SANTA CRUZ BIOTECHNOLOGY, INC.

ARHGAP12 siRNA (h): sc-90343

BACKGROUND

GTPase-activating proteins (GAPs) accelerate the intrinsic rate of GTP hydrolysis of Ras-related proteins, resulting in downregulation of their active form. ARHGAP12 (Rho GTPase activating protein 12) is a 846 amino acid protein that contains one N-terminal SH3 domain, two WW domains, one PH (pleckstrin homology) domain and one C-terminal Rho-GAP domain. The GAP domain of ARHGAP12 is most closely related to the GAP domain of ARHGAP9. ARHGAP12 functions as a GTPase activator for Rho-type GTPases by converting them to an inactive GDP-bound state. Conserved in chimpanzee, canine, bovine, mouse, rat, chicken and zebrafish, ARHGAP12 contains 20 exons, the first 2 of which are noncoding and the final contains 2 alternate polyadenylation signals. Encoded by a gene that maps to human chromosome 10p11.22, ARHGAP12 is expressed in lung, kidney, liver, brain and pancreas, and exists as three alternatively spliced isoforms.

REFERENCES

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3. Seoh, M.L., et al. 2003. ArhGAP15, a novel human RacGAP protein with GTPase binding property. FEBS Lett. 539: 131-137.
4. Sakakibara, T., et al. 2004. Identification and characterization of a novel Rho GTPase activating protein implicated in receptor-mediated endocytosis. FEBS Lett. 566: 294-300.
5. Kosoy, R., et al. 2004. Polymorphic variation in the CBLB gene in human type 1 diabetes. Genes Immun. 5: 232-235.
6. Katoh, Y., et al. 2004. Identification and characterization of ARHGAP27 gene in silico. Int. J. Mol. Med. 14: 943-947.
7. Hougs, L., et al. 2005. One third of Danish hypertrophic cardiomyopathy patients with MYH7 mutations have mutations [corrected] in MYH7 rod region. Eur. J. Hum. Genet. 13: 161-165.
8. Matsuda, M., et al. 2008. Identification of adherens junction-associated GTPase activating proteins by the fluorescence localization-based expression cloning. Exp. Cell Res. 314: 939-949.

CHROMOSOMAL LOCATION

Genetic locus: ARHGAP12 (human) mapping to 10p11.22.

PRODUCT

ARHGAP12 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 ARHGAP12 shRNA Plasmid (h): sc-90343-SH and ARHGAP12 shRNA (h) Lentiviral Particles: sc-90343-V as alternate gene silencing products.

For independent verification of ARHGAP12 (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-90343A, sc-90343B and sc-90343C.

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

ARHGAP12 siRNA (h) is recommended for the inhibition of ARHGAP12 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ARHGAP12 gene expression knockdown using RT-PCR Primer: ARHGAP12 (h)-PR: sc-90343-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.