SANTA CRUZ BIOTECHNOLOGY, INC.

SEC16L siRNA (h): sc-92653

BACKGROUND

SEC16L, also known as SEC16A, is a 2,179 amino acid ubiquitously expressed protein that belongs to the SEC16 family. SEC16L and SEC16S are each present in multiple copies in a heteromeric complex. The SEC16L protein is required for normal transitional endoplasmic reticulum (tER) organization. The SEC16L protein defines endoplasmic reticulum exit sites (ERES) and is required for secretory cargo traffic from the endoplasmic reticulum to the Golgi apparatus. SAR1A-GTP-dependent assembly of SEC16L on the ER membrane forms an organized scaffold defining an ERES. By directing ERES assembly, SEC16L ensures that intracellular architecture of the cell is restored quickly and effectively on exit from mitosis. SEC16L also interacts with SEC23A. SEC16L is phosphorylated upon DNA damage, most likely by Atm or ATR. Existing as five alternatively spliced isoforms, the SEC16L gene is conserved in chimpanzee, canine, bovine, mouse, rat, chicken and zebrafish, and maps to human chromosome 9q34.3.

REFERENCES

1. Nagase, T., Ishikawa, K., Nakajima, D., Ohira, M., Seki, N., Miyajima, N., Tanaka, A., Kotani, H., Nomura, N. and Ohara, O. 1997. Prediction of the coding sequences of unidentified human genes. VII. The complete sequences of 100 new cDNA clones from brain which can code for large proteins *in vitro*. DNA Res. 4: 141-150.
2. Watson, P., Townley, A.K., Koka, P., Palmer, K.J. and Stephens, D.J. 2006. Sec16 defines endoplasmic reticulum exit sites and is required for secretory cargo export in mammalian cells. Traffic 7: 1678-1687.
3. Iinuma, T., Shiga, A., Nakamoto, K., O'Brien, M.B., Aridor, M., Arimitsu, N., Tagaya, M. and Tani, K. 2007. Mammalian Sec16/p250 plays a role in membrane traffic from the endoplasmic reticulum. J. Biol. Chem. 282: 17632-17639.
4. Bhattacharyya, D. and Glick, B.S. 2007. Two mammalian Sec16 homologues have nonredundant functions in endoplasmic reticulum (ER) export and transitional ER organization. Mol. Biol. Cell 18: 839-849.
5. Matsuoka, S., Ballif, B.A., Smogorzewska, A., McDonald, E.R., Hurov, K.E., Luo, J., Bakalarski, C.E., Zhao, Z., Solimini, N., Lerenthal, Y., Shiloh, Y., Gygi, S.P. and Elledge, S.J. 2007. ATM and ATR substrate analysis reveals extensive protein networks responsive to DNA damage. Science 316: 1160-1166.
6. Hughes, H., Budnik, A., Schmidt, K., Palmer, K.J., Mantell, J., Noakes, C., Johnson, A., Carter, D.A., Verkade, P., Watson, P. and Stephens, D.J. 2009. Organisation of human ER-exit sites: requirements for the localisation of Sec16 to transitional ER. J. Cell Sci. 122: 2924-2934.
7. Online Mendelian Inheritance in Man, OMIM™. 2009. Johns Hopkins University, Baltimore, MD. MIM Number: 612854. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
8. Hughes, H. and Stephens, D.J. 2010. Sec16A defines the site for vesicle budding from the endoplasmic reticulum on exit from mitosis. J. Cell Sci. 123: 4032-4038.

CHROMOSOMAL LOCATION

Genetic locus: SEC16A (human) mapping to 9q34.3.

PRODUCT

SEC16L 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 SEC16L shRNA Plasmid (h): sc-92653-SH and SEC16L shRNA (h) Lentiviral Particles: sc-92653-V as alternate gene silencing products.

For independent verification of SEC16L (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-92653A, sc-92653B and sc-92653C.

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

SEC16L siRNA (h) is recommended for the inhibition of SEC16L 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 SEC16L gene expression knockdown using RT-PCR Primer: SEC16L (h)-PR: sc-92653-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.