SANTA CRUZ BIOTECHNOLOGY, INC.

SOCS-2 siRNA (h): sc-40998

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 SOC-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.

REFERENCES

1. Yoshimura, A., et al. 1995. A novel cytokine-inducible gene CIS encodes an SH2-containing protein that binds to tyrosine-phosphorylated interleukin-3 and erythropoietin receptors. EMBO J. 14: 2816-2826.
2. Matsumoto, A., et al. 1997. CIS, a cytokine inducible SH2 protein, is a target of the JAK/Stat5 pathway and modulates Stat5 activation. Blood 89: 3148-3154.
3. Starr, R., et al. 1997. A family of cytokine-inducible inhibitors of signalling. Nature 387: 917-921.
4. Nicholson, S.E., et al. 1998. The SOCS proteins: a new family of negative regulators of signal transduction. J. Leukoc. Biol. 63: 665-668.
5. Hilton, D.J., et al. 1998. Twenty proteins containing a C-terminal SOCS box form five structural classes. Proc. Natl. Acad. Sci. USA 95: 114-119.

CHROMOSOMAL LOCATION

Genetic locus: SOCS2 (human) mapping to 12q22.

PRODUCT

SOCS-2 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-2 shRNA Plasmid (h): sc-40998-SH and SOCS-2 shRNA (h) Lentiviral Particles: sc-40998-V as alternate gene silencing products.

For independent verification of SOCS-2 (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-40998A, sc-40998B and sc-40998C.

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-2 siRNA (h) is recommended for the inhibition of SOCS-2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SOCS-2 gene expression knockdown using RT-PCR Primer: SOCS-2 (h)-PR: sc-40998-PR (20 µl, 457 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhang, Q., et al. 2020. LncRNA WDFY3-AS2 suppresses proliferation and invasion in oesophageal squamous cell carcinoma by regulating miR-2355-5p/SOCS-2 axis. J. Cell. Mol. Med. 24: 8206-8220.
2. Xu, J., et al. 2020. m^{6}A methyltransferase METTL3 maintains colon cancer tumorigenicity by suppressing SOCS-2 to promote cell proliferation. Oncol. Rep. 44: 973-986.
3. Jiang, L., et al. 2020. Knockdown of m^{6}A methyltransferase METTL3 in gastric cancer cells results in suppression of cell proliferation. Oncol. Lett. 20: 2191-2198.

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.