

## p39 (D-9): sc-374030



The Power to Question

## BACKGROUND

Cyclin dependent kinases, known as Cdks, regulate transitions in the eukaryotic cell cycle. Cdk 5 is required for proper development of the mammalian central nervous system and is predominantly expressed in neurons. Neuronal Cdk5 can be activated by two accessory proteins designated p35<sup>nck5a</sup> and p39<sup>nck5ai</sup>, which is also known as p39. The human p39 gene maps to chromosome 2q35 and encodes a 367-amino acid protein. p35 and p39 both share limited similarity to cyclins and may define a distinct family of cyclin-dependent kinase activating proteins. During embryonic rat brain development, the expression pattern of p39 appears to have an inverse relationship to that of Cdk5 and p35, suggesting that these proteins may have region-specific and developmental stage-specific functions in rat brain. p39 can localize to lamellipodial and filopodial structures of cells and in growth cones of neurons. In addition, p39 can colocalize with actin, suggesting that p39 plays a role in regulating actin cytoskeletal dynamics in cells. The temporal and spatial expression of p39 in synaptic junctions indicates a possible role of the p39/cdk5 kinase at the synapse.

## REFERENCES

1. Tang, D., et al. 1995. An isoform of the neuronal cyclin-dependent kinase 5 (Cdk5) activator. *J. Biol. Chem.* 270: 26897-26903.
2. Cai, X.H., et al. 1997. Changes in the expression of novel Cdk5 activator messenger RNA (p39<sup>nck5ai</sup> mRNA) during rat brain development. *Neurosci. Res.* 28: 355-360.
3. Honjyo, Y., et al. 1999. Immunohistochemical localization of Cdk5 activator p39 in the rat brain. *Neuroreport* 10: 3375-3379.
4. Wu, D.C., et al. 2000. The expression of Cdk5, p35, p39, and Cdk5 kinase activity in developing, adult, and aged rat brains. *Neurochem. Res.* 25: 923-929.
5. Humbert, S., et al. 2000. Synaptic localization of p39, a neuronal activator of Cdk5. *Neuroreport* 11: 2213-2216.
6. Ko, J., et al. 2001. p35 and p39 are essential for cyclin-dependent kinase 5 function during neurodevelopment. *J. Neurosci.* 21: 6758-6761.
7. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 603764. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
8. LocusLink Report (LocusID: 8941). <http://www.ncbi.nlm.nih.gov/LocusLink/>

## CHROMOSOMAL LOCATION

Genetic locus: CDK5R2 (human) mapping to 2q35; Cdk5r2 (mouse) mapping to 1 C3.

## SOURCE

p39 (D-9) is a mouse monoclonal antibody raised against amino acids 6-75 mapping near the N-terminus of p39 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

p39 (D-9) is recommended for detection of p39 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).

Suitable for use as control antibody for p39 siRNA (h): sc-42156, p39 siRNA (m): sc-42157, p39 shRNA Plasmid (h): sc-42156-SH, p39 shRNA Plasmid (m): sc-42157-SH, p39 shRNA (h) Lentiviral Particles: sc-42156-V and p39 shRNA (m) Lentiviral Particles: sc-42157-V.

Molecular Weight of p39: 39 kDa.

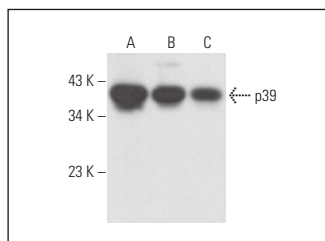
Positive Controls: mouse cerebellum extract: sc-2403, rat brain extract: sc-2392 or mouse brain extract: sc-2253.

## RECOMMENDED SUPPORT REAGENTS

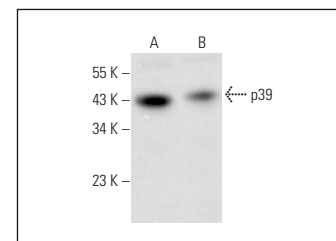
To ensure optimal results, the following support reagents are recommended:

- 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



p39 (D-9): sc-374030. Western blot analysis of p39 expression in mouse brain (A), rat brain (B) and rat hippocampus (C) tissue extracts.



p39 (D-9): sc-374030. Western blot analysis of p39 expression in mouse brain (A) and mouse cerebellum (B) tissue extracts.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.