Anti-Dopamine D2 Receptor Antibody [PSH09-93] HA723162

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human, Mouse
Applications:	WB, IHC-Fr, IF-Cell, FC
Molecular Wt:	Predicted band size: 51 kDa
Clone number:	PSH09-93

Description: Dopamine receptor D2, also known as D2R, is a protein that, in humans, is encoded by the DRD2 gene. The dopamine D2 receptor is the main receptor for most antipsychotic drugs. The structure of DRD2 in complex with the atypical antipsychotic risperidone has been determined. D2 receptors are coupled to Gi subtype of G protein. This G protein-coupled receptor inhibits adenylyl cyclase activity. In mice, regulation of D2R surface expression by the neuronal calcium sensor-1 (NCS-1) in the dentate gyrus is involved in exploration, synaptic plasticity and memory formation. Studies have shown potential roles for D2R in retrieval of fear memories in the prelimbic cortex and in discrimination learning in the nucleus accumbens. In flies, activation of the D2 autoreceptor protected dopamine neurons from cell death induced by MPP+, a toxin mimicking Parkinson's disease pathology. While optimal dopamine levels favor D1R cognitive stabilization, it is the D2R that mediates the cognitive flexibility in humans.

Immunogen: Recombinant protein within human Dopamine D2 Receptor aa 214-373.

Positive control: SH-SY5Y cell lysate, U-87 MG cell lysate, NCI-H1299 cell lysate, THP-1 cell lysate, Neuro-2a cell lysate, mouse striatum tissue, SH-SY5Y, Neuro-2a.

Subcellular location: Cell membrane, Golgi apparatus membrane.

Database links: SwissProt: P14416 Human | P61168 Mouse

Recommended Dilutions:

WB	1:10,000
IHC-Fr	1:500
IF-Cell	1:100
FC	1:1,000

Storage Buffer: PBS (pH7.4), 0.1% BSA, 40% 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: Protein A affinity purified.

Images

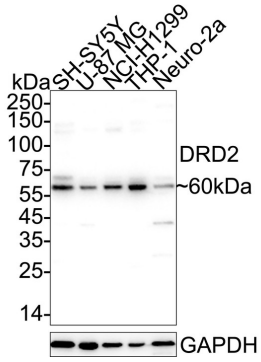

Fig1: Western blot analysis of Dopamine D2 Receptor on different lysates with Rabbit anti-Dopamine D2 Receptor antibody (HA723162) at 1/10,000 dilution.

Lane 1: SH-SY5Y cell lysate (no heat)
Lane 2: U-87 MG cell lysate (no heat)
Lane 3: NCI-H1299 cell lysate (no heat)
Lane 4: THP-1 cell lysate (no heat)
Lane 5: Neuro-2a cell lysate (no heat)

Notice: no heat means the lysate is not boiled.

Lysates/proteins at 20 µg/Lane.

Predicted band size: 51 kDa
Observed band size: 60 kDa

Exposure time: 10 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 (HA723162) at 1/10,000 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.

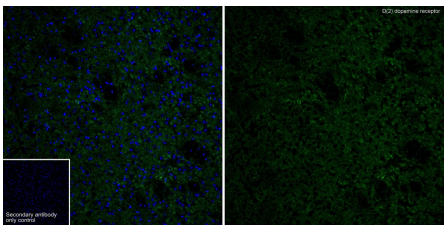

Fig2: Immunofluorescence analysis of frozen mouse striatum tissue with Rabbit anti-Dopamine D2 Receptor antibody (HA723162) at 1/500 dilution.

The section was not undergone antigen retrieval. The tissues were blocked in 10% negative goat serum for 1 hour at room temperature, washed with PBS, and then probed with the primary antibody (HA723162, green) at 1/500 dilution overnight at 4 ℃, washed with PBS. Goat Anti-Rabbit IgG H&L (iFluor™ 488, HA1121) was used as the secondary antibody at 1/1,000 dilution. Nuclei were counterstained with DAPI (blue).

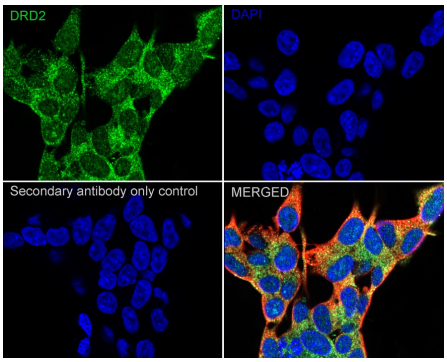

Fig3: Immunocytochemistry analysis of SH-SY5Y cells labeling Dopamine D2 Receptor with Rabbit anti-Dopamine D2 Receptor antibody (HA723162) at 1/100 dilution.

