SANTA CRUZ BIOTECHNOLOGY, INC.

ARHGEF18 siRNA (m): sc-141226

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The Power to Question

BACKGROUND

Rho GTPases, which play fundamental roles in numerous cellular processes, are initiated by external stimuli that signal though G protein-coupled receptors. ARHGEF18 (Rho/Rac guanine nucleotide exchange factor (GEF) 18), also known as P114-RhoGEF, is a 1,173 amino acid cytoplasmic protein containing one DH (DBL-homology) domain and a PH domain. Widely expressed, ARHGEF18 is detected at highest levels in kidney and pancreas, with weak or no expression in liver, skeletal muscle and testis, ARHGEF18 acts as guanine nucleotide exchange factor (GEF) for RhoA GTPases. It is suggested that activation of ARHGEF18 induces formation of actin stress fibers, suggesting a role in actin cytoskeleton reorganization in different tissues. Existing as three alternatively spliced isoforms, ARHGEF18 is encoded by a gene located on human chromosome 19p13.2. ARHGEF18 interacts with G_{β}, G_{γ}, and Septin 9.

REFERENCES

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2. Rümenapp, U., et al. 2002. A mammalian Rho-specific guanine-nucleotide exchange factor (p164-RhoGEF) without a pleckstrin homology domain. Biochem. J. 366: 721-728.
3. Harrington, A.W., et al. 2002. Activation of Rac GTPase by p75 is necessary for c-Jun N-terminal kinase-mediated apoptosis. J. Neurosci. 22: 156-166.
4. Niu, J., et al. 2003. G protein βγ subunits stimulate p114RhoGEF, a guanine nucleotide exchange factor for RhoA and Rac 1: regulation of cell shape and reactive oxygen species production. Circ. Res. 93: 848-856.
5. Nagata, K., et al. 2005. Cytoskeletal modification of Rho guanine nucleotide exchange factor activity: identification of a Rho guanine nucleotide exchange factor as a binding partner for Sept9b, a mammalian Septin. Oncogene 24: 65-76.
6. Mohl, M., et al. 2006. Gef10—the third member of a Rho-specific guanine nucleotide exchange factor subfamily with unusual protein architecture. Naunyn Schmiedebergs Arch. Pharmacol. 373: 333-341.

CHROMOSOMAL LOCATION

Genetic locus: Arhgef18 (mouse) mapping to 8 A1.1.

PRODUCT

ARHGEF18 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 ARHGEF18 shRNA Plasmid (m): sc-141226-SH and ARHGEF18 shRNA (m) Lentiviral Particles: sc-141226-V as alternate gene silencing products.

For independent verification of ARHGEF18 (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-141226A, sc-141226B and sc-141226C.

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

ARHGEF18 siRNA (m) is recommended for the inhibition of ARHGEF18 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 ARHGEF18 gene expression knockdown using RT-PCR Primer: ARHGEF18 (m)-PR: sc-141226-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.