SANTA CRUZ BIOTECHNOLOGY, INC.

SOCS-1 siRNA (m): sc-40997

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.

CHROMOSOMAL LOCATION

Genetic locus: Socs1 (mouse) mapping to 16 A1.

PRODUCT

SOCS-1 siRNA (m) is a target-specific 19-25 nt siRNA 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-1 shRNA Plasmid (m): sc-40997-SH and SOCS-1 shRNA (m) Lentiviral Particles: sc-40997-V as alternate gene silencing products.

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-1 siRNA (m) is recommended for the inhibition of SOCS-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 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.

PROTOCOLS

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

GENE EXPRESSION MONITORING

SOCS-1 (E-9): sc-518028 is recommended as a control antibody for monitoring of SOCS-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 SOCS-1 gene expression knockdown using RT-PCR Primer: SOCS-1 (m)-PR: sc-40997-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. Srivastava, V., et al. 2009. Toll-like receptor 2 and DC-SIGNR1 differentially regulate suppressors of cytokine signaling 1 in dendritic cells during *Mycobacterium tuberculosis* infection. J. Biol. Chem. 284: 25532-25541.
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4. Lee, H.J., et al. 2015. The early induction of suppressor of cytokine signaling 1 and the downregulation of Toll-like receptors 7 and 9 induce tolerance in costimulated macrophages. Mol. Cells 38: 26-32.
5. Wang, W., et al. 2016. Macrophage micro-RNA-155 promotes lipopolysaccharide-induced acute lung injury in mice and rats. Am. J. Physiol. Lung Cell. Mol. Physiol. 311: L494-L506.
6. Paul, A.M., et al. 2016. TLR8 couples SOCS-1 and restrains TLR7-mediated antiviral immunity, exacerbating West Nile virus infection in mice. J. Immunol. 197: 4425-4435.
7. Zhang, S., et al. 2017. Resveratrol attenuates microglial activation via SIRT1-SOCS1 pathway. Evid. Based Complement. Alternat. Med. 2017: 8791832.
8. Porro, C., et al. 2019. Curcumin regulates anti-inflammatory responses by JAK/Stat/SOCS signaling pathway in BV-2 microglial cells. Biology 8: 51.
9. Chandrakar, P., et al. 2020. Differential induction of SOCS isoforms by *Leishmania donovani* impairs macrophage-T cell cross-talk and host defense. J. Immunol. 204: 596-610.
10. Yin, N., et al. 2020. Sinomenine alleviates lipopolysaccharide-induced inflammatory responses in RAW264.7 macrophages. Immunopharmacol. Immunotoxicol. 42: 147-155.

RESEARCH USE

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