

Rho A siRNA (h): sc-29471

BACKGROUND

The Ras p21 family of guanine nucleotide proteins has been widely studied in view of its apparent role in signal transduction pathways and high frequency of mutations in human malignancies. It is now clear, however, that the Ras proteins (H-, K- and N-Ras p21) are members of a much larger superfamily of related proteins. Six members of this family (Rap 1A, Rap 1B, Rap 2, R-Ras, Ral A and Ral B), exhibit approximately 50% amino acid homology to Ras. The five mammalian Rho proteins (Rho A, B, C, 7 and 8) are approximately 30% homologous to Ras and are expressed in a wide range of cell types. Both Ras p21 and Rho p21, as well as other members of the Ras superfamily, contain a carboxy terminal CAAX sequence (C, cysteine; A, aliphatic amino acid; X, any amino acid) which in the case of Ras has been shown to be essential for correct localization and function.

CHROMOSOMAL LOCATION

Genetic locus: RHOA (human) mapping to 3p21.31.

PRODUCT

Rho A siRNA (h) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Rho A shRNA Plasmid (h): sc-29471-SH and Rho A shRNA (h) Lentiviral Particles: sc-29471-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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Rho A siRNA (h) is recommended for the inhibition of Rho A 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 μ M in 66 μ l. 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.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

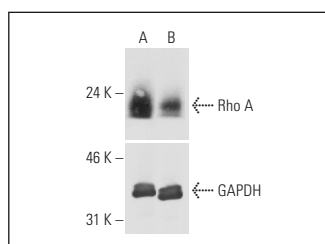
GENE EXPRESSION MONITORING

Rho A (26C4): sc-418 is recommended as a control antibody for monitoring of Rho A 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Rho A gene expression knockdown using RT-PCR Primer: Rho A (h)-PR: sc-29471-PR (20 μ l, 422 bp). Annealing temperature for the primers should be 55-60 $^{\circ}$ C and the extension temperature should be 68-72 $^{\circ}$ C.

DATA



Rho A siRNA (h,m): sc-29471. Western blot analysis of Rho A expression in non-transfected control (A) and Rho A siRNA (B) transfected HeLa cells. Blot probed with Rho A (119): sc-179. GAPDH (V-18): sc-20357 used as specificity and loading control.

SELECT PRODUCT CITATIONS

- Pankov, R., et al. 2005. A Rac switch regulates random versus directionally persistent cell migration. *J. Cell Biol.* 170: 793-802.
- Huang, Y., et al. 2015. Sevoflurane prevents lipopolysaccharide-induced barrier dysfunction in human lung microvascular endothelial cells: Rho-mediated alterations of VE-cadherin. *Biochem. Biophys. Res. Commun.* 468: 119-124.
- Heemskerk, N., et al. 2016. F-Actin-rich contractile endothelial pores prevent vascular leakage during leukocyte diapedesis through local RhoA signalling. *Nat. Commun.* 7: 10493.
- Shi, F., et al. 2017. Simulated microgravity promotes angiogenesis through RhoA-dependent rearrangement of the Actin cytoskeleton. *Cell. Physiol. Biochem.* 41: 227-238.
- Fang, K., et al. 2018. MicroRNA-31-3p is involved in substance P (SP)-associated inflammation in human colonic epithelial cells and experimental colitis. *Am. J. Pathol.* 188: 586-599.
- Deng, B., et al. 2019. Simulated microgravity inhibits the viability and migration of glioma via FAK/RhoA/Rock and FAK/Nek2 signaling. *In Vitro Cell. Dev. Biol. Anim.* 55: 260-271.

PROTOCOLS

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