

IQGAP1 siRNA (h2): sc-270066

BACKGROUND

IQGAP1, for IQ motif containing GTPase activating protein, is a RasGAP-related, Actin-binding protein that interacts with the small GTPases Cdc42 and Rac1. The C-terminus of IQGAP1 is essential for interacting with Cdc42 and, in addition, IQGAP1 contains a WW domain and a predicted N-terminal coiled-coil region, which may be involved in IQGAP dimerization. Expression of IQGAP1 is highest in placenta, lung and kidney, where it co-localizes with Cdc42 to the cytoskeleton and assists with Cdc42 in mediating the regulation of cell proliferation, polarity and cell morphology. IQGAP1 regulates cadherin-mediated cell adhesion via binding to E-cadherin, β -catenin and α -catenin. This association induces the accumulation of these proteins at the site of cell-cell contact. IQGAP1 is negatively regulated by calmodulin, which binds to IQGAP1 in a calcium-dependent manner and disrupts IQGAP1 from associating with Cdc42.

REFERENCES

1. Weissbach, L., et al. 1994. Identification of a human RasGAP-related protein containing calmodulin-binding motifs. *J. Biol. Chem.* 269: 20517-20521.
2. Kuroda, S., et al. 1996. Identification of IQGAP as a putative target for the small GTPases, Cdc42 and Rac1. *J. Biol. Chem.* 271: 23363-23367.
3. Bashour, A.M., et al. 1997. IQGAP1, a Rac- and Cdc42-binding protein, directly binds and cross-links microfilaments. *J. Cell Biol.* 137: 1555-1566.
4. Joyal, J.L., et al. 1997. Calmodulin modulates the interaction between IQGAP1 and Cdc42. *J. Biol. Chem.* 272: 15419-15425.
5. Erickson, J.W., et al. 1997. Identification of an Actin cytoskeletal complex that includes IQGAP and the Cdc42 GTPase. *J. Biol. Chem.* 272: 24443-24447.
6. McCallum, S.J., et al. 1998. Characterization of the association of the Actin-binding protein, IQGAP, and activated Cdc42 with Golgi membranes. *J. Biol. Chem.* 273: 22537-22544.
7. Faix, J., et al. 1998. The IQGAP-related protein DGAP1 interacts with Rac and is involved in the modulation of the F-Actin cytoskeleton and control of cell motility. *J. Cell Sci.* 111: 3059-3071.

CHROMOSOMAL LOCATION

Genetic locus: IQGAP1 (human) mapping to 15q26.1.

PRODUCT

IQGAP1 siRNA (h2) 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 IQGAP1 shRNA Plasmid (h2): sc-270066-SH and IQGAP1 shRNA (h2) Lentiviral Particles: sc-270066-V as alternate gene silencing products.

For independent verification of IQGAP1 (h2) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270066A, sc-270066B and sc-270066C.

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

IQGAP1 siRNA (h2) is recommended for the inhibition of IQGAP1 expression in human 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.

GENE EXPRESSION MONITORING

IQGAP1 (C-9): sc-376021 is recommended as a control antibody for monitoring of IQGAP1 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 IQGAP1 gene expression knockdown using RT-PCR Primer: IQGAP1 (h2)-PR: sc-270066-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.

PROTOCOLS

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