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SANTA CRUZ BIOTECHNOLOGY, INC.

Ramp4 siRNA (m): sc-152693

BACKGROUND

Ramp4 (ribosome-attached membrane protein 4), also known as SERP1 (stress-associated endoplasmic reticulum protein 1), is a 66 amino acid single pass type IV membrane protein that belongs to the RAMP4 family. Ramp4 interacts with target proteins during their translocation into the lumen of the endoplasmic reticulum (ER), and may modulate the use of N-glycosylation sites on target proteins. While it protects unfolded target proteins against degradation during ER stress, Ramp4 may facilitate glycosylation of target proteins after termination of ER stress. The gene that encodes Ramp4 maps to human chromosome 3q25.1.

REFERENCES

1. Macen, J.L., et al. 1993. SERP1, a serine proteinase inhibitor encoded by myxoma virus, is a secreted glycoprotein that interferes with inflammation. Virology 195: 348-363.
2. Yamaguchi, A., et al. 1999. Stress-associated endoplasmic reticulum protein 1 (SERP1)/Ribosome-associated membrane protein 4 (RAMP4) stabilizes membrane proteins during stress and facilitates subsequent glycosylation. J. Cell Biol. 147: 1195-1204.
3. Hausen, B., et al. 2001. Viral serine proteinase inhibitor (SERP-1) effectively decreases the incidence of graft vasculopathy in heterotopic heart allografts. Transplantation 72: 364-368.
4. Bot, I., et al. 2003. Serine protease inhibitor Serp-1 strongly impairs atherosclerotic lesion formation and induces a stable plaque phenotype in ApoE$^{-/-}$ mice. Circ. Res. 93: 464-471.
5. Hori, O., et al. 2006. Deletion of SERP1/RAMP4, a component of the endoplasmic reticulum (ER) translocation sites, leads to ER stress. Mol. Cell. Biol. 26: 4257-4267.
6. Bedard, E.L., et al. 2006. Prevention of chronic renal allograft rejection by SERP-1 protein. Transplantation 81: 908-914.
7. Jiang, J., et al. 2007. Induction of indefinite cardiac allograft survival correlates with toll-like receptor 2 and 4 downregulation after serine protease inhibitor-1 (Serp-1) treatment. Transplantation 84: 1158-1167.

CHROMOSOMAL LOCATION

Genetic locus: Serp1 (mouse) mapping to 3 D.

PRODUCT

Ramp4 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 Ramp4 shRNA Plasmid (m): sc-152693-SH and Ramp4 shRNA (m) Lentiviral Particles: sc-152693-V as alternate gene silencing products.

For independent verification of Ramp4 (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-152693A, sc-152693B and sc-152693C.

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

Ramp4 siRNA (m) is recommended for the inhibition of Ramp4 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Ramp4 gene expression knockdown using RT-PCR Primer: Ramp4 (m)-PR: sc-152693-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.