

Cdk5 (C-8): sc-173

BACKGROUND

Cell cycle progression is controlled in part by a family of cyclin proteins and cyclin dependent kinases (Cdk). 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 the cell cycle by binding to cyclin-Cdk complexes and modulating their activity. Several Cdk proteins have been identified, including Cdk2-Cdk8, PCTAIRE-1-3, PITARE 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*.

CHROMOSOMAL LOCATION

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

SOURCE

Cdk5 (C-8) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of Cdk5 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-173 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as agarose conjugate for immunoprecipitation, sc-173 AC, 500 µg/0.25 ml agarose in 1 ml.

Available as HRP conjugate for Western blotting, sc-173 HRP, 200 µg/1 ml.

APPLICATIONS

Cdk5 (C-8) 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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: Jurkat nuclear extract: sc-2132, K-562 nuclear extract: sc-2130 or HeLa nuclear extract: sc-2120.

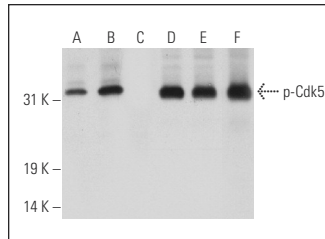
STORAGE

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

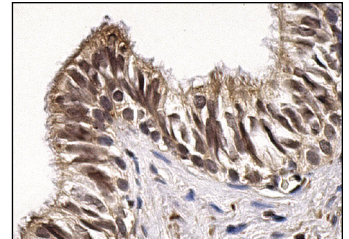
RESEARCH USE

For research only, not for use in diagnostic procedures.

DATA



Western blot analysis of Cdk5 phosphorylation in untreated (A, D), calyculin A treated (B, E) and calyculin A and lambda protein phosphatase treated (C, F) SH-SY5Y whole cell lysates. Antibodies tested include p-Cdk5 (Tyr 15)-R: sc-12918-R (A, B, C) and Cdk5 (C-8): sc-173 (D, E, F).



Cdk5 (C-8): sc-173. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear staining of cells in seminiferous ducts.

SELECT PRODUCT CITATIONS

- Fang, F., et al. 1996. Dependence of cyclin E-Cdk2 kinase activity on cell anchorage. *Science* 271: 499-502.
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- Huang, E., et al. 2010. The role of Cdk5-mediated apurinic/apyrimidinic endonuclease 1 phosphorylation in neuronal death. *Nat. Cell Biol.* 12: 563-571.
- Mao, D., et al. 2010. p35 is required for CDK5 activation in cellular senescence. *J. Biol. Chem.* 285: 14671-14680.
- Gao, Z., et al. 2011. Serine phosphorylation regulates disabled-1 early isoform turnover independently of Reelin. *Cell. Signal.* 23: 555-565.
- Crews, L., et al. 2011. Modulation of aberrant CDK5 signaling rescues impaired neurogenesis in models of Alzheimer's disease. *Cell Death Dis.* 2: e120.
- Park, S.S., et al. 2012. Asp664 cleavage of amyloid precursor protein induces tau phosphorylation by decreasing protein phosphatase 2A activity. *J. Neurochem.* 123: 856-865.
- Mendoza-Naranjo, A., et al. 2012. Fibrillar amyloid-β1-42 modifies actin organization affecting the cofilin phosphorylation state: a role for Rac1/cdc42 effector proteins and the slingshot phosphatase. *J. Alzheimers Dis.* 29: 63-77.


 MONOS
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