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SANTA CRUZ BIOTECHNOLOGY, INC.

Cables1 siRNA (m): sc-41914

BACKGROUND

Normal Abl function is essential for humans because Philadelphia chromosome translocation involving the ABL gene causes chronic myelogenous leukemia. Abl associates with a broad range of targets and appears to function in various signaling pathway. Cables1, a 568 amino acid protein, links Abl to cyclin-dependent kinase 5 (Cdk5). Cables1 bound to Cdk5 functions as a substrate for phosphorylation by the Cdk5/p35 kinase. Cables contains an area of weak homology to cyclin A and cyclin C. In addition to its C-terminal Cdk5 binding domain, Cables1 also has six potential SH3 binding motifs (PXXP) clustered around the amino-terminus, two of which are similar to motifs known to bind the Abl SH3 domain. Cables1 forms a trimolecular complex with Cdk5 and Abl *in vivo*. All three proteins co-localize within cortical axons, particularly in their growth cones. Cables1 and Abl may function as adaptor or scaffolding proteins to bind to Cdk5 and control its subcellular location in the neuron.

REFERENCES

1. Oda, T., et al. 1997. Identification and characterization of two novel SH2 domain-containing proteins from a yeast two hybrid screen with the ABL tyrosine kinase. Oncogene 15: 1255-1262.
2. Van Etten, R.A. 1999. Cycling, stressed-out and nervous: cellular functions of c-Abl. Trends Cell Biol. 9: 179-186.
3. Till, J.H., et al. 1999. Engineering the substrate specificity of the Abl tyrosine kinase. J. Biol. Chem. 274: 4995-5003.
4. Shishido, T., et al. 2000. The kinase-deficient Src acts as a suppressor of the Abl kinase for Cbl phosphorylation. Proc. Natl. Acad. Sci. USA 97: 6439-6444.
5. Cowan, C.A., et al. 2000. More Cables to Abl. Neuron 26: 543-550.
6. Zukerberg, L.R., et al. 2000. Cables links Cdk5 and c-Abl and facilitates Cdk5 tyrosine phosphorylation, kinase upregulation, and neurite outgrowth. Neuron 26: 633-646.

CHROMOSOMAL LOCATION

Genetic locus: Cables1 (mouse) mapping to 18 A1.

PRODUCT

Cables1 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 Cables1 shRNA Plasmid (m): sc-41914-SH and Cables1 shRNA (m) Lentiviral Particles: sc-41914-V as alternate gene silencing products.

For independent verification of Cables1 (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-41914A, sc-41914B and sc-41914C.

PROTOCOLS

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

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

Cables1 siRNA (m) is recommended for the inhibition of Cables1 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.

GENE EXPRESSION MONITORING

Cables1 (D-10): sc-374316 is recommended as a control antibody for monitoring of Cables1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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) 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Cables1 gene expression knockdown using RT-PCR Primer: Cables1 (m)-PR: sc-41914-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.