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Dopamine Receptor D3 Rabbit mAb

Catalog # AP77941

Product Information

Application	WB
Primary Accession	P35462
Reactivity	Rat, Human, Mouse
Host	Rabbit
Clonality	Monoclonal Antibody
Isotype	IgG
Conjugate	Unconjugated
Immunogen	A synthesized peptide derived from human Dopamine Receptor D3
Purification	Affinity Chromatography
Calculated MW	44195

Additional Information

Gene ID	1814
Other Names	DRD3
Dilution	WB~~1/500-1/1000
Format	Liquid in 10mM PBS, pH 7.4, 150mM sodium chloride, 0.05% BSA, 0.02% sodium azide and 50% glycerol.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

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).

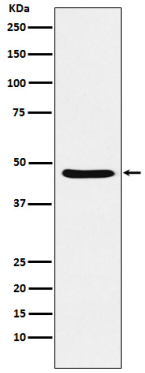
Cellular Location

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



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