SANTA CRUZ BIOTECHNOLOGY, INC.

SPCS2 siRNA (m): sc-153731

BACKGROUND

SPCS2 (signal peptidase complex subunit 2), also known as SPC25 or microsomal signal peptidase 25 kDa subunit, is a 226 amino acid multi-pass membrane protein that localizes to both the microsome and the endoplasmic reticulum (ER), and belongs to the SPCS (signal peptidase complex subunit) family. Existing as a component of the microsomal signal peptidase complex which consists of five members, SPCS2 removes signal peptides from nascent proteins as they are translocated into the lumen of the ER. The gene encoding SPCS2 is located on human chromosome 11, which houses over 1,400 genes and comprises nearly 4% of the human genome. Jervell and Lange-Nielsen syndrome, Jacobsen syndrome, Niemann-Pick disease, hereditary angioedema and Smith-Lemli-Opitz syndrome are associated with defects in genes that maps to chromosome 11.

REFERENCES

1. Cioffi, J.A., Allen, K.L., Lively, M.O. and Kemper, B. 1989. Parallel effects of signal peptide hydrophobic core modifications on co-translational translocation and post-translational cleavage by purified signal peptidase. J. Biol. Chem. 264: 15052-15058.
2. Shelness, G.S. and Blobel, G. 1990. Two subunits of the canine signal peptidase complex are homologous to yeast SEC11 protein. J. Biol. Chem. 265: 9512-9519.
3. Shelness, G.S., Lin, L. and Nicchitta, C.V. 1993. Membrane topology and biogenesis of eukaryotic signal peptidase. J. Biol. Chem. 268: 5201-5208.
4. Greenburg, G. and Blobel, G. 1994. cDNA-derived primary structure of the 25-kDa subunit of canine microsomal signal peptidase complex. J. Biol. Chem. 269: 25354-25358.
5. Lyko, F., Martoglio, B., Jungnickel, B., Rapoport, T.A. and Dobberstein, B. 1995. Signal sequence processing in rough microsomes. J. Biol. Chem. 270: 19873-19878.
6. Kalies, K.U. and Hartmann, E. 1996. Membrane topology of the 12- and the 25-kDa subunits of the mammalian signal peptidase complex. J. Biol. Chem. 271: 3925-3929.
7. Kalies, K.U., Rapoport, T.A. and Hartmann, E. 1998. The β subunit of the Sec61 complex facilitates cotranslational protein transport and interacts with the signal peptidase during translocation. J. Cell Biol. 141: 887-894.

CHROMOSOMAL LOCATION

Genetic locus: Spcs2 (mouse) mapping to 7 E2.

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.

PRODUCT

SPCS2 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 SPCS2 shRNA Plasmid (m): sc-153731-SH and SPCS2 shRNA (m) Lentiviral Particles: sc-153731-V as alternate gene silencing products.

For independent verification of SPCS2 (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-153731A, sc-153731B and sc-153731C.

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

SPCS2 siRNA (m) is recommended for the inhibition of SPCS2 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 SPCS2 gene expression knockdown using RT-PCR Primer: SPCS2 (m)-PR: sc-153731-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.