

Sec1 siRNA (m): sc-153294

BACKGROUND

The secretory pathway carries newly synthesized integral membrane and secretory proteins from the ER to the cell surface. This pathway involves a series of vesicle budding and fusion events to carry cargo forward, and it is coordinated with a retrograde transport pathway that serves to recycle membrane components and soluble resident proteins. The *Saccharomyces cerevisiae* genes, SLY1, SEC1, Vps45 (Stt10), and VPS33 (SLP1), belong to a common gene family called the Sec1/Munc18 (SM) family proteins, which are involved in vesicle trafficking, synaptic transmission and general secretion among yeast cellular compartments (2-5). The mostly hydrophilic SM proteins lack a transmembrane domain, but nevertheless, remain membrane-bound. SM proteins may participate in positive and negative regulation of SNARE complex formation. SM proteins functionally interact with soluble N-ethylmaleimide-sensitive factor attachment protