SANTA CRUZ BIOTECHNOLOGY, INC.

p-Cdk5 (C-7): sc-377558

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 (C-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 142-171 of Cdk5 of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-377558 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

p-Cdk5 (C-7) is recommended for detection of Ser 159 phosphorylated Cdk5 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

p-Cdk5 (C-7) is also recommended for detection of correspondingly phosphorylated Cdk5 in additional species, including equine, bovine and porcine.

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.

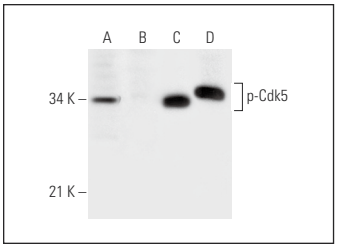
STORAGE

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**,**C**) and lambda protein phosphatase (sc-200312A) treated (**B**,**D**) SK-N-MC whole cell lysates. Antibodies tested include p-Cdk5 (C-7): sc-377558 (**A**,**B**) and Cdk5 (J-3): sc-6247 (**C**,**D**).

SELECT PRODUCT CITATIONS

1. Shen, J., et al. 2018. Purα repaired expanded hexanucleotide GGGGCC repeat noncoding RNA-caused neuronal toxicity in Neuro-2A cells. Neurotox. Res. 33: 693-701.
2. He, H., et al. 2019. Amyotrophic lateral sclerosis-associated GGGGCC repeat expansion promotes Tau phosphorylation and toxicity. Neurobiol. Dis. 130: 104493.
3. Kodani, A., et al. 2020. Posterior neocortex-specific regulation of neuronal migration by CEP85L identifies maternal centriole-dependent activation of Cdk5. Neuron 106: 246-255.e6.
4. Paschoal, V.A., et al. 2020. Positive reinforcing mechanisms between GPR120 and PPARγ modulate Insulin sensitivity. Cell Metab. 31: 1173-1188.e5.
5. Rao, S.S., et al. 2020. The iron chelator deferiprone improves the phenotype in a mouse model of tauopathy. J. Alzheimers Dis. 78: 1783.
6. Ju, Y. and Tam, K.Y. 2020. 9R, the cholinesterase and Amyloid β aggregation dual inhibitor, as a multifunctional agent to improve cognitive deficit and neuropathology in the triple-transgenic Alzheimer's disease mouse model. Neuropharmacology 181: 108354.
7. Qi, F., et al. 2023. VEGF-A in serum protects against memory impairment in APP/PS1 transgenic mice by blocking neutrophil infiltration. Mol. Psychiatry 28: 4374-4389.
8. Ren, Y., et al. 2024. CDK5-USP30 signaling pathway regulates MAVS-mediated inflammation via suppressing mitophagy in MPTP/MPP+ PD model. Ecotoxicol. Environ. Saf. 279: 116446.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.