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

DRD2 Mouse mAb

Catalog # AP98327

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	P14416
Other Accession	P14416
Reactivity	Rat, Human, Mouse
Host	Mouse
Clonality	Monoclonal
Calculated MW	50619
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human DRD2
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the G-protein coupled receptor 1 family.
DISEASE	Defects in DRD2 are associated with dystonia type 11 (DYT11) [MIM:159900]; also known as alcohol-responsive dystonia. DYT11 is a myoclonic dystonia. Dystonia is defined by the presence of sustained involuntary muscle contractions, often leading to abnormal postures. DYT11 is characterized by involuntary lightning jerks and dystonic movements and postures alleviated by alcohol. Inheritance is autosomal dominant. The age of onset, pattern of body involvement, presence of myoclonus and response to alcohol are all variable.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	This gene encodes the D2 subtype of the dopamine receptor. This G-protein coupled receptor inhibits adenylyl cyclase activity. A missense mutation in this gene causes myoclonus dystonia; other mutations have been associated with schizophrenia. Alternative splicing of this gene results in two transcript variants encoding different isoforms. A third variant has been described, but it has not been determined whether this form is normal or due to aberrant splicing. [provided by RefSeq, Jul 2008]

Additional Information

Gene ID	1813
Other Names	D2DR; D2R; DRD2_HUMAN; DRD2; Dopamine D2 receptor; DRD2_MOUSE; DRD2_RAT; Drd-2; dopamine receptor D2
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	DRD2 {ECO:0000303|PubMed:15389757, ECO:0000312|HGNC:HGNC:3023}
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:21645528, PubMed:32103023, PubMed:32528175, PubMed:33353947, PubMed:33571431, PubMed:37221270, PubMed:39103320). 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:32103023, PubMed:32528175, PubMed:33353947, PubMed:33571431, PubMed:37221270). Dopamine receptors can be classified in two categories: (1) DRD2 (together with DRD3 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:32103023, PubMed:32528175, PubMed:33353947, PubMed:33571431, PubMed:37221270). In the central nervous system, DRD2 is mainly coupled to G(o)/GNAO1 (By similarity). 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 (By similarity). DRD1 and DRD2 are the most abundant dopamine receptors in the central nervous system, especially in the basal ganglia and the prefrontal cortex (PubMed:33571431). DRD2 receptor plays a key role in risky decision-making by modulating reward sensitivity and executive control; DRD2 activation in nucleus accumbens cells leading to increased risk- taking and impulsivity (By similarity). DRD2 can also couple with G(q) by forming a heteromer with the ghrelin receptor GHSR in neurons independently of ghrelin (By similarity). Following DRD2 activation by dopamine in lumbosacral defecation centers, GHSR acts as a coreceptor promoting DRD2 coupling to G(q) at the expense of G(i)/G(o), regulating defecation (By similarity). In addition to dopamine, also acts as a receptor for tryptophan-derived metabolites in intestinal epithelial cells: activation by tryptophan metabolites produced by the gut microbiota initiates a phospholipase-C-dependent signaling that promotes colonization resistance by pathogens by controlling actin cytoskeletal organization in the gut epithelium (By similarity). Positively regulates postnatal regression of retinal hyaloid vessels via suppression of VEGFR2/KDR activity, downstream of OPN5 (By similarity). Also acts as a receptor for D-lysergic (LSD) psychedelic drug (PubMed:40683247).
Cellular Location	Postsynaptic cell membrane {ECO:0000250|UniProtKB:P61169}; Multi-pass membrane protein. Cell membrane; Multi-pass membrane protein. Golgi apparatus membrane; Multi-pass membrane protein. Note=Mainly active on postsynaptic membrane (By similarity). Specifically localizes to special plasma membrane microcompartments (PubMed:23493394) {ECO:0000250|UniProtKB:P61169, ECO:0000269|PubMed:23493394}
Tissue Location	[Isoform 1]: Expressed in the anterior pituitary gland.

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