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SANTA CRUZ BIOTECHNOLOGY, INC.

StIP1 siRNA (h2): sc-156152

BACKGROUND

One member of the STAT family, Stat3, participates in a wide range of biological processes including nephrogenesis, gliogenesis, hepatogenesis, T cell proliferation, inflammation and oncogenesis. Many of these responses are triggered by the IL-6 family of cytokines, which transduce their vital signals through a common gp130 receptor chain. A novel Stat3-interacting protein, StIP1, contains 12 WD40 repeats, which mediate protein-protein interactions. StIP1 exhibits an affinity for members of the JNK family and may play a specific role in regulating Stat3 activation. Overexpression of StIP1 blocks Stat3 activation, nuclear translocation and Stat3-dependent induction of a reporter gene, suggesting that StIP1 regulates the ligand-dependent activation of Stat3, probably by serving as a scaffold protein that promotes the interaction between JNK and the Stat3 substrate. Because StIP1 can associate with several other members of the Stat family, it may serve a broad role in cytokine-signaling events.

REFERENCES

1. Darnell, J.E. 1997. STATs and gene regulation. Science 277: 1630-1635.
2. Bonni, A., et al. 1997. Regulation of gliogenesis in the central nervous system by the JAK-STAT signaling pathway. Science 278: 477-483.
3. Boccaccio, C., et al. 1998. Induction of epithelial tubules by growth factor HGF depends on the STAT pathway. Nature 391: 285-288.
4. Bromberg, J.F., et al. 1999. Stat3 as an oncogene. Cell 98: 295-303.
5. Barasch, J., et al. 1999. Mesenchymal to epithelial conversion in rat metanephros is induced by LIF. Cell 99: 377-386.
6. Smith, T.F., et al. 1999. The WD repeat: a common architecture for diverse functions. Trends Biochem. Sci. 24: 181-185.
7. Sano, S., et al. 2000. Keratinocyte-specific ablation of Stat3 exhibits impaired skin remodeling, but does not affect skin morphogenesis. EMBO J. 18: 4657-4668.
8. Collum, R.G., et al. 2000. A Stat3-interacting protein (StIP1) regulates cytokine signal transduction. Proc. Natl. Acad. Sci. USA 97: 10120-10125.

CHROMOSOMAL LOCATION

Genetic locus: ELP2 (human) mapping to 18q12.2.

PRODUCT

StIP1 siRNA (h2) 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 StIP1 shRNA Plasmid (h2): sc-156152-SH and StIP1 shRNA (h2) Lentiviral Particles: sc-156152-V as alternate gene silencing products.

For independent verification of StIP1 (h2) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-156152A, sc-156152B and sc-156152C.

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

StIP1 siRNA (h2) is recommended for the inhibition of StIP1 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.

GENE EXPRESSION MONITORING

StIP1 (C-5): sc-393475 is recommended as a control antibody for monitoring of StIP1 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 StIP1 gene expression knockdown using RT-PCR Primer: StIP1 (h2)-PR: sc-156152-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.