

Cdk5 (H-291): sc-750

BACKGROUND

Cell cycle progression is controlled in part by a family of cyclin proteins and cyclin dependent kinases (Cdks). Cdk proteins work in concert with the cyclins to phosphorylate key substrates involved in each phase of cell cycle progression. Another family of proteins, Cdk inhibitors, also plays a role in regulating cell cycle by binding to cyclin-Cdk complexes and modulating their activity. Several Cdk proteins have been identified, including Cdk2-Cdk8, PCTAIRE-1-3, PITALRE and PITSLRE. Cdk5 is thought to be involved in the G₁-S transition of the cell cycle and is highly expressed in mature neurons. Activity of Cdk5 increases significantly during neuronal differentiation. Cdk5 has been postulated to be a neurofilament or tau protein kinase, based on its ability to phosphorylate these proteins *in vitro*.

REFERENCES

- Okuda, T., et al. 1992. PCTAIRE-1 and PCTAIRE-3, two members of a novel cdc2/CDC28-related protein kinase gene family. *Oncogene* 7: 2249-2258.
- Pines, J. 1994. The cell cycle kinases. *Semin. Cancer Biol.* 5: 305-313.

CHROMOSOMAL LOCATION

Genetic locus: CDK5 (human) mapping to 7q36.1; Cdk5 (mouse) mapping to 5 A3.

SOURCE

Cdk5 (H-291) is a rabbit polyclonal antibody raised against amino acids 1-291 representing full length Cdk5 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Cdk5 (H-291) is recommended for detection of Cdk5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Cdk5 (H-291) is also recommended for detection of Cdk5 in additional species, including equine, bovine, porcine and avian.

Suitable for use as control antibody for Cdk5 siRNA (h): sc-29263, Cdk5 siRNA (m): sc-35047, Cdk5 shRNA Plasmid (h): sc-29263-SH, Cdk5 shRNA Plasmid (m): sc-35047-SH, Cdk5 shRNA (h) Lentiviral Particles: sc-29263-V and Cdk5 shRNA (m) Lentiviral Particles: sc-35047-V.

Molecular Weight of Cdk5: 35 kDa.

Positive Controls: NIH/3T3 nuclear extract: sc-2138, RAW 264.7 nuclear extract: sc-24961 or MM-142 nuclear extract: sc-2139.

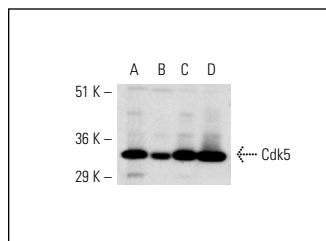
RESEARCH USE

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

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



Cdk5 (H-291): sc-750. Western blot analysis of Cdk5 expression in NIH/3T3 (A), RAW 264.7 (B), MM-142 (C) and WEHI-231 (D) nuclear extracts.

SELECT PRODUCT CITATIONS

- Belyavskiy, M., et al. 1998. The structural protein ODV-EC27 of *Autographa californica* nucleopolyhedrovirus is a multifunctional viral cyclin. *Proc. Natl. Acad. Sci. USA* 95: 11205-11210.
- Van den Haute, C., et al. 2001. Coexpression of human Cdk5 and its activator p35 with human protein Tau in neurons in brain of triple transgenic mice. *Neurobiol. Dis.* 8: 32-44.
- Khalili, K., et al. 2003. Puralpha is essential for postnatal brain development and developmentally coupled cellular proliferation as revealed by genetic inactivation in the mouse. *Mol. Cell. Biol.* 23: 6857-6875.
- Lin, H., et al. 2007. Cdk5 regulates Stat3 activation and cell proliferation in medullary thyroid carcinoma cells. *J. Biol. Chem.* 282: 2776-2784.
- Lin, H., et al. 2007. Abl deregulates Cdk5 kinase activity and subcellular localization in *Drosophila* neurodegeneration. *Cell Death Differ.* 14: 607-615.
- Wen, Y., et al. 2007. Cdk5 is involved in NFT-like tauopathy induced by transient cerebral ischemia in female rats. *Biochim. Biophys. Acta* 1772: 473-483.
- Barroso, E., et al. 2013. Tau hyperphosphorylation and increased BACE1 and RAGE levels in the cortex of PPARβ/δ-null mice. *Biochim. Biophys. Acta* 1832: 1241-1248.
- Maurin, H., et al. 2014. Terminal hypothermic Tau.P301L mice have increased Tau phosphorylation independently of glycogen synthase kinase 3α/β. *Eur. J. Neurosci.* 40: 2442-2453.



Try **Cdk5 (J-3): sc-6247** or **Cdk5 (DC 17): sc-249**, our highly recommended monoclonal alternatives to Cdk5 (H-291). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **Cdk5 (J-3): sc-6247**.