

p-Cdk5 (Ser 159): sc-12919

BACKGROUND

Cyclin-dependent kinase 5 (Cdk5) is found in its active form only in neuronal cells. Like other members of the Cdk family, Cdk5 catalytic activity is influenced by both p35 binding and phosphorylation. The Serine 159 residue is the major phosphorylation target for Cdk5-activating kinases. Cdk5 requires both p35 binding and phosphorylation at Serine 159 for maximal rates of activation. In addition, casein kinase I, but not casein kinase II, can phosphorylate and activate Cdk5 *in vitro*. Phosphorylation of Cdk5 by c-Abl occurs on Tyrosine 15 and enhances p35/Cdk5 kinase activity. Active c-Abl kinase leads to Cdk5 tyrosine phosphorylation, and this phosphorylation is enhanced by Cdk5 and Abl enzyme substrate (CABLES). Phosphorylation of either Serine 159 or Tyrosine 15 dramatically increases Cdk5 activation.

CHROMOSOMAL LOCATION

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

SOURCE

p-Cdk5 (Ser 159) is available as either goat (sc-12919) or rabbit (sc-12919-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing Ser 159 phosphorylated Cdk5 of human origin.

PRODUCT

Each vial contains either 100 µg (sc-12919) or 200 µg (sc-12919-R) IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12919 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-Cdk5 (Ser 159) is recommended for detection of Ser 159 phosphorylated 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 p-Cdk5: 35 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, A-431 + EGF whole cell lysate: sc-2202 or A-431 whole cell lysate: sc-2201.

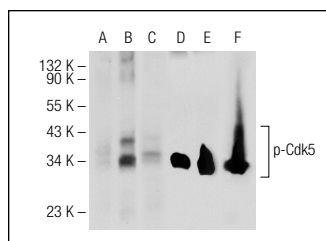
STORAGE

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

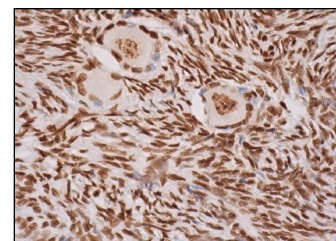
RESEARCH USE

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

DATA



Western blot analysis of Cdk5 phosphorylation in untreated (A, D), nocodazole treated (B, E) and nocodazole and lambda protein phosphatase treated (C, F) SK-N-SH whole cell lysates. Antibodies tested include p-Cdk5 (Ser 159)-R: sc-12919-R (A, B, C) and Cdk5 (C-8): sc-173 (D, E, F).



p-Cdk5 (Ser 159)-R: sc-12919-R. Immunoperoxidase staining of formalin fixed, paraffin-embedded human ovary tissue showing nuclear staining of follicle cells and ovarian stroma cells.

SELECT PRODUCT CITATIONS

1. Narita, M., et al. 2005. Implication of cyclin-dependent kinase 5 in the development of psychological dependence on and behavioral sensitization to morphine. *J. Neurochem.* 93: 1463-1468.
2. Wang, Y.P., et al. 2006. Aberrant activation of CDK5 is involved in the pathogenesis of OPIIDN. *J. Neurochem.* 99: 186-197.
3. Lin, H., et al. 2007. Abl deregulates Cdk5 kinase activity and subcellular localization in *Drosophila* neurodegeneration. *Cell Death Differ.* 14: 607-615.
4. Ding, Y., et al. 2008. Retinoic acid attenuates β -Amyloid deposition and rescues memory deficits in an Alzheimer's disease transgenic mouse model. *J. Neurosci.* 28: 11622-11634.
5. Varrin-Doyer, M., et al. 2009. Phosphorylation of collapsin response mediator protein 2 on Tyr-479 regulates CXCL12-induced T lymphocyte migration. *J. Biol. Chem.* 284: 13265-13276.
6. Park, H.J., et al. 2009. Effects of electroconvulsive shock on the phosphorylation of DARPP-32 in rat striatum. *Psychiatry Res.* 170: 91-95.
7. Ding, Y., et al. 2010. Indirubin-3'-monoxime rescues spatial memory deficits and attenuates β -amyloid-associated neuropathology in a mouse model of Alzheimer's disease. *Neurobiol. Dis.* 39: 156-168.
8. Czapski, G.A., et al. 2011. Alterations of cyclin dependent kinase 5 expression and phosphorylation in amyloid precursor protein (APP)-transfected PC12 cells. *FEBS Lett.* 585: 1243-1248.

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Try **p-Cdk5 (C-7): sc-377558**, our highly recommended monoclonal alternative to p-Cdk5 (Ser 159).