

Cdc42EP3 siRNA (m): sc-142212

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. Cdc42EP3 (CDC42 effector protein (Rho GTPase binding) 3), also known as UB1, CEP3 or BORG2, is a 245 amino acid cytoplasmic, cytoskeletal and peripheral membrane protein belonging to the BORG/CEP family. Responsible for organization of the actin cytoskeleton and fibroblast pseudopodia formation, Cdc42EP3 is believed to act downstream of Cdc42 where it alters cell shape via induction of Actin filament assembly. Cdc42EP3 is highly expressed in heart, weakly expressed in brain and is known to interact with Cdc42 and TC10 in a GTP-dependent manner.

REFERENCES

1. Alberts, A.S., et al. 1998. Analysis of RhoA-binding proteins reveals an interaction domain conserved in heterotrimeric G protein β subunits and the yeast response regulator protein Skn7. *J. Biol. Chem.* 273: 8616-8622.
2. Johnson, D.I. 1999. Cdc42: An essential Rho-type GTPase controlling eukaryotic cell polarity. *Microbiol. Mol. Biol. Rev.* 63: 54-105.
3. Joberty, G., et al. 1999. The Borgs, a new family of Cdc42 and TC10 GTPase-interacting proteins. *Mol. Cell. Biol.* 19: 6585-6597.
4. 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.
5. Joberty, G., et al. 2001. Borg proteins control septin organization and are negatively regulated by Cdc42. *Nat. Cell Biol.* 3: 861-866.
6. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606133. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: Cdc42ep3 (mouse) mapping to 17 E3.

PRODUCT

Cdc42EP3 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Cdc42EP3 shRNA Plasmid (m): sc-142212-SH and Cdc42EP3 shRNA (m) Lentiviral Particles: sc-142212-V as alternate gene silencing products.

For independent verification of Cdc42EP3 (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-142212A, sc-142212B and sc-142212C.

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

Cdc42EP3 siRNA (m) is recommended for the inhibition of Cdc42EP3 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 Cdc42EP3 gene expression knockdown using RT-PCR Primer: Cdc42EP3 (m)-PR: sc-142212-PR (20 μ l). 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.