

STI1 siRNA (h): sc-106905

BACKGROUND

Stress-induced-phosphoprotein 1 (STI1) functions as a co-chaperone for HSP70 and HSP90 during heat shock response. STI1 exists as either a monomer or a dimer, and this conformational flexibility facilitates its function in organizing HSP 70/HSP 90. HSP90 acts as an ATPase, and requires the recruitment of client proteins and proper conformation to function. STI1 acts as a "scaffold" for client protein recruitment to the relaxed, ADP-bound conformation of HSP90, thus suppressing ATP turnover during the loading phase and allowing proper function.

REFERENCES

1. Honore, B., et al. 1992. Molecular cloning and expression of a transformation-sensitive human protein containing the TPR motif and sharing identity to the stress-inducible yeast protein STI1. *J. Biol. Chem.* 267: 8485-8491.
2. van der Spuy, J., et al. 2001. The co-chaperone murine stress-inducible protein 1: overexpression, purification, and characterization. *Protein Expr. Purif.* 21: 462-469.
3. Siligardi, G., et al. 2002. Regulation of HSP 90 ATPase activity by the co-chaperone Cdc37p/p50^{Cdc37}. *J. Biol. Chem.* 277: 20151-20159.
4. Abbas-Terki, T., et al. 2002. The HSP 90 co-chaperones Cdc37 and STI1 interact physically and genetically. *Biol. Chem.* 383: 1335-1342.
5. Zanata, S.M., et al. 2002. Stress-inducible protein 1 is a cell surface ligand for cellular prion that triggers neuroprotection. *EMBO J.* 21: 3307-3316.
6. Richter, K., et al. 2003. Sti1 is a non-competitive inhibitor of the HSP 90 ATPase. Binding prevents the N-terminal dimerization reaction during the ATPase cycle. *J. Biol. Chem.* 278: 10328-10333.

CHROMOSOMAL LOCATION

Genetic locus: STIP1 (human) mapping to 11q13.1.

PRODUCT

STI1 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 STI1 shRNA Plasmid (h): sc-106905-SH and STI1 shRNA (h) Lentiviral Particles: sc-106905-V as alternate gene silencing products.

For independent verification of STI1 (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-106905A, sc-106905B and sc-106905C.

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

STI1 siRNA (h) is recommended for the inhibition of STI1 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

STI1 (D-6): sc-390203 is recommended as a control antibody for monitoring of STI1 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 STI1 gene expression knockdown using RT-PCR Primer: STI1 (h)-PR: sc-106905-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Burrell, H., et al. 2019. HSC 70 and HSP 90 chaperones perform complementary roles in translocation of the cholera toxin A1 subunit from the endoplasmic reticulum to the cytosol. *J. Biol. Chem.* 294: 12122-12131.

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.