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Cdc42EP5 siRNA (m): sc-142214

BACKGROUND

Rho GTPases are molecular switches that regulate many essential cellular processes, including Actin dynamics, cell adhesion, cell-cycle progression and transcription. Cdc42, a small GTPase, regulates Actin polymerization, elongation of cell shape and cell signaling through interactions with many different downstream effector proteins, most of which contain a Cdc42-binding motif known as a CRIB domain. Cdc42EP5 (Cdc42 effector protein 5), also known as BORG3 (binder of Rho GTPases 3) or CEP5, is a 148 amino acid peripheral membrane protein that localizes to the cytoplasm. One of several members of the BORG family of Cdc42 effectors, Cdc42EP5 contains one CRIB domain through which it binds to and negatively regulates the function of Cdc42. Additionally, via its interaction with Cdc42, Cdc42EP5 is thought to play a role in Actin cytoskeletal organization, possibly inducing Actin filament assembly and promoting cell shape changes.

REFERENCES

1. Joberty, G., et al. 1999. The Borgs, a new family of Cdc42 and TC10 GTPase-interacting proteins. *Mol. Cell. Biol.* 19: 6585-6597.
2. Hirsch, D.S., et al. 2001. A new family of Cdc42 effector proteins, CEPs, function in fibroblast and epithelial cell shape changes. *J. Biol. Chem.* 276: 875-883.
3. Joberty, G., et al. 2001. Borg proteins control septin organization and are negatively regulated by Cdc42. *Nat. Cell Biol.* 3: 861-866.
4. Kinoshita, M., et al. 2002. Self- and Actin-templated assembly of mammalian septins. *Dev. Cell* 3: 791-802.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609171. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Roberts, P.J., et al. 2008. RHO family GTPase modification and dependence on CAAX motif-signaled posttranslational modification. *J. Biol. Chem.* 283: 25150-25163.

CHROMOSOMAL LOCATION

Genetic locus: Cdc42ep5 (mouse) mapping to 7 A1.

PRODUCT

Cdc42EP5 siRNA (m) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Cdc42EP5 shRNA Plasmid (m): sc-142214-SH and Cdc42EP5 shRNA (m) Lentiviral Particles: sc-142214-V as alternate gene silencing products.

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.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Cdc42EP5 siRNA (m) is recommended for the inhibition of Cdc42EP5 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 μ M in 66 μ l. 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 Cdc42EP5 gene expression knockdown using RT-PCR Primer: Cdc42EP5 (m)-PR: sc-142214-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.