

STAM siRNA (h): sc-41043

BACKGROUND

Cytokine stimulation of the IL-2 receptor leads to the tyrosine phosphorylation of a number of cellular proteins and to the induction of various transcription factors including c-Fos and c-Myc. The signal transducing adaptor molecule, STAM, is speculated to play a role in c-Myc induction by various cytokines. STAM contains an SH3 (Src homology 3) motif as well as an immunoreceptor tyrosine-based activation (ITAM) motif, both of which appear to be required for c-Myc induction in response to IL-2 and GM-CSF. STAM associates with JAK3 and JAK2 via its ITAM region, and it is tyrosine phosphorylated by JAK3 and JAK2 after stimulation with IL-2 and GM-CSF, respectively.

REFERENCES

1. Miyazaki, T., et al. 1994. Functional activation of JAK1 and JAK3 by selective association with IL-2 receptor subunits. *Science* 266: 1045-1047.
2. Taniguchi, T. 1995. Cytokine signaling through nonreceptor protein tyrosine kinases. *Science* 268: 251-255.
3. Ihle, J.N., et al. 1995. Signaling through the hematopoietic cytokine receptors. *Annu. Rev. Immunol.* 13: 369-398.
4. Minami, Y., et al. 1995. Protein tyrosine kinase Syk is associated with and activated by the IL-2 receptors: possible link with the c-Myc induction pathway. *Immunity* 2: 89-100.
5. Kawahara, A., et al. 1995. Critical role for the Interleukin 2 (IL-2) receptor γ -chain-associated JAK3 in the IL-2 induced c-Fos and c-Myc, but not Bcl-2, gene induction. *Proc. Natl. Acad. Sci. USA* 92: 8724-8728.
6. Takeshita, T., et al. 1996. Cloning of a novel signal-transducing adaptor molecule containing an SH3 domain and ITAM. *Biochem. Biophys. Res. Commun.* 225: 1035-1039.
7. Takeshita, T., et al. 1997. STAM, signal transducing adaptor molecule, is associated with Janus kinases and involved in signaling for cell growth and c-Myc induction. *Immunity* 6: 449-457.

CHROMOSOMAL LOCATION

Genetic locus: STAM (human) mapping to 10p12.33.

PRODUCT

STAM 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see STAM shRNA Plasmid (h): sc-41043-SH and STAM shRNA (h) Lentiviral Particles: sc-41043-V as alternate gene silencing products.

For independent verification of STAM (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-41043A, sc-41043B and sc-41043C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support 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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

STAM siRNA (h) is recommended for the inhibition of STAM 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 μ M in 66 μ l. 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

STAM (B-2): sc-133093 is recommended as a control antibody for monitoring of STAM 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor STAM gene expression knockdown using RT-PCR Primer: STAM (h)-PR: sc-41043-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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