SANTA CRUZ BIOTECHNOLOGY, INC.

SNAI 1 siRNA (h): sc-38398

BACKGROUND

The SNAIL family of developmental regulatory proteins is a group of widely conserved zinc-finger proteins that regulate transcription and include the mammalian proteins SLUG, SNAI 1, the human homolog of *Drosophila* SNAIL, and Smuc. SNAI 1 and SLUG are expressed in placenta and adult heart, liver and skeletal muscle. SNAI 1, and the corresponding mouse homolog Sna, each contain three classic zinc fingers and one atypical zinc finger, while SLUG contains five zinc finger regions and a transcriptional repression domain at the amino terminus, which enables SLUG to act as a negative regulator of gene expression. SLUG is implicated in the generation and migration of neural crest cells in human embryos and also contributes to limb bud development. In addition, SLUG also constitutes a cellular anti-apoptotic transcription factor that effectively prevents apoptosis in murine pro-B cells deprived of IL-3. The SNAIL-related gene from murine skeletal muscle cells, Smuc, is highly expressed in skeletal muscle and thymus and can, likewise, repress gene transcription. Smuc preferentially associates with CAGGTG and CACCTG E-box motifs (CANNTG) on DNA and involves the five putative DNA-binding zinc finger domains at the C-terminal region of Smuc.

CHROMOSOMAL LOCATION

Genetic locus: SNAI1 (human) mapping to 20q13.13.

PRODUCT

SNAI 1 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SNAI 1 shRNA Plasmid (h): sc-38398-SH and SNAI 1 shRNA (h) Lentiviral Particles: sc-38398-V as alternate gene silencing products.

For independent verification of SNAI 1 (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-38398A, sc-38398B and sc-38398C.

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

SNAI 1 siRNA (h) is recommended for the inhibition of SNAI 1 expression in human cells.

PROTOCOLS

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

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

SNAI 1 (G-7): sc-271977 is recommended as a control antibody for monitoring of SNAI 1 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 SNAI 1 gene expression knockdown using RT-PCR Primer: SNAI 1 (h)-PR: sc-38398-PR (20 µl, 542 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Baritaki, S., et al. 2009. Pivotal roles of SNAIL inhibition and RKIP induction by the proteasome inhibitor NPI-0052 in tumor cell chemoimmunosensitization. Cancer Res. 69: 8376-8385.
2. Zheng, X., et al. 2013. Metastasin leads to poor prognosis of hepatocellular carcinoma through partly inducing EMT. Oncol. Rep. 29: 1811-1818.
3. Liu, C.W., et al. 2014. Snail regulates Nanog status during the epithelial-mesenchymal transition via the Smad1/Akt/GSK3β signaling pathway in non-small-cell lung cancer. Oncotarget 5: 3880-3894.
4. Mahalingaiah, P.K., et al. 2015. Chronic oxidative stress leads to malignant transformation along with acquisition of stem cell characteristics, and epithelial to mesenchymal transition in human renal epithelial cells. J. Cell. Physiol. 230: 1916-1928.
5. Xu, X.Y., et al. 2016. Hirsutella sinensis attenuates aristolochic acid-induced renal tubular epithelial-mesenchymal transition by inhibiting TGF-β1 and snail expression. PLoS ONE 11: e0149242.
6. Liang, Z., et al. 2017. DDR2 facilitates papillary thyroid carcinoma epithelial mesenchymal transition by activating ERK2/Snail1 pathway. Oncol. Lett. 14: 8114-8121.
7. Han, R., et al. 2019. Upregulated long noncoding RNA LOC105375913 induces tubulointerstitial fibrosis in focal segmental glomerulosclerosis. Sci. Rep. 9: 716.

RESEARCH USE

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