SANTA CRUZ BIOTECHNOLOGY, INC.

# ARHGEF16 siRNA (m): sc-141224

## BACKGROUND

Rho GTPases, which play fundamental roles in numerous cellular processes, are initiated by external stimuli that signal though G-protein coupled receptors. ARHGEF16 (Rho guanine exchange factor (GEF) 16), also known as NBR or GEF16, is a 709 amino acid protein that contains a DH (DBL-homology) domain, a PH domain and an SH3 domain. The DH domain consists of a region containing about 150 amino acids that induce Rho family GTPases to release GDP. The DH domain is invariably followed by a pleckstrin homology (PH) domain, and while not required for catalysis of nucleotide exchange, the PH domain is suggested to greatly increase catalytic efficiency. ARHGEF16 exists as 2 alternatively spliced isoforms and is encoded by a gene located on human chromsome 1, which spans 260 million base pairs, contains over 3,000 genes and comprises nearly 8% of the human genome.

## REFERENCES


1. Chan, A.M., et al. 1994. Expression cDNA cloning of a novel oncogene with sequence similarity to regulators of small GTP-binding proteins. Oncogene 9: 1057-1063.
2. Snyder, J.T., et al. 2002. Structural basis for the selective activation of Rho GTPases by Dbl exchange factors. Nat. Struct. Biol. 9: 468-475.
3. Ogita, H., et al. 2003. EphA4-mediated Rho activation via Vsm-RhoGEF expressed specifically in vascular smooth muscle cells. Circ. Res. 93: 23-31.
4. O'Brien, M., et al. 2008. Expression of RHOGTPase regulators in human myometrium. Reprod. Biol. Endocrinol. 6: 1.
5. Stacey, S.N., et. al. 2008. Common variants on 1p36 and 1q42 are associated with cutaneous basal cell carcinoma but not with melanoma or pigmentation traits. Nat. Genet. 40: 1313-1318.
6. Shin, E.Y., et al. 2009. Involvement of βPIX in angiotensin II-induced migration of vascular smooth muscle cells. Exp. Mol. Med. 41: 387-396.
7. Wang, Z., et al. 2009. Regulation of immature dendritic cell migration by RhoA guanine nucleotide exchange factor ARHGEF5. J. Biol. Chem. 284: 28599-28606.


## CHROMOSOMAL LOCATION

Genetic locus: Arhgef16 (mouse) mapping to 4 E2.

## PRODUCT

ARHGEF16 siRNA (m) is a pool of 2 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 ARHGEF16 shRNA Plasmid (m): sc-141224-SH and ARHGEF16 shRNA (m) Lentiviral Particles: sc-141224-V as alternate gene silencing products.

For independent verification of ARHGEF16 (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-141224A and sc-141224B.

## RESEARCH USE

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

## 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

ARHGEF16 siRNA (m) is recommended for the inhibition of ARHGEF16 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

ARHGEF16 (G-10): sc-377104 is recommended as a control antibody for monitoring of ARHGEF16 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 ARHGEF16 gene expression knockdown using RT-PCR Primer: ARHGEF16 (m)-PR: sc-141224-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## PROTOCOLS

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