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# ARHI siRNA (h): sc-43621

## BACKGROUND

ARHI (Ras homologue member I) is a maternally imprinted tumor suppressor gene that encodes a GTP-binding protein with high homology to Ras and Rap. ARHI and Ras share similar GTP/GDP binding domains, but exert opposite functions. Unlike Ras, an oncogene, ARHI is a tumor suppressor in the Ras superfamily. ARHI is present in normal ovarian and breast epithelial cells but not in ovarian and breast cancers. The human ARHI gene maps to a site on chromosome 1p31.3 where loss of heterozygosity is characteristic to 40% of human breast and ovarian cancers.

## REFERENCES

1. Yu, Y., Xu, F., Peng, H., Fang, X., Zhao, S., Li, Y., Cuevas, B., Kuo, W.L., Gray, J.W., Siciliano, M., Mills, G.B., Bast, R.C. 1999. NOEY2 (ARHI), an imprinted putative tumor suppressor gene in ovarian and breast carcinomas. *Proc. Natl. Acad. Sci. USA* 96: 214-219.
2. Yu, Y., Fujii, S., Yuan, J., Luo, R.Z., Wang, L., Bao, J., Kadota, M., Oshimura, M., Dent, S.R., Issa, J.P., Bast, R.C. 2003. Epigenetic regulation of ARHI in breast and ovarian cancer cells. *Ann. N.Y. Acad. Sci.* 983: 268-277.
3. Yuan, J., Luo, R.Z., Fujii, S., Wang, L., Hu, W., Andreeff, M., Pan, Y., Kadota, M., Oshimura, M., Sahin, A.A., Issa, J.P., Bast, R.C., Jr., Yu, Y. 2003. Aberrant methylation and silencing of ARHI, an imprinted tumor suppressor gene in which the function is lost in breast cancers. *Cancer Res.* 63: 4174-4180.
4. Luo, R.Z., Fang, X., Marquez, R., Liu, S.Y., Mills, G.B., Liao, W.S., Yu, Y., Bast, R.C. 2003. ARHI is a Ras-related small G-protein with a novel N-terminal extension that inhibits growth of ovarian and breast cancers. *Oncogene* 22: 2897-2909.

## CHROMOSOMAL LOCATION

Genetic locus: DIRAS3 (human) mapping to 1p31.3.

## PRODUCT

ARHI 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ARHI shRNA Plasmid (h): sc-43621-SH and ARHI shRNA (h) Lentiviral Particles: sc-43621-V as alternate gene silencing products.

For independent verification of ARHI (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-43621A, sc-43621B and sc-43621C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

ARHI siRNA (h) is recommended for the inhibition of ARHI 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  $\mu$ M in 66  $\mu$ 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 ARHI gene expression knockdown using RT-PCR Primer: ARHI (h)-PR: sc-43621-PR (20  $\mu$ l). 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](http://www.scbt.com) for detailed protocols and support products.