SANTA CRUZ BIOTECHNOLOGY, INC.

IQGAP2 siRNA (h): sc-35702

BACKGROUND

IQGAP1 and IQGAP2 are RasGAP-related Actin binding proteins that interact with the small GTPases Cdc42 and Rac1 and regulate cadherin-mediated cell-cell adhesion. IQGAP1 and IQGAP2 share largely related sequence similarity, and both contain a putative calponin domain, a single WW domain, four conserved IQ or calmodulin-binding domains, and a RasGAP domain. IQGAP1 binds preferentially to the GTP S-bound form of Cdc42, whereas IQGAP2 associates with both nucleotide-bound and nucleotide-free forms of Cdc42. In addition to binding Cdc42, IQGAP1 and IQGAP2 also bind Rac1, F-Actin and calmodulin. The binding of IQGAP proteins to Cdc42 and Rac1 inhibits their intrinsic and RhoGAP-stimulated GTPase activities, which thereby maintains Cdc42 and Rac1 in their active GTP-bound state.

REFERENCES

1. McCallum, S.J., et al. 1996. Identification of a putative effector for Cdc42Hs with high sequence similarity to the RasGAP-related protein IQGAP1 and a Cdc42Hs binding partner with similarity to IQGAP2. J. Biol. Chem. 271: 21732-21737.
2. Brill, S., et al. 1996. The Ras GTPase-activating-protein-related human protein IQGAP2 harbors a potential actin binding domain and interacts with calmodulin and Rho family GTPases. Mol. Cell. Biol. 16: 4869-4878.
3. Zhang, B., et al. 1997. Characterization of the interactions between the small GTPase Cdc42 and its GTPase-activating proteins and putative effectors. Comparison of kinetic properties of Cdc42 binding to the Cdc42-interactive domains. J. Biol. Chem. 272: 21999-22007.
4. Ho, Y.D., et al. 1999. IQGAP1 integrates Ca^{2+}/calmodulin and Cdc42 signaling. J. Biol. Chem. 274: 464-470.
5. Li, Z., et al. 1999. IQGAP1 and calmodulin modulate E-cadherin function. J. Biol. Chem. 274: 37885-37892.
6. Li, S., et al. 2000. Gastric hyperplasia in mice lacking the putative Cdc42 effector IQGAP1. Mol. Cell. Biol. 20: 697-701.

CHROMOSOMAL LOCATION

Genetic locus: IQGAP2 (human) mapping to 5q13.3.

PRODUCT

IQGAP2 siRNA (h) 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 IQGAP2 shRNA Plasmid (h): sc-35702-SH and IQGAP2 shRNA (h) Lentiviral Particles: sc-35702-V as alternate gene silencing products.

For independent verification of IQGAP2 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-35702A, sc-35702B and sc-35702C.

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

IQGAP2 siRNA (h) is recommended for the inhibition of IQGAP2 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 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

IQGAP2 (A-4): sc-17835 is recommended as a control antibody for monitoring of IQGAP2 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 IQGAP2 gene expression knockdown using RT-PCR Primer: IQGAP2 (h)-PR: sc-35702-PR (20 µl, 419 bp). 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.