10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

# Anti-Dopamine Receptor D3 Antibody

Catalog # ABO10898

## Product Information

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| **Application** | WB, IHC-P |
| **Primary Accession** | P35462 |
| **Host** | Rabbit |
| **Reactivity** | Human, Mouse, Rat |
| **Clonality** | Polyclonal |
| **Format** | Lyophilized |
| **Description** | Rabbit IgG polyclonal antibody for D(3) dopamine receptor(DRD3) detection. Tested with WB, IHC-P in Human;Mouse;Rat. |
| **Reconstitution** | Add 0.2ml of distilled water will yield a concentration of 500ug/ml. |

## Additional Information

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| **Gene ID** | 1814 |
| **Other Names** | D(3) dopamine receptor, Dopamine D3 receptor, DRD3 |
| **Calculated MW** | 44195 |
| **Application Details** | Immunohistochemistry(Paraffin-embedded Section), 0.5-1 □g/ml, Rat, Human, Mouse, By Heat<br>Western blot, 0.1-0.5 □g/ml, Human, Rat, Mouse |
| **Subcellular Localization** | Cell membrane ; Multi-pass membrane protein . Both membrane-bound and scattered in the cytoplasm during basal conditions. 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). DRD3 and GRK4 co- localize in lipid rafts of renal proximal tubule cells. |
| **Tissue Specificity** | Brain. |
| **Source** | Eukaryota |
| **Protein Name** | D(3) dopamine receptor |
| **Contents** | Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg Thimerosal, 0.05mg NaN3. |
| **Immunogen** | A synthetic peptide corresponding to a sequence at the C-terminus of human Dopamine Receptor D3(352-367aa NTHCQTCHVSPELYSA), different from the related rat and mouse sequences by two amino acids. |

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| **Purification** | Immunogen affinity purified. |
| **Cross Reactivity** | No cross reactivity with other proteins |
| **Storage** | At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing. |
| **Sequence Similarities** | Belongs to the G-protein coupled receptor 1 family. |

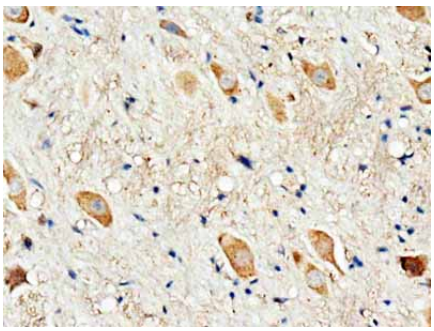
## Protein Information

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| **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.. |

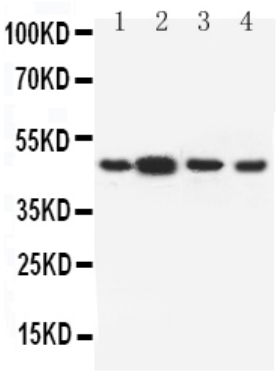
## Background

DRD3 is a dopamine receptor that differs in its pharmacology and signaling system from the D1 and D2 receptors and represents both an autoreceptor and a postsynaptic receptor. DRD3 is localized to limbic areas of the brain, which are associated with cognitive, emotional, and endocrine functions. The DRD3 gene, which is mapped to chromosome 3, is like the DRD2 gene but unlike most other members of this superfamily and it contains introns, 5 in number. The position of 2 of the introns corresponds to that of introns in DRD2. The D3 receptor appeared to mediate some of the effects of antipsychotic drugs and drugs used in the treatment of Parkinson disease, which were previously though to interact only with D2 receptors.

## Images



Anti-Dopamine Receptor D3 antibody, ABO10898, IHC(P)IHC(P): Rat Brain Tissue




Anti-Dopamine Receptor D3 antibody, ABO10898, Western blottingLane 1: Rat Testis Tissue LysateLane 2: Rat Brain Tissue LysateLane 3: U87 Cell LysateLane 4: HELA Cell Lysate

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.