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Dopamine Receptor D3 Antibody

Rabbit mAb
Catalog # AP91687

Product Information

Application	WB
Primary Accession	P35462
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Other Names	D(3) dopamine receptor; Dopamine D3 receptor; DRD3; ETM1; FET1;
Isotype	Rabbit IgG
Host	Rabbit
Calculated MW	44195

Additional Information

Dilution	WB 1:500~1:2000
Purification	Affinity-chromatography
Immunogen	A synthesized peptide derived from human Dopamine Receptor D3
Description	This is one of the five types (D1 to D5) of receptors for dopamine. The activity of this receptor is mediated by G proteins which inhibit adenylyl cyclase. Promotes cell proliferation.
Storage Condition and Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.

Protein Information

Name	DRD3 {ECO:0000303|PubMed:9514583, ECO:0000312|HGNC:HGNC:3024}
Function	G protein-coupled receptor for dopamine, a catecholamine neurotransmitter hormone that functions as the brain's 'reward chemical', driving motivation, reinforcement learning and pleasure (PubMed:19520868, PubMed:33548201, PubMed:37221270, PubMed:39237617, PubMed:39984436, PubMed:8301582). Dopamine binding causes a conformation change that triggers signaling via guanine nucleotide- binding proteins (G proteins) and modulates the activity of downstream effectors, such as adenylate cyclase (PubMed:10578130, PubMed:33548201, PubMed:37221270, PubMed:39237617). Dopamine receptors can be classified in two categories: (1) DRD3 (together with DRD2 and DRD4) is a D2-type receptor and is coupled to G(i)/G(o) G proteins, mediating inhibition of adenylate cyclase activity, while D1-type receptors (DRD1 and DRD5) are coupled to G(s) G proteins and promote activation of adenylate cyclase activity (PubMed:10578130, PubMed:33548201, PubMed:37221270, PubMed:39237617). D1- and D2-type dopamine receptors have antagonistic effects, particularly in the brain's striatum, where they govern voluntary movement and reward: D1-type

receptors generally stimulate neural activity and promotes action, while D2-type receptors tend to inhibit neural activity and suppress movement (PubMed:10578130, PubMed:33548201, PubMed:37221270, PubMed:39237617). DRD3 is primarily expressed in limbic areas of the brain and is involved in the modulation of cognitive, emotional and motor functions: plays a key role in regulating neuronal signaling pathways associated with motivation, reward and behavior (PubMed:39984436). Involved in the incentive salience of drugs: controls responses to drug-related stimuli, making it a key target for reducing addiction to substances like cocaine, morphine, and alcohol (PubMed:10432116, PubMed:39984436). Forms heterotetramers with DRD1 to potentiate beta-arrestin recruitment and mediate locomotor activity (By similarity). Also involved in autophagy regulation: receptor activation stimulates AMPK, which phosphorylates RPTOR and enhances its interaction with MTOR, thereby inhibiting mTORC1 signaling and its downstream target RPS6KB1 (PubMed:31538542). This leads to activation of ULK1 and initiation of the autophagy cascade (PubMed:31538542).

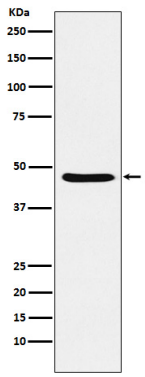
Cellular Location

Cell membrane; Multi-pass membrane protein. Note=Both membrane-bound and scattered in the cytoplasm during basal conditions (PubMed:19520868). Receptor stimulation results in the rapid internalization and sequestration of the receptors at the perinuclear area (5 and 15 minutes), followed by the dispersal of the receptors to the membrane (30 minutes) (PubMed:19520868). DRD3 and GRK4 co-localize in lipid rafts of renal proximal tubule cells (PubMed:19520868)

Tissue Location

Brain..

Images



Western blot analysis of Dopamine Receptor D3 expression in SH-SY5Y cell lysate.

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