

Mouse anti-Human, mouse CDK5 Monoclonal Antibody | anti-CDK5 antibody

CDK5 Antibody

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA283523	Mouse	Human, mouse	Immunohistochemistry, ELISA, Western Blot

PRODUCT SYNONYMS

CDK5; Monoclonal Antibody; CDK5 Antibody; Cyclin-dependent-like kinase 5; Cell division protein kinase 5; Serine/threonine-protein kinase PSSALRE; Tau protein kinase II catalytic subunit; TPKII catalytic subunit; CDKN5; anti-CDK5 antibody

PRODUCT SPECIFICATIONS

Host	Mouse
Reactivity	Human, mouse
Clonality	Monoclonal
Isotype	IgG1,kappa
Clone Number	1321CT281.130.129
Specificity	This antibody is generated from a mouse immunized with a KLH conjugated synthetic peptide between 160-286 amino acids from human.
Purity/Purification	This antibody is purified through a protein G column, followed by dialysis against PBS.
Form/Format	Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide.
Sequence Length	260
Applicable Applications for anti-CDK5 antibody	IHC (Immunohistochemistry), ELISA, WB (Western Blot)
Cellular Location	[Isoform 1]: Cytoplasm. Nucleus Cell membrane; Peripheral membrane protein. Perikaryon. Cell projection, lamellipodium {ECO:0000250 UniProtKB:P49615}. Cell projection, growth cone {ECO:0000250 UniProtKB:P49615}. Postsynaptic density {ECO:0000250 UniProtKB:Q03114}. Synapse {ECO:0000250 UniProtKB:Q03114} Note=In axonal growth cone with extension to the peripheral lamellipodia (By similarity). Under neurotoxic stress and neuronal injury conditions, CDK5R (p35) is cleaved by calpain to generate CDK5R1 (p25) in response to increased intracellular calcium. The elevated level of p25, when in complex with CDK5, leads to its subcellular misallocation as well as its hyperactivation. Colocalizes with CTNND2 in the cell body of neuronal cells, and with CTNNB1 in the cell-cell contacts and plasma membrane of undifferentiated and differentiated neuroblastoma cells. Reversibly attached to the plasma membrane in an inactive form when complexed to dephosphorylated p35 or CDK5R2 (p39), p35 phosphorylation releases this attachment and activates CDK5.
Tissue Location	[Isoform 1]: Ubiquitously expressed (PubMed:17009320, PubMed:19693690). Accumulates in cortical neurons (at protein level) (PubMed:17009320).
Preparation and 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.



IHC (Immunohistochemistry)
Immunohistochemical analysis of paraffin-embedded Human Colorectal section using Pink1(Cat#AAA283523). AAA283523 was diluted at 1:250 dilution. A undiluted biotinylated goat polyvalent antibody was used as the secondary, followed by DAB staining.



WB (Western Blot)
Western blot analysis of lysates from HeLa cell line and mouse brain tissue lysate (from left to right) using CDK5 Antibody. AAA283523 was diluted at 1:1000 at each lane. A goat anti-mouse IgG H&L(HRP) at 1:3000 dilution was used as the secondary antibody. Lysates at 35ug per lane.

