SANTA CRUZ BIOTECHNOLOGY, INC.

SCAMP3 siRNA (h): sc-41294

BACKGROUND

Secretory carrier membrane proteins (SCAMPs) are components of the post Golgi membranes and are invovled in endocytosis, vesicle recycling and membrane trafficking. The structural features of SCAMPs include multiple N-terminal NPF repeats and four highly conserved transmembrane regions. These NPF repeats frequently interact with EH domain proteins and aid in the budding of transport vesicles from the plasma membrane or the Golgi complex. Endocytic budding at the plasma membrane and vesicle budding at the *trans*-Golgi complex facilitates binding of SCAMP proteins to EH domain proteins. SCAMPs exist as distinct but related proteins that include SCAMP1, SCAMP2, and SCAMP3. Tyrosine-phosphorylation by the epidermal growth factor-receptor of SCAMP1 and SCAMP3 suggests that SCAMPs are regulated by phosphorylation. Although SCAMPs are ubiquitously expressed throughout all tissue, in neural tissue the synaptic vesicles express a particularly high concentration of SCAMP1.

REFERENCES

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2. Brand, S.H. and Castle, J.D. 1993. SCAMP 37, a new marker within the general cell surface recycling system. EMBO J. 12: 3753-3761.
3. Laurie, S.M., et al. 1993. The glucose transporter GluT4 and secretory carrier membrane proteins (SCAMPs) colocalize in rat adipocytes and partially segregate during Insulin stimulation. J. Biol. Chem. 268: 19110-19117.
4. Wu, T.T. and Castle, J.D. 1997. Evidence for colocalization and interacion beween 37 and 39 kDa isoforms of secretory carrier membrane proteins (SCAMPs). J. Cell Sci. 110: 1533-1541.
5. DeBeer, T., et al. 1998. Structure and Asn-Pro-Phe binding pocket of the Eps15 homology domain. Science 281: 1357-1360.
6. Paoluzi, S., et al. 1998. Recognition specificity of individual EH domains of mammals and yeast. EMBO J. 17: 6541-6550.
7. Wu, T.T., et al. 1998. Tyrosine pohshorylation of selected secretory carrier membrane proteins, SCAMP1 and SCAMP3, and association with the EGF receptor. Mol. Biol. Cell 9: 1661-1674.
8. Fernadez-Chacon, R., et al. 2000. SCAMP1 function in endocytosis. J. Biol. Chem. 275: 12752-12756.
9. Fernadez-Chacon, R., et al. 2000. Novel SCAMPs lacking NPF repeats: ubiquitous and synaptic vescle-specific forms implicate SCAMPs in multiple membrane-trafficking functions. J. Neurosci. 20: 7941-7950.

CHROMOSOMAL LOCATION

Genetic locus: SCAMP3 (human) mapping to 1q22.

PPROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

RODUCT

SCAMP3 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 SCAMP3 shRNA Plasmid (h): sc-41294-SH and SCAMP3 shRNA (h) Lentiviral Particles: sc-41294-V as alternate gene silencing products.

For independent verification of SCAMP3 (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-41294A, sc-41294B and sc-41294C.

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

SCAMP3 siRNA (h) is recommended for the inhibition of SCAMP3 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SCAMP3 gene expression knockdown using RT-PCR Primer: SCAMP3 (h)-PR: sc-41294-PR (20 µl, 560 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Acevedo-Díaz, A., et al. 2022. SCAMP3 regulates EGFR and promotes proliferation and migration of triple-negative breast cancer cells through the modulation of AKT, ERK, and STAT3 signaling pathways. Cancers 14: 2807.

RESEARCH USE

For research use only, not for use in diagnostic procedures.