SANTA CRUZ BIOTECHNOLOGY, INC.

ARHGAP4 siRNA (m): sc-141217

BACKGROUND

ARHGAP4 (Rho GTPase activating protein 4), also known as RGC1 (Rho-GAP hematopoietic protein C1), C1, p115 or RhoGAP4, is a cytoplasmic protein belonging to the Rho GTPase activating protein family. ARHGAP4 contains one Rho-GAP domain, one FCH (Fps/Fes/Fer/CIP4 homology) domain and one SH3 (Src homology 3) domain. Highest expression levels of ARHGAP4 are found in hematopoietic cells, however, it can also be found in lung, placenta and some fetal tissues. ARHGAP4 localizes to the leading edge in migrating cells, axons and growth cones and is believed to participate as an inhibitor of cell motility and axon outgrowth through its regulation of cytoskeletal dynamics. In addition, ARHGAP4 is capable of inhibiting the activity Rho GTPases, such as Cdc42 and Rac 1, that function to promote cell motility and axon outgrowth.

REFERENCES

1. Tribioli, C., et al. 1996. An X chromosome-linked gene encoding a protein with characteristics of a RhoGAP predominantly expressed in hematopoietic cells. Proc. Natl. Acad. Sci. USA 93: 695-699.
2. Schöneberg, T., et al. 1999. Compound deletion of the RhoGAP C1 and V2 vasopressin receptor genes in a patient with nephrogenic diabetes insipidus. Hum. Mutat. 14: 163-174.
3. Foletta, V.C., et al. 2002. Cloning of rat ARHGAP4/C1, a RhoGAP family member expressed in the nervous system that colocalizes with the Golgi complex and microtubules. Brain Res. Mol. Brain Res. 107: 65-79.
4. Christerson, L.B., et al. 2002. p115 Rho GTPase activating protein interacts with MEKK1. J. Cell. Physiol. 192: 200-208.
5. Demura, M., et al. 2002. Two novel types of contiguous gene deletion of the AVPR2 and ARHGAP4 genes in unrelated Japanese kindreds with nephrogenic diabetes insipidus. Hum. Mutat. 19: 23-29.
6. Katoh, M. and Katoh, M. 2003. FNBP2 gene on human chromosome 1q32.1 encodes ARHGAP family protein with FCH, FBH, RhoGAP and SH3 domains. Int. J. Mol. Med. 11: 791-797.
7. Broides, A., et al. 2006. Severe combined immunodeficiency associated with nephrogenic diabetes insipidus and a deletion in the Xq28 region. Clin. Immunol. 120: 147-155.

CHROMOSOMAL LOCATION

Genetic locus: Arhgap4 (mouse) mapping to X A7.3.

PRODUCT

ARHGAP4 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 ARHGAP4 shRNA Plasmid (m): sc-141217-SH and ARHGAP4 shRNA (m) Lentiviral Particles: sc-141217-V as alternate gene silencing products.

For independent verification of ARHGAP4 (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-141217A, sc-141217B and sc-141217C.

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

ARHGAP4 siRNA (m) is recommended for the inhibition of ARHGAP4 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

ARHGAP4 (G-6): sc-376251 is recommended as a control antibody for monitoring of ARHGAP4 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 ARHGAP4 gene expression knockdown using RT-PCR Primer: ARHGAP4 (m)-PR: sc-141217-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.

PROTOCOLS

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