SANTA CRUZ BIOTECHNOLOGY, INC.

DCAMKL1 (L-5): sc-100324

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., Carrozzo, R., Shen, Y., Wehnert, M., Faustinella, F., Dobyns, W.B., Caskey, C.T. and Ledbetter, D.H. 1993. Isolation of a Miller-Dieker lissencephaly gene containing G protein β-subunit-like repeats. Nature 364: 717-721.
2. Garcia-Higuera, I., Fenoglio, J., Li, Y., Lewis, C., Panchenko, M.P., Reiner, O., Smith, T.F. and Neer, E.J. 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., Abu-Issa, R., Rätz, B., Hattori, M., Aoki, J., Arai, H., Inoue, K. and Eichele, G. 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., Pinard, J.M., Billuart, P., Vinet, M.C., Koulakoff, A., Carrié, A., Gelot, A., Dupuis, E., Motte, J., Berwald-Netter, Y., Catala, M., Kahn, A., Beldjord, C. and Chelly, J. 1998. A novel CNS gene required for neuronal migration and involved in X-linked subcortical laminar heterotopia and lissencephaly syndrome. Cell 92: 51-61.
6. Gleeson, J.G., Allen, K.M., Fox, J.W., Lamperti, E.D., Berkovic, S., Scheffer, I., Cooper, E.C., Dobyns, W.B., Minnerath, S.R., Ross, M.E. and Walsh, C.A. 1998. Doublecortin, a brain-specific gene mutated in human X-linked lissencephaly and double cortex syndrome, encodes a putative signaling protein. Cell 92: 63-72.

CHROMOSOMAL LOCATION

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

SOURCE

DCAMKL1 (L-5) is a mouse monoclonal antibody raised against recombinant DCAMKL1 of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 50 >µg IgG_{2b} in 500 >µl PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

DCAMKL1 (L-5) is recommended for detection of DCAMKL1 of mouse 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) 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.

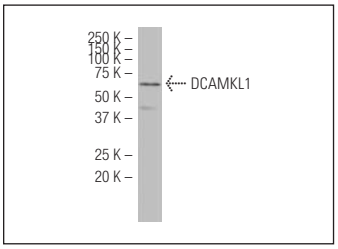
Molecular Weight of DCAMKL1: 82 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210.

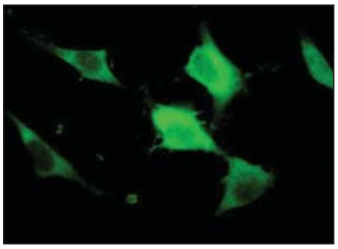
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



DCAMKL1 (L-5): sc-100324. Western blot analysis of DCAMKL1 expression in NIH/3T3 whole cell lysate.



DCAMKL1 (L-5): sc-100324. Immunofluorescence staining of paraformaldehyde-fixed NIH/3T3 cells showing cytoplasmic localization.

STORAGE

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