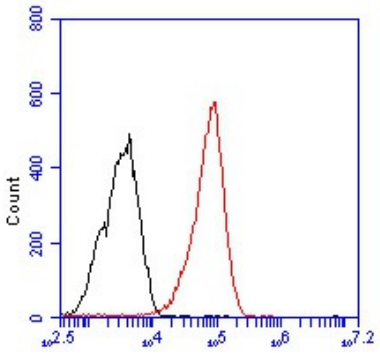

Fig5: Flow cytometric analysis of Dopamine Transporter was done on F9 cells. The cells were fixed, permeabilized and stained with the primary antibody (HA500007, 1/50) (red). After incubation of the primary antibody at room temperature for an hour, the cells were stained with a Alexa Fluor 488-conjugated Goat anti-Rabbit IgG Secondary antibody at 1/1000 dilution for 30 minutes.Unlabelled sample was used as a control (cells without incubation with primary antibody; black).

Note: All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

Background References

1. Savchenko A et al. Dopamine Transporter Deficient Rodents: Perspectives and Limitations for Neuroscience. Biomolecules. 2023 May
2. Ng J et al. Dopamine Transporter Deficiency Syndrome (DTDS): Expanding the Clinical Phenotype and Precision Medicine Approaches. Cells. 2023 Jun