SANTA CRUZ BIOTECHNOLOGY, INC.

ARHGAP9 siRNA (m): sc-141220

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The Power to Question

BACKGROUND

Proteins that contain a RhoGap (Rho GTPase activating protein) domain inactivate regulators of the actin cytoskeleton by catalyzing the hydrolysis of GTP that is bound to Rho, Rac and/or Cdc42. ARHGAP9 (Rho GTPase-activating protein 9) is a 750 amino acid protein that contains a Rho-GAP domain and functions in the activation of Rho-type GTPases by converting them to an inactive GDP-bound state. Predominantly expressed in spleen, thymus and peripheral blood lymphocytes, ARHGAP9 has preferential GAP activity toward Cdc42 and Rac 1, and less activity toward Rho A. Japanese individuals with acetylcholine-induced coronary artery spasm have been found to have a nonsynonymous single nucleotide polymorphism (SNP) in the ARHGAP9 gene, which leads to a weaker inhibitory effect on cell adhesion, spreading and migration than the wild-type protein. This suggests that SNPs within the ARHGAP9 protein play a critical role in the infiltration of hematopoietic cells into the endothelium and inflammation leading to endothelium dysfunction. There are three isoforms of ARHGAP9 that are produced as a result of alternative splicing events.

REFERENCES

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2. Peck, J., et al. 2002. Human RhoGAP domain-containing proteins: structure, function and evolutionary relationships. FEBS Lett. 528: 27-34.
3. Katoh, Y., et al. 2004. Identification and characterization of ARHGAP27 gene in silico. Int. J. Mol. Med. 14: 943-947.
4. Katoh, M., et al. 2004. Characterization of human ARHGAP10 gene in silico. Int. J. Oncol. 25: 1201-1206.
5. Ang, B.K., et al. 2007. ARHGAP9, a novel MAP kinase docking protein, inhibits ERK and p38 activation through WW domain binding. J. Mol. Signal. 2: 1.
6. Ceccarelli, D.F., et al. 2007. Non-canonical interaction of phosphoinositides with pleckstrin homology domains of Tiam1 and ARHGAP9. J. Biol. Chem. 282: 13864-13874.
7. Takefuji, M., et al. 2010. Mutation of ARHGAP9 in patients with coronary spastic angina. J. Hum. Genet. 55: 42-49.

CHROMOSOMAL LOCATION

Genetic locus: Arhgap9 (mouse) mapping to 10 D3.

PRODUCT

ARHGAP9 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ARHGAP9 shRNA Plasmid (m): sc-141220-SH and ARHGAP9 shRNA (m) Lentiviral Particles: sc-141220-V as alternate gene silencing 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

ARHGAP9 siRNA (m) is recommended for the inhibition of ARHGAP9 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ARHGAP9 gene expression knockdown using RT-PCR Primer: ARHGAP9 (m)-PR: sc-141220-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.