SANTA CRUZ BIOTECHNOLOGY, INC.

STAM2 siRNA (m): sc-76585

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 adapter 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. STAM2, also known as Hbp, is a protein that is highly related to STAM. Similar to STAM, STAM2 functions downstream of JAK kinases and can be phosphorylated in response to cytokines. Due to alternative splicing events, two isoforms of STAM2 exist, namely STAM2A and STAM2B.

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: Stam2 (mouse) mapping to 2 C1.1.

PRODUCT

STAM2 siRNA (m) 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 STAM2 shRNA Plasmid (m): sc-76585-SH and STAM2 shRNA (m) Lentiviral Particles: sc-76585-V as alternate gene silencing products.

For independent verification of STAM2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-76585A, sc-76585B and sc-76585C.

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

STAM2 siRNA (m) is recommended for the inhibition of STAM2 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.

GENE EXPRESSION MONITORING

STAM2 (F-11): sc-365600 is recommended as a control antibody for monitoring of STAM2 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 STAM2 gene expression knockdown using RT-PCR Primer: STAM2 (m)-PR: sc-76585-PR (20 µl). 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.

PROTOCOLS

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