

SIAH-1 siRNA (m): sc-37496

BACKGROUND

SIAH, the human homolog of the *Drosophila* seven in absentia (*sina*) gene, is a tumor suppressor protein that is expressed in intestinal epithelium and activated during apoptosis. Human SIAH proteins are produced as two distinct gene products, SIAH-1 and the slightly larger protein SIAH-2, which share a highly conserved C-terminal sequence and differ in their N-terminal regions. SIAH-1 contains an N-terminal RING-finger domain, which is required for proteolysis, and a cystein-rich C-terminal domain, which regulates oligomerization and SIAH binding to target proteins. As a tumor suppressor, SIAH-1 binds DCC (deleted in colorectal cancer) and regulates DCC degradation via the ubiquitin-proteasome pathway. SIAH-1 also binds a Bcl-2 related protein, Bag-1, thereby inhibiting cell growth. The majority of SIAH-1 is localized to the nucleus, however a small percentage is detected in the cytoplasm. This nuclear localization suggests that SIAH proteins may interact with other nuclear matrix proteins and DNA.

REFERENCES

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2. Hu, G., et al. 1997. Characterization of human homologs of the *Drosophila* seven in absentia (*sina*) gene. *Genomics* 46: 103-111.
3. Hu, G., et al. 1997. Mammalian homologs of seven in absentia regulate DCC via the ubiquitin-proteasome pathway. *Genes Dev.* 11: 2701-2714.
4. Matsuzawa, S., et al. 1998. p53-inducible human homologue of *Drosophila* seven in absentia (SIAH) inhibits cell growth: suppression by BAG-1. *EMBO J.* 17: 2736-2747.
5. Hu, G., et al. 1999. SIAH-1 N-terminal RING domain is required for proteolysis function, and C-terminal sequence regulates oligomerization and binding to target proteins. *Mol. Cell. Biol.* 19: 724-732.
6. Roperch, J., et al. 1999. SIAH-1 promotes apoptosis and tumor suppression through a network involving the regulation of protein folding, unfolding, and trafficking: Identification of common effectors with p53 and p21^{Waf1}. *Proc. Natl. Acad. Sci. USA* 96: 8070-8073.
7. Bruzzoni-Giovanelli, H., et al. 1999. SIAH-1 inhibits cell growth by altering the mitotic process. *Oncogene* 18: 7101-7109.
8. Kondo, S., et al. 2006. EBV latent membrane protein 1 up-regulates hypoxia-inducible factor 1 α through SIAH-1-mediated down-regulation of prolyl hydroxylases 1 and 3 in nasopharyngeal epithelial cells. *Cancer Res.* 66: 9870-9877.
9. Yoshibayashi, H., et al. 2007. SIAH-1 causes growth arrest and apoptosis in hepatoma cells through β -catenin degradation-dependent and -independent mechanisms. *Oncol. Rep.* 17: 549-556.

CHROMOSOMAL LOCATION

Genetic locus: Siah1b (mouse) mapping to X F5.

RESEARCH USE

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

PRODUCT

SIAH-1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SIAH-1 shRNA Plasmid (m): sc-37496-SH and SIAH-1 shRNA (m) Lentiviral Particles: sc-37496-V as alternate gene silencing products.

For independent verification of SIAH-1 (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-37496A, sc-37496B and sc-37496C.

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

SIAH-1 siRNA (m) is recommended for the inhibition of SIAH-1 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 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 SIAH-1 gene expression knockdown using RT-PCR Primer: SIAH-1 (m)-PR: sc-37496-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Dulloo, I., et al. 2015. Hypoxia-inducible TAp73 supports tumorigenesis by regulating the angiogenic transcriptome. *Nat. Cell Biol.* 17: 511-523.

PROTOCOLS

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