CDK5 monoclonal antibody

Catalog: MB67064 Host: Mouse Reactivity: Human, Mouse

BackGround:

Cyclin-dependent kinases (CDKs) are serine/threonine kinases that are activated by cyclins and govern eukaryotic cell cycle progression. While CDK5 shares high sequence homology with its family members, it is thought mainly to function in postmitotic neurons to regulate the cytoarchitecture of these cells. Analogous to cyclins, the regulatory subunits p35 and p39 associate with and activate CDK5 despite the lack of sequence homology. CDK5 is ubiquitously expressed, with high levels of kinase activity detected primarily in the nervous system due to the narrow expression pattern of p35 and p39 in post-mitotic neurons. A large number of CDK5 substrates have been identified although no substrates have been specifically attributed to p35 or p39. Substrates of CDK5 include p35, PAK1, Src, β-catenin, tau, neurofilament-H, neurofilament-M, synapsin-1, APP, DARPP32, PP1-inhibitor, and Rb. p35 is rapidly degraded (T1/2 <20 min) by the ubiquitin-proteasome pathway. However, p35 stability increases as CDK5 kinase activity decreases, likely as a result of decreased phosphorylation of p35 at Thr138 by CDK5. Proteolytic cleavage of p35 by calpain produces p25 upon neurotoxic insult, resulting in prolonged activation of CDK5 by p25. Research studies have shown accumulation of p25 in neurodegenerative diseases, such as Alzheimer's disease and amyotrophic lateral sclerosis (ALS).

Product:

Mouse IgG1 kappa. Liquid in PBS, pH 7.3, 30% glycerol, and 0.01% sodium azide.

Molecular Weight:

~ 30 kDa

Swiss-Prot:

Q00535

Purification&Purity:

This antibody is purified through a protein G column.

Applications:

WB (1/500 - 1/1000), IHC (1/50 - 1/200), IF/ICC (1/10 - 1/50), FC (1/10 - 1/50)

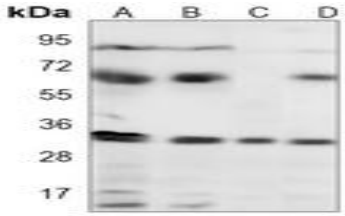
Storage&Stability:

Store at 4℃ short term. Aliquot and store at -20℃ long term. Avoid freeze-thaw cycles.

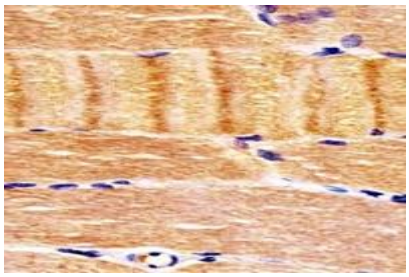
Specificity:

Recognizes endogenous levels of CDK5 protein.

DATA:



Western blot analysis of CDK5 expression in A431 (A), K562 (B), Hela (C), NIH3T3 (D) whole cell lysates.



Immunohistochemical analysis of CDK5 staining in human skeletal muscle formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

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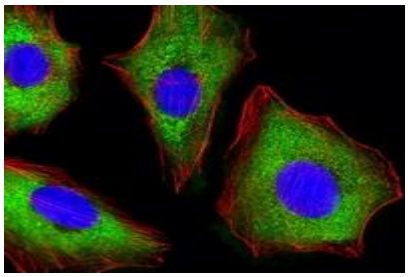
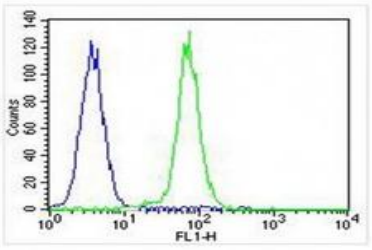


Immunofluorescent analysis of CDK5 staining in A549 cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 ℃ in a humidified chamber. Cells were washed with PBST and incubated with a AF488-conjugated secondary antibody (green) in PBS at room temperature in the dark. Phalloidin - AF555 was used to stain the cytoplasm (red). DAPI was used to stain the cell nuclei (blue).



Note:

For research use only, not for use in diagnostic procedure.

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