SANTA CRUZ BIOTECHNOLOGY, INC.

DCAMKL2 siRNA (m): sc-105273

BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including cell division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the serine/threonine (Ser/Thr) protein kinases. DCAMKL2, also known as DCLK2 (doublecortin-like kinase 2), DCK2, DCDC3 or DCDC3B, is a 766 amino acid protein that contains one protein kinase domain and two Doublecortin domains. One of several members of the Ser/Thr protein kinase family, DCAMKL2 functions to catalyze the ATP-dependent attachment of a phospho residue to target proteins, an event that may play a role in various cellular processes. Multiple isoforms of DCAMKL2 exist due to alternative splicing events.

REFERENCES

1. Bairoch, A., et al. 1988. Sequence patterns in protein kinases. Nature 331: 22.
2. Hanks, S.K., et al. 1988. The protein kinase family: conserved features and deduced phylogeny of the catalytic domains. Science 241: 42-52.
3. Hanks, S.K., et al. 1991. Protein kinase catalytic domain sequence database: identification of conserved features of primary structure and classification of family members. Methods Enzymol. 200: 38-62.
4. Sapir, T., et al. 2000. Doublecortin mutations cluster in evolutionarily conserved functional domains. Hum. Mol. Genet. 9: 703-712.
5. Edelman, A.M., et al. 2005. Doublecortin kinase-2, a novel doublecortin-related protein kinase associated with terminal segments of axons and dendrites. J. Biol. Chem. 280: 8531-8543.
6. Ohmae, S., et al. 2006. Molecular identification and characterization of a family of kinases with homology to Ca^{2+}/calmodulin-dependent protein kinases I/IV. J. Biol. Chem. 281: 20427-20439.
7. Koizumi, H. 2007. Physiological function of the DCX family in brain development. Seikagaku 79: 1134-1139.
8. Tuy, F.P., et al. 2008. Alternative transcripts of DCLK1 and DCLK2 and their expression in doublecortin knockout mice. Dev. Neurosci. 30: 171-186.

CHROMOSOMAL LOCATION

Genetic locus: Dclk2 (mouse) mapping to 3 F1.

PRODUCT

DCAMKL2 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see DCAMKL2 shRNA Plasmid (m): sc-105273-SH and DCAMKL2 shRNA (m) Lentiviral Particles: sc-105273-V as alternate gene silencing products.

For independent verification of DCAMKL2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-105273A, sc-105273B and sc-105273C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

DCAMKL2 siRNA (m) is recommended for the inhibition of DCAMKL2 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DCAMKL2 gene expression knockdown using RT-PCR Primer: DCAMKL2 (m)-PR: sc-105273-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

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