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DRD2 Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP16740b

Product Information

Application	WB, E
Primary Accession	P14416
Other Accession	NP_057658.2, NP_000786.1
Reactivity	Human, Mouse
Predicted	Rat, Bovine, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB36373
Calculated MW	50619
Antigen Region	307-336

Additional Information

Gene ID	1813
Other Names	D(2) dopamine receptor, Dopamine D2 receptor, DRD2
Target/Specificity	This DRD2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 307-336 amino acids from the C-terminal region of human DRD2.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	DRD2 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

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.

Background

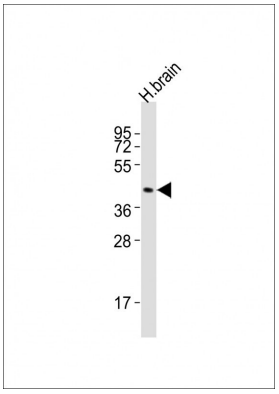
This gene encodes the D2 subtype of the dopamine receptor. This G-protein coupled receptor inhibits adenylyl cyclase activity. A missense mutation in this gene causes myoclonus dystonia; other mutations have been associated with schizophrenia. Alternative splicing of this gene results in two transcript 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.

References

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Borroto-Escuela, D.O., et al. Biochem. Biophys. Res. Commun. 401(4):605-610(2010)

Stelzel, C., et al. J. Neurosci. 30(42):14205-14212(2010)
Huang, H.Y., et al. J. Formos. Med. Assoc. 109(10):736-739(2010)
Itokawa, M., et al. J. Pharmacol. Sci. 114(1):1-5(2010)

Images



Anti-DRD2 Antibody (C-term)at 1:2000 dilution + human brain lysates Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution Predicted band size : 51 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

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