SANTA CRUZ BIOTECHNOLOGY, INC.

SR-β siRNA (h): sc-78449

BACKGROUND

The β-subunit of the signal recognition particle receptor (SR-β), a member of the Ras family of small molecular weight GTPases, targets nascent polypeptides to the protein translocation machinery in the ER. The signal recognition particle receptor (SRP) is a heterodimer of two polypeptides, SR-α and SR-β, that are 72 kDa and 30 kDa respectively. The interaction of three GTPases, SRP54, SR-α, and SR-β, controls cotranslational protein transport to the ER. SR-β regulates the interaction of SR with the ribosome and thereby allows SR-α to scan membrane-bound ribosomes for the presence of SRP.

REFERENCES

1. Young, J.C., et al. 1995. An amino-terminal domain containing hydrophobic and hydrophilic sequences binds the signal recognition particle receptor a subunit to the β subunit on the endoplasmic reticulum membrane. J. Biol. Chem. 270: 15650-15657.
2. Bacher, G., et al. 1999. The ribosome regulates the GTPase of the β-subunit of the signal recognition particle receptor. J. Cell Biol. 146: 723-730.
3. Legate, K.R., et al. 2000. Nucleotide-dependent binding of the GTPase domain of the signal recognition particle receptor β-subunit to the α-subunit. J. Biol. Chem. 275: 27439-27446.
4. Helmers, J., et al. 2003.The β-subunit of the protein-conducting channel of the endoplasmic reticulum functions as the guanine nucleotide exchange factor for the β-subunit of the signal recognition particle receptor. J. Biol. Chem. 278: 23686-23690.
5. Legate, K.R, et al. 2003. The β-subunit of the signal recognition particle receptor is a novel GTP-binding protein without intrinsic GTPase activity. J. Biol. Chem. 278: 27712-27720.

CHROMOSOMAL LOCATION

Genetic locus: SRPRB (human) mapping to 3q22.1.

PRODUCT

SR-β 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SR-β shRNA Plasmid (h): sc-78449-SH and SR-β shRNA (h) Lentiviral Particles: sc-78449-V as alternate gene silencing products.

For independent verification of SR-β (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-78449A, sc-78449B and sc-78449C.

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.

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

SR-β siRNA (h) is recommended for the inhibition of SR-β 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

SR-β (D-4): sc-376723 is recommended as a control antibody for monitoring of SR-β 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 SR-β gene expression knockdown using RT-PCR Primer: SR-β (h)-PR: sc-78449-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.