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Anti-CDK4 Antibody (Monoclonal, DCS-31)

Catalog # ABO10415

Product Information

Application	WB, ICC
Primary Accession	P35462
Host	Mouse
Isotype	Mouse IgG2a
Reactivity	Human, Mouse, Rat
Clonality	Monoclonal
Format	Lyophilized
Description	Mouse IgG monoclonal antibody for CDK4, cyclin-dependent kinase 4 (CDK4) detection. Tested with WB, ICC in Human;mouse;rat. No cross reactivity with other proteins.
Reconstitution	Add 1ml of PBS buffer will yield a concentration of 100ug/ml.

Additional Information

Gene ID	1814
Other Names	D(3) dopamine receptor, Dopamine D3 receptor, DRD3
Calculated MW	44195
Application Details	Immunocytochemistry , 1 □g/ml, Human, mouse, rat, - Western blot, 0.5-1 □g/ml, Human, mouse, rat
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	Cyclin-dependent kinase 4
Contents	Mouse ascites fluid, 1.2% sodium acetate, 2mg BSA, with 0.01mg NaN3 as preservative.
Clone Names	DCS-31
Immunogen	Recombinant human Cdk4 protein.

Purification	Ascites
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 protein kinase superfamily. CMGC Ser/Thr protein kinase family. CDC2/CDKX subfamily.

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..

Background

Cyclin-dependent kinase-4(CDK4) is a protein-serine kinase involved in the cell cycle. Human cell division is regulated primarily at the G1-to-S or the G2-to-M boundaries within the cell cycle. The complexes formed by CDK4 and the D-type cyclins are involved in the control of cell proliferation during the G1 phase. CDK4 is inhibited by p16, also known as cyclin-dependent kinase inhibitor-2. CDK4 is mapped to 12q14. CDK4 expression and activity are required for cytokine responsiveness in T cells.

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