

DCAMKL1 (D-3): sc-514684

BACKGROUND

Lissencephaly (smooth brain) is an abnormality of brain development characterized by incomplete neuronal migration and a smooth cerebral surface, manifesting as severe mental retardation. Genetic analysis has identified two proteins that are mutated in some cases of lissencephaly, designated lissencephaly-1 protein (LIS1) and doublecortin. LIS1 displays sequence homology to β -subunits of heterotrimeric G proteins, and doublecortin contains a consensus Abl phosphorylation site. In addition, the DCAMKL1 (doublecortin-like and CAM kinase-like 1) protein shows homology to doublecortin. All three proteins are highly expressed in developing brain and may function together to regulate microtubules involved in neuronal migration. The DCAMKL1 protein encodes a functional kinase that is capable of phosphorylating myelin basic protein and itself, but its kinase activity does not appear to affect its microtubule polymerization activity.

REFERENCES

1. Reiner, O., et al. 1993. Isolation of a Miller-Dieker lissencephaly gene containing G protein β -subunit-like repeats. *Nature* 364: 717-721.
2. Garcia-Higuera, I., et al. 1996. Folding of proteins with WD-repeats: comparison of six members of the WD-repeat superfamily to the G protein β subunit. *Biochemistry* 35: 13985-13994.
3. Albrecht, U., et al. 1996. Platelet-activating factor acetylhydrolase expression and activity suggest a link between neuronal migration and platelet-activating factor. *Dev. Biol.* 180: 579-593.
4. Walsh, C.A. 1998. LISsen up! *Nat. Genet.* 19: 307-308.
5. des Portes, V., et al. 1998. A novel CNS gene required for neuronal migration and involved in X-linked subcortical laminar heterotopia and lissencephaly syndrome. *Cell* 92: 51-61.

CHROMOSOMAL LOCATION

Genetic locus: DCLK1 (human) mapping to 13q13.3; Dclk1 (mouse) mapping to 3 C.

SOURCE

DCAMKL1 (D-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 19-38 at the N-terminus of DCAMKL1 of mouse origin.

PRODUCT

Each vial contains 200 μ g IgM 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-514684 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

DCAMKL1 (D-3) is recommended for detection of DCAMKL1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 DCAMKL1 siRNA (h): sc-45618, DCAMKL1 siRNA (m): sc-45619, DCAMKL1 shRNA Plasmid (h): sc-45618-SH, DCAMKL1 shRNA Plasmid (m): sc-45619-SH, DCAMKL1 shRNA (h) Lentiviral Particles: sc-45618-V and DCAMKL1 shRNA (m) Lentiviral Particles: sc-45619-V.

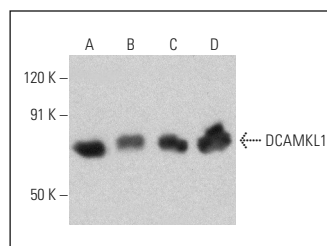
Molecular Weight of DCAMKL1: 82 kDa.

Positive Controls: Neuro-2A whole cell lysate: sc-364185, mouse brain extract: sc-2253 or rat brain extract: sc-2392.

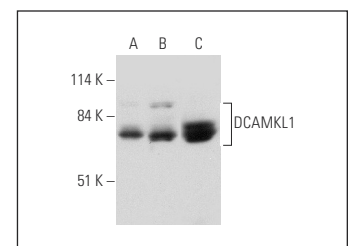
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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 L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



DCAMKL1 (D-3): sc-514684. Western blot analysis of DCAMKL1 expression in Neuro-2A (A), H4 (B), NIH/3T3 (C) and c4 (D) whole cell lysates.



DCAMKL1 (D-3): sc-514684. Western blot analysis of DCAMKL1 expression in rat brain (A) and mouse brain (B) tissue extracts and Neuro-2A whole cell lysate (C).

RESEARCH USE

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



See **Doublecortin (E-6): sc-271390** for Doublecortin antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647.