SOCS3 siRNA – Suppressor of Cytokine Signaling 3 (Human)

PRODUCT OVERVIEW

Product Name	SOCS3, siRNA
Full Product Name	SOCS3 siRNA (Human)
Product Gene Name	SOCS3 sirna
Product Synonym Names	CIS3; SSI3; Suppressor of cytokine signaling 3; SOCS-3; Cytokine-inducible SH2 protein 3; CIS-3; STAT-induced STAT inhibitor 3; SSI-3
Host	Synthetic
Species Reactivity	Human
Form/Format	Lyophilized powder
Purity/Purification	> 97%
Specificity	SOCS3 siRNA (Human) is a target-specific 19-23 nt siRNA oligo duplexes designed to knock down gene expression.
Preparation and Storage	Shipped at 4 degree C. Store at -20 degree C for one year.
Molecular Weight	24,770 Da
OMIM	604176
3D Structure	ModBase 3D Structure for O14543
Negative Control	siRNA Negative Control (Catalog# MBS8241404) is a non-targeting 21 nt siRNA recommended as a negative control for experiments using targeted siRNA transfection.
Quality Control	Oligonucleotide synthesis is monitored base by base through trityl analysis to ensure appropriate coupling efficiency. The oligo is subsequently purified by affinity-solid phase extraction. The annealed RNA duplex is further analyzed by mass spectrometry to verify the exact composition of the duplex. Each lot is compared to the previous lot by mass spectrometry to ensure maximum lot-to-lot consistency.
Directions for Use	We recommends transfection with 100 nM siRNA 48 to 72 hours prior to cell lysis. Before resuspending, briefly centrifuge the tube to ensure the lyophilized siRNA is at the bottom of the tube. Resuspend the siRNA oligos to an appropriate concentration with DEPC water. For each vial, suitable for 250 transfections in 24 well plate (20 pmol for each well).
Components	We offer pre-designed sets of 3 different target-specific siRNA oligo duplexes of human SOCS3 gene. Each vial contains 5 nmol of lyophilized siRNA. The duplexes can be transfected individually or pooled together to achieve knockdown of the target gene, which is most commonly assessed by qPCR or western blot. Our siRNA oligos are also chemically modified (2'-OMe) at no extra charge for increased stability and enhanced knockdown in vitro and in vivo.
Applications Tested/Suitable for SOCS3 sirna	RNA Interference (RNAi)
Related Product Information for SOCS3 sirna	MBS828987 is an siRNA targeting SOCS3. Also known as SOCS3 siRNA (Human). Reactive in Human. Host: Synthetic. siRNA to inhibit SOCS3 expression using RNA interference
Other Notes	Small volumes of SOCS3 sirna vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for SOCS3. It may not necessarily be applicable to this product.

NCBI GI #	45439352
NCBI GeneID	9021
NCBI Accession #	NP_003946.3
UniProt Primary Accession #	O14543
UniProt Secondary Accession #	O14509
UniProt Related Accession #	O14543
GenBank Nucleotide #	NM_003955.4
NCBI Official Full Name	suppressor of cytokine signaling 3
NCBI Official Synonym Full Names	suppressor of cytokine signaling 3
NCBI Official Symbol	SOCS3
NCBI Official Synonym Symbols	CIS3; SSI3; ATOD4; Cish3; SSI-3; SOCS-3
UniProt Protein Name	Suppressor of cytokine signaling 3
UniProt Synonym Protein Names	Cytokine-inducible SH2 protein 3; CIS-3; STAT-induced STAT inhibitor 3; SSI-3
Protein Family	Suppressor of cytokine signaling
UniProt Gene Name	SOCS3
UniProt Synonym Gene Names	CIS3; SSI3; SOCS-3; CIS-3; SSI-3
UniProt Entry Name	SOCS3_HUMAN
NCBI Protein Information	suppressor of cytokine signaling 3
NCBI Summary for SOCS3	This gene encodes a member of the STAT-induced STAT inhibitor (SSI), also known as suppressor of cytokine signaling (SOCS), family. SSI family members are cytokine-inducible negative regulators of cytokine signaling. The expression of this gene is induced by various cytokines, including IL6, IL10, and interferon (IFN)-gamma. The protein encoded by this gene can bind to JAK2 kinase, and inhibit the activity of JAK2 kinase. Studies of the mouse counterpart of this gene suggested the roles of this gene in the negative regulation of fetal liver hematopoiesis, and placental development. [provided by RefSeq, Jul 2008]

UniProt Comments for SOCS3	SOCS3: SOCS family proteins form part of a classical negative feedback system that regulates cytokine signal transduction. SOCS3 is involved in negative regulation of cytokines that signal through the JAK/STAT pathway. Inhibits cytokine signal transduction by binding to tyrosine kinase receptors including gp130, LIF, erythropoietin, insulin, IL12, GCSF and leptin receptors. Binding to JAK2 inhibits its kinase activity. Suppresses fetal liver erythropoiesis. Regulates onset and maintenance of allergic responses mediated by T-helper type 2 cells. Regulates IL-6 signaling in vivo. Probable substrate recognition component of a SCF-like ECS (Elongin BC-CUL2/5-SOCS-box protein) E3 ubiquitin-protein ligase complex which mediates the ubiquitination and subsequent proteasomal degradation of target proteins. Seems to recognize IL6ST. Interacts with multiple activated proteins of the tyrosine kinase signaling pathway including IGF1 receptor, insulin receptor and JAK2. Binding to JAK2 is mediated through the KIR and SH2 domains to a phosphorylated tyrosine residue within the JAK2 JH1 domain. Binds specific activated tyrosine residues of the leptin, EPO, IL12, GSCF and gp130 receptors. Interaction with CSNK1E stabilizes SOCS3 protein. Component of the probable ECS(SOCS3) E3 ubiquitin-protein ligase complex which contains CUL5, RNF7/RBX2, Elongin BC complex and SOCS3. Interacts with CUL5, RNF7, TCEB1 and TCEB2. Interacts with CUL2. Interacts with FGFR3. Interacts with INSR. Widely expressed with high expression in heart, placenta, skeletal muscle, peripheral blood leukocytes, fetal and adult lung, and fetal liver and kidney. Lower levels in thymus. Protein type: Inhibitor Chromosomal Location of Human Ortholog: 17q25.3 Cellular Component: cytoplasm; cytosol Molecular Function: protein binding; protein kinase inhibitor activity Biological Process: negative regulation of inflammatory response; regulation of growth; cytokine and chemokine mediated signaling pathway; protein ubiquitination; negative regulation of protein kinase activity; negative regulation of insulin receptor signaling pathway; JAK-STAT cascade; positive regulation of cell differentiation; negative regulation of JAK-STAT cascade; negative regulation of apoptosis Disease: Dermatitis, Atopic, 4
Research Articles on SOCS3	**1.** SOCS3 and STAT3 are the major controllers of the outcome of infection with Mycobacterium tuberculosis. (Review)
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