

#2506 Store at -20°C

CDK5 Antibody

100 µl
 (10 western blots)



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This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Entrez-Gene ID # 1020
Swiss-Prot Acc. # Q00535

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IP Endogenous	H, M, R	30 kDa	Rabbit**

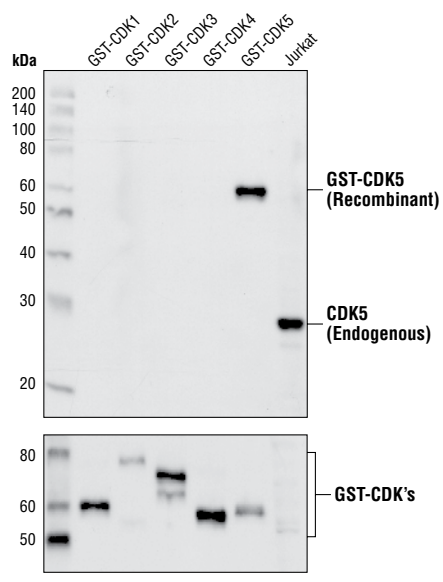
Background: Cyclin-dependent kinases (CDKs) are serine/threonine kinases that are activated by cyclins and govern eukaryotic cell cycle progression. While CDK5 shares high sequence homology with its family members, it is thought mainly to function in postmitotic neurons, regulating the cytoarchitecture of these cells. Analogous to cyclins, p35 and p39 associate with and activate CDK5 despite the lack of sequence homology. CDK5 is ubiquitously expressed, but high levels of kinase activity are 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 discrete substrates have been attributed as a function of p35 vs. p39. Amongst many, substrates of CDK5 include p35, PAK1, Src, β-catenin, Tau, Neurofilament-H, Neurofilament-M, Synapsin1, APP, DARPP32, PP1-inhibitor and Rb. p35 is rapidly degraded ($T_{1/2} < 20$ min) by the ubiquitin-proteasome pathway (1). However, p35 stability increases as CDK5 kinase activity decreases and this is likely a result of decreased phosphorylation of p35 at Thr138 by CDK5 (2). Proteolytic cleavage of p35 by calpain produces p25 upon neurotoxic insult, resulting in prolonged activation of CDK5 by p25. Accumulation of p25 is found in neurodegenerative diseases such as Alzheimer's disease and Amyotrophic Lateral Sclerosis (ALS) (3-4).

Specificity/Sensitivity: CDK5 Antibody detects endogenous levels of total CDK5 protein, recombinant CDK5 but not recombinant CDK1-4 protein.

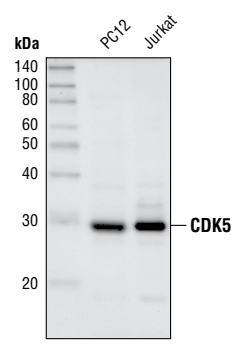
Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to the sequence of human CDK5. Antibodies are purified by protein A and peptide affinity chromatography.

Background References:

- (1) Dhavan, R. and Tsai, L.H. (2001) *Nat. Rev. Mol. Cell Biol.* 2, 749-59.
- (2) Patrick, G.N. et al. (1998) *J. Biol. Chem.* 273, 24057-64.
- (3) Lee, M.S. et al. (2000) *Nature* 405, 360-4.
- (4) Kusakawa, G. et al. (2000) *J. Biol. Chem.* 275, 17166-72.



Western blot analysis of recombinant CDK1-5, using CDK5 Antibody (top) and GST Antibody #2622 (bottom).



Western blot analysis of extracts from PC12 and Jurkat cells, using CDK5 Antibody.

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunoprecipitation	1:50

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

Applications Key: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide
Species Cross-Reactivity Key: H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine
 Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.