ADDITIONAL INFORMATION

Related Product Information for anti-CDK5 antibody	<p>Proline-directed serine/threonine-protein kinase essential for neuronal cell cycle arrest and differentiation and may be involved in apoptotic cell death in neuronal diseases by triggering abortive cell cycle re-entry. Interacts with D1 and D3-type G1 cyclins. Phosphorylates SRC, NOS3,VIM/vimentin, p35/CDK5R1, MEF2A, SIPA1L1, SH3GLB1, PXN, PAK1, MCAM/MUC18, SEPT5, SYN1, DNM1, AMPH, SYNJ1, CDK16, RAC1, RHOA, CDC42, TONEBP/NFAT5, MAPT/TAU, MAP1B, histone H1, p53/TP53, HDAC1, APEX1, PTK2/FAK1, huntingtin/HTT, ATM, MAP2, NEFH and NEFM. Regulates several neuronal development and physiological processes including neuronal survival, migration and differentiation, axonal and neurite growth, synaptogenesis, oligodendrocyte differentiation, synaptic plasticity and neurotransmission, by phosphorylating key proteins. Negatively regulates the CACNA1B/CAV2.2 -mediated Ca(2+) release probability at hippocampal neuronal soma and synaptic terminals (By similarity). Activated by interaction with CDK5R1 (p35) and CDK5R2 (p39), especially in postmitotic neurons, and promotes CDK5R1 (p35) expression in an autostimulation loop. Phosphorylates many downstream substrates such as Rho and Ras family small GTPases (e.g. PAK1, RAC1, RHOA, CDC42) or microtubule-binding proteins (e.g. MAPT/TAU, MAP2, MAP1B), and modulates actin dynamics to regulate neurite growth and/or spine morphogenesis. Phosphorylates also exocytosis associated proteins such as MCAM/MUC18, SEPT5, SYN1, and CDK16/PCTAIRE1 as well as endocytosis associated proteins such as DNM1, AMPH and SYNJ1 at synaptic terminals. In the mature central nervous system (CNS), regulates neurotransmitter movements by phosphorylating substrates associated with neurotransmitter release and synapse plasticity; synaptic vesicle exocytosis, vesicles fusion with the presynaptic membrane, and endocytosis. Promotes cell survival by activating anti- apoptotic proteins BCL2 and STAT3, and negatively regulating of JNK3/MAPK10 activity. Phosphorylation of p53/TP53 in response to genotoxic and oxidative stresses enhances its stabilization by preventing ubiquitin ligase-mediated proteasomal degradation, and induces transactivation of p53/TP53 target genes, thus regulating apoptosis. Phosphorylation of p35/CDK5R1 enhances its stabilization by preventing calpain-mediated proteolysis producing p25/CDK5R1 and avoiding ubiquitin ligase-mediated proteasomal degradation. During aberrant cell-cycle activity and DNA damage, p25/CDK5 activity elicits cell-cycle activity and double-strand DNA breaks that precedes neuronal death by deregulating HDAC1. DNA damage triggered phosphorylation of huntingtin/HTT in nuclei of neurons protects neurons against polyglutamine expansion as well as DNA damage mediated toxicity. Phosphorylation of PXN reduces its interaction with PTK2/FAK1 in matrix-cell focal adhesions (MCFA) during oligodendrocytes (OLs) differentiation. Negative regulator of Wnt/beta-catenin signaling pathway. Activator of the GAIT (IFN-gamma-activated inhibitor of translation) pathway, which suppresses expression of a post- transcriptional regulon of proinflammatory genes in myeloid cells; phosphorylates the linker domain of glutamyl-prolyl tRNA synthetase (EPRS) in a IFN-gamma-dependent manner, the initial event in assembly of the GAIT complex. Phosphorylation of SH3GLB1 is required for autophagy induction in starved neurons. Phosphorylation of TONEBP/NFAT5 in response to osmotic stress mediates its rapid nuclear localization. MEF2 is inactivated by phosphorylation in nucleus in response to neurotoxin, thus leading to neuronal apoptosis. APEX1 AP- endodeoxyribonuclease is repressed by phosphorylation, resulting in accumulation of DNA damage and contributing to neuronal death. NOS3 phosphorylation down regulates NOS3-derived nitrite (NO) levels. SRC phosphorylation mediates its ubiquitin-dependent degradation and thus leads to cytoskeletal reorganization. May regulate endothelial cell migration and angiogenesis via the modulation of lamellipodia formation. Involved in dendritic spine morphogenesis by mediating the EFNA1-EPHA4 signaling. The complex p35/CDK5 participates in the regulation of the circadian clock by modulating the function of CLOCK protein: phosphorylates CLOCK at 'Thr-451' and 'Thr-461' and regulates the transcriptional activity of the CLOCK-BMAL1 heterodimer in association with altered stability and subcellular distribution.</p>
Product Categories/Family for anti-CDK5 antibody	Crown Antibodies; Cancer; Cell Biology; Metabolism; Neuroscience; Signal Transduction

References	<p>Meyerson M.,et al.EMBO J. 11:2909-2917(1992).</p> <p>Meyerson M.,et al.Submitted (FEB-1993) to the EMBL/GenBank/DDBJ databases.</p> <p>Li Q.,et al.Mol. Biol. Rep. 37:2415-2421(2010).</p> <p>Hu X.,et al.Submitted (JUL-2001) to the EMBL/GenBank/DDBJ databases.</p> <p>Kalnine N.,et al.Submitted (MAY-2003) to the EMBL/GenBank/DDBJ databases.</p>
------------	--

NCBI AND UNIPROT INFORMATION

NCBI GI #	256542306
NCBI GeneID	1020
NCBI Accession #	NP_001157882.1
NCBI GenBank Nucleotide #	NM_001164410.2
UniProt Accession #	Q00535; A1XKG3
Molecular Weight	33304
NCBI Official Full Name	cyclin-dependent-like kinase 5 isoform 2
NCBI Official Synonym Full Names	cyclin-dependent kinase 5
NCBI Official Symbol	CDK5
NCBI Official Synonym Symbols	LIS7; PSSALRE
NCBI Protein Information	cyclin-dependent-like kinase 5
UniProt Protein Name	Cyclin-dependent-like kinase 5
UniProt Gene Name	CDK5
UniProt Synonym Gene Names	CDKN5; TPKII catalytic subunit
UniProt Entry Name	CDK5_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.