



STAU1 siRNA (h): sc-76586

BACKGROUND

STAU1 (Staufen, RNA binding protein, homolog 1) is a 577 amino acid protein that contains three double-stranded RNA-binding domains and is a mammalian homolog of *staufer*, a *Drosophila* protein that is involved in mRNA transport during oogenesis and zygotic development. Localized to the rough endoplasmic reticulum (RER) and expressed in a variety of tissues, including heart, brain, liver, lung, pancreas, kidney and placenta, STAU1 binds to both Tubulin and double-stranded RNA and is thought to play an important role in mRNA transport from the microtubule network to the RER. Additionally, STAU1 may be involved in cross-linking cytoskeletal components with RNA, an event that is important for proper mRNA positioning during translation. Alternative splicing of the STAU1 gene yields two STAU1 isoforms, designated short and long.

REFERENCES

1. DesGroseillers, L. and Lemieux, N. 1996. Localization of a human double-stranded RNA-binding protein gene (STAU) to band 20q13.1 by fluorescence *in situ* hybridization. *Genomics* 36: 527-529.
2. Wickham, L., et al. 1999. Mammalian *staufer* is a double-stranded-RNA- and Tubulin-binding protein which localizes to the rough endoplasmic reticulum. *Mol. Cell. Biol.* 19: 2220-2230.
3. Luo, M., et al. 2002. Molecular mapping of the determinants involved in human Staufen-ribosome association. *Biochem. J.* 365: 817-824.
4. Brendel, C., et al. 2004. Characterization of Staufen 1 ribonucleoprotein complexes. *Biochem. J.* 384: 239-246.

CHROMOSOMAL LOCATION

Genetic locus: STAU1 (human) mapping to 20q13.13.

PRODUCT

STAU1 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 STAU1 shRNA Plasmid (h): sc-76586-SH and STAU1 shRNA (h) Lentiviral Particles: sc-76586-V as alternate gene silencing products.

For independent verification of STAU1 (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-76586A, sc-76586B and sc-76586C.

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

STAU1 siRNA (h) is recommended for the inhibition of STAU1 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

STAU1 (C-4): sc-390820 is recommended as a control antibody for monitoring of STAU1 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 STAU1 gene expression knockdown using RT-PCR Primer: STAU1 (h)-PR: sc-76586-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. Dixit, U., et al. 2016. Staufen1 promotes HCV replication by inhibiting protein kinase R and transporting viral RNA to the site of translation and replication in the cells. *Nucleic Acids Res.* 44: 5271-5287.
2. Park, S., et al. 2023. The mammalian midbody and midbody remnant are assembly sites for RNA and localized translation. *Dev. Cell* 58: 1917-1932.e6.

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.