Cells were fixed in 4% paraformaldehyde for 15 minutes at room temperature, permeabilized with 0.1% Triton X-100 in PBS for 15 minutes at room temperature, then blocked with 1% BSA in 10% negative goat serum for 1 hour at room temperature. Cells were then incubated with Rabbit anti-Dopamine D2 Receptor antibody (HA723162) at 1/100 dilution in 1% BSA in PBST overnight at 4 ℃. Goat Anti-Rabbit IgG H&L (iFluor™ 488, HA1121) was used as the secondary antibody at 1/1,000 dilution. PBS instead of the primary antibody was used as the secondary antibody only control. Nuclear DNA was labelled in blue with DAPI.

Beta tubulin (HA601187, red) was stained at 1/100 dilution overnight at +4℃. Goat Anti-Mouse IgG H&L (iFluor™ 594, HA1126) was used as the secondary antibody at 1/1,000 dilution.

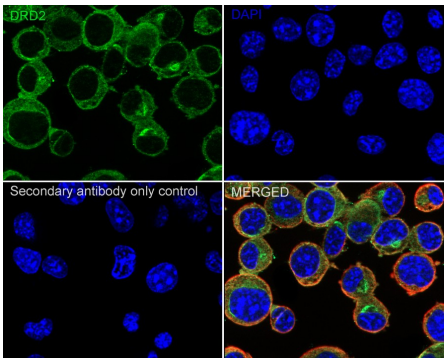

Fig4: Immunocytochemistry analysis of Neuro-2a cells labeling Dopamine D2 Receptor with Rabbit anti-Dopamine D2 Receptor antibody (HA723162) at 1/100 dilution.

Cells were fixed in 4% paraformaldehyde for 15 minutes at room temperature, permeabilized with 0.1% Triton X-100 in PBS for 15 minutes at room temperature, then blocked with 1% BSA in 10% negative goat serum for 1 hour at room temperature. Cells were then incubated with Rabbit anti-Dopamine D2 Receptor antibody (HA723162) at 1/100 dilution in 1% BSA in PBST overnight at 4 ℃. Goat Anti-Rabbit IgG H&L (iFluor™ 488, HA1121) was used as the secondary antibody at 1/1,000 dilution. PBS instead of the primary antibody was used as the secondary antibody only control. Nuclear DNA was labelled in blue with DAPI.

Beta tubulin (HA601187, red) was stained at 1/100 dilution overnight at +4℃. Goat Anti-Mouse IgG H&L (iFluor™ 594, HA1126) was used as the secondary antibody at 1/1,000 dilution.

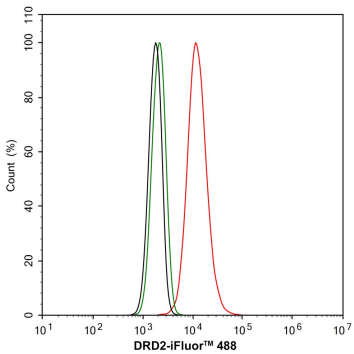

Fig5: Flow cytometric analysis of SH-SY5Y cells labeling Dopamine D2 Receptor.

Cells were fixed and permeabilized. Then stained with the primary antibody (HA723162, 1/1,000) (red) compared with Rabbit IgG Isotype Control (green). After incubation of the primary antibody at +4℃ for an hour, the cells were stained with a iFluor™ 488 conjugate-Goat anti-Rabbit IgG Secondary antibody (HA1121) at 1/1,000 dilution for 30 minutes at +4℃. Unlabelled sample was used as a control (cells without incubation with primary antibody; black).

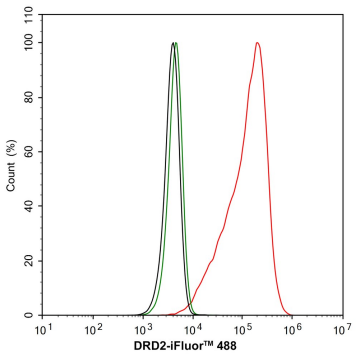

Fig6: Flow cytometric analysis of Neuro-2a cells labeling Dopamine D2 Receptor.

Cells were fixed and permeabilized. Then stained with the primary antibody (HA723162, 1/1,000) (red) compared with Rabbit IgG Isotype Control (green). After incubation of the primary antibody at +4℃ for an hour, the cells were stained with a iFluor™ 488 conjugate-Goat anti-Rabbit IgG Secondary antibody (HA1121) at 1/1,000 dilution for 30 minutes at +4℃. 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. Bliźniewska-Kowalska KM et al. Dopamine D2 receptor partial agonists in the treatment of schizophrenia -example of brexpiprazole. Psychiatr Pol. 2024 Aug
2. Yin N et al. Dopamine D2 Receptor-Mediated Modulation of Rat Retinal Ganglion Cell Excitability. Neurosci Bull. 2020 Mar