SANTA CRUZ BIOTECHNOLOGY, INC.

SOCS-3 siRNA (h): sc-41000

BACKGROUND

The SOCS (suppressor of cytokine signaling) gene family consists of a group of proteins that negatively regulate cytokine signal transduction. The SOCS family proteins contain a central SH2 domain and a carboxy-terminal region termed the "SOCS box". The SOCS-1 (also called SSI-1 and JAB), SOCS-2 (also called SSI-2 and CIS2) and SOCS-3 (also called SSI-3 and CIS3) genes are known to be upregulated by IL-6 and other cytokines. SOCS-4, SOCS-5, SOCS-6 and SOCS-7 were identified by their sequence homology with the SOCS box. CIS (for cytokine-inducible SH2-containing protein) is also a member of the SOCS family.

CHROMOSOMAL LOCATION

Genetic locus: SOCS3 (human) mapping to 17q25.3.

PRODUCT

SOCS-3 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 SOCS-3 shRNA Plasmid (h): sc-41000-SH and SOCS-3 shRNA (h) Lentiviral Particles: sc-41000-V as alternate gene silencing products.

For independent verification of SOCS-3 (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-41000A, sc-41000B and sc-41000C.

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

SOCS-3 siRNA (h) is recommended for the inhibition of SOCS-3 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 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

SOCS-3 (SO1): sc-51699 is recommended as a control antibody for monitoring of SOCS-3 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 SOCS-3 gene expression knockdown using RT-PCR Primer: SOCS-3 (h)-PR: sc-41000-PR (20 µl, 500 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Caruso, R., et al. 2009. Inhibition of monocyte-derived inflammatory cytokines by IL-25 occurs via p38 MAP kinase-dependent induction of SOCS-3. Blood 113: 3512-3519.
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4. Sundaram, K., et al. 2013. SOCS-1/3 participation in FGF-2 signaling to modulate RANK ligand expression in paget's disease of bone. J. Cell. Biochem. 114: 2032-2038.
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6. Fujimoto, T., et al. 2016. Eotaxin-3 (CCL26) expression in human pancreatic myofibroblasts. Pancreas 45: 420-424.
7. Lu, C., et al. 2017. Nrf2 induces lipocyte phenotype via a SOCS3-dependent negative feedback loop on JAK2/Stat3 signaling in hepatic stellate cells. Int. Immunopharmacol. 49: 203-211.
8. Singh, S., et al. 2017. Resistin causes G_1 arrest in colon cancer cells through upregulation of SOCS3. FEBS Lett. 591: 1371-1382.
9. Wu, M., et al. 2019. Low doses of decitabine improve the chemotherapy efficacy against basal-like bladder cancer by targeting cancer stem cells. Oncogene 38: 5425-5439.
10. Huang, S., et al. 2019. *In vivo* and *in vitro* effects of microRNA-221 on hepatocellular carcinoma development and progression through the JAK-Stat3 signaling pathway by targeting SOCS3. J. Cell. Physiol. 234: 3500-3514.
11. Qi, W., et al. 2020. Sinomenine inhibited Interleukin-1β-induced matrix metalloproteinases levels via SOCS3 up-regulation in SW1353 cells. Biol. Pharm. Bull. 43: 1643-1652.

RESEARCH USE

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