

ARHGEF17 siRNA (h): sc-96619

BACKGROUND

ARHGEF17 (Rho guanine nucleotide exchange factor (GEF) 17), also known as p164-RhoGEF (164 kDa Rho-specific guanine-nucleotide exchange factor) or TEM4 (tumor endothelial marker 4), is a 2,063 amino acid protein that contains one DH (DBL-homology) domain. Encoded by a gene that maps to human chromosome 11q13.4, ARHGEF17 is conserved in canine, mouse, rat, chicken, zebrafish, fruit fly and mosquito. Highly expressed in heart, ARHGEF17 functions as a GEF for Rho A GTPases and participates in guanyl-nucleotide exchange factor activity and cellular signaling. A novel tumor suppressor gene, ARHGEF17 carries premature termination codons and exhibits a mutation that is linked to mucosal melanoma. ARHGEF17 is involved in a mixed lineage leukemia gene (MLL) rearrangement in acute myeloid leukemia (AML) patients, whereby ARHGEF17 participates as a partner gene and is detected in myeloid lineage; however, the MLL-ARHGEF17 rearrangement likely does not result in oncogenic dysregulation of cell growth.

REFERENCES

1. Teuffel, O., et al. 2005. Clonal expansion of a new MLL rearrangement in the absence of leukemia. *Blood* 105: 4151-4152.
2. Ching, T.T., et al. 2005. Epigenome analyses using BAC microarrays identify evolutionary conservation of tissue-specific methylation of SHANK3. *Nat. Genet.* 37: 645-651.
3. Blangy, A., et al. 2006. Identification of TRIO-GEF1 chemical inhibitors using the yeast exchange assay. *Biol. Cell* 98: 511-522.
4. Kitamura, E., et al. 2007. Analysis of tissue-specific differentially methylated regions (TDMs) in humans. *Genomics* 89: 326-337.
5. Robinson, B.W., et al. 2008. Prospective tracing of MLL-FRYL clone with low MEIS1 expression from emergence during neuroblastoma treatment to diagnosis of myelodysplastic syndrome. *Blood* 111: 3802-3812.
6. Bloethner, S., et al. 2008. Identification of ARHGEF17, DENND2D, FGFR3, and RB1 mutations in melanoma by inhibition of nonsense-mediated mRNA decay. *Genes Chromosomes Cancer* 47: 1076-1085.
7. Kobayashi, S., et al. 2009. The presence of mature granulocytes/monocytes derived from leukemic cells in MLL-associated leukemia. *Int. J. Hematol.* 90: 591-596.
8. Meyer, C., et al. 2009. New insights to the MLL recombinome of acute leukemias. *Leukemia* 23: 1490-1499.

CHROMOSOMAL LOCATION

Genetic locus: ARHGEF17 (human) mapping to 11q13.4.

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.

PRODUCT

ARHGEF17 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ARHGEF17 shRNA Plasmid (h): sc-96619-SH and ARHGEF17 shRNA (h) Lentiviral Particles: sc-96619-V as alternate gene silencing products.

For independent verification of ARHGEF17 (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-96619A, sc-96619B and sc-96619C.

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

ARHGEF17 siRNA (h) is recommended for the inhibition of ARHGEF17 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ARHGEF17 gene expression knockdown using RT-PCR Primer: ARHGEF17 (h)-PR: sc-96619-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.