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

DRD4 Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8760C

Product Information

Application	WB, IHC-P, FC, E
Primary Accession	P21917
Reactivity	Human, Mouse
Predicted	Bovine, Canine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	43901
Antigen Region	365-391

Additional Information

Gene ID	1815
Other Names	D(4) dopamine receptor, D(2C) dopamine receptor, Dopamine D4 receptor, DRD4
Target/Specificity	This DRD4 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 365-391 amino acids from the Central region of human DRD4.
Dilution	WB~~1:1000 IHC-P~~1:100~500 FC~~1:10~50 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	DRD4 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	DRD4 {ECO:0000303|PubMed:8353495, ECO:0000312|HGNC:HGNC:3025}
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:16423344,

PubMed:1840645, PubMed:27659709, PubMed:29051383, PubMed:37221270, PubMed:7512953, PubMed:7643093, PubMed:8078498, PubMed:8413587). In addition to dopamine, also activated by epinephrine and norepinephrine, and by numerous synthetic agonists and drugs (PubMed:16423344, PubMed:1840645, PubMed:27659709, PubMed:29051383, PubMed:9003072, PubMed:9042615). Ligand 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:16423344, PubMed:27659709, PubMed:29051383, PubMed:7512953, PubMed:7643093). Dopamine receptors can be classified in two categories: (1) DRD4 (together with DRD2 and DRD3) 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:16423344, PubMed:27659709, PubMed:29051383, PubMed:7512953, PubMed:7643093). 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:16423344, PubMed:27659709, PubMed:29051383, PubMed:7512953, PubMed:7643093). DRD4 is expressed in the mesolimbic system of the brain, an area of the brain that regulates emotion and complex behavior (PubMed:37221270). Modulates the circadian rhythm of contrast sensitivity by regulating the rhythmic expression of NPAS2 in the retinal ganglion cells (By similarity).

Cellular Location Cell membrane; Multi-pass membrane protein

Tissue Location Highly expressed in retina. Detected at much lower levels in brain, in amygdala, thalamus, hypothalamus, cerebellum and pituitary.

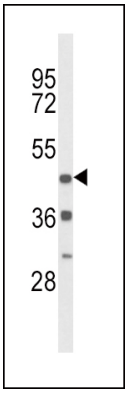
Background

DRD4 is the D4 subtype of the dopamine receptor. The D4 subtype is a G-protein coupled receptor which inhibits adenylyl cyclase. It is a target for drugs which treat schizophrenia and Parkinson disease.

References

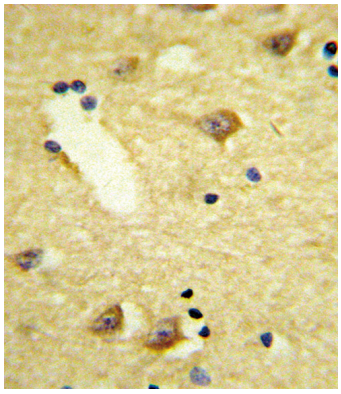
Livingstone,C.D., et.al., Biochem. J. 287 (PT 1), 277-282 (1992)

Images

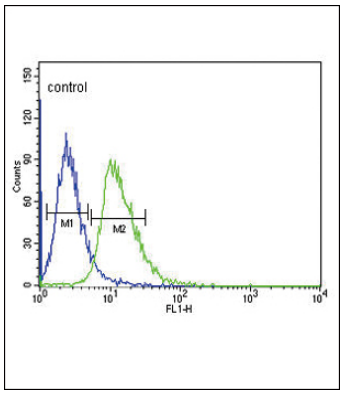


Western blot analysis of DRD4 Antibody (Center) (Cat. #AP8760c) in mouse heart tissue lysates (35ug/lane). DRD4 (arrow) was detected using the purified Pab.

Formalin-fixed and paraffin-embedded human brain



tissue reacted with DRD4 Antibody (Center), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



DRD4 Antibody (Center) (Cat. #AP8760c) flow cytometric analysis of CEM cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Citations

- Loss of cone cyclic nucleotide-gated channel leads to alterations in light response modulating system and cellular stress response pathways: a gene expression profiling study.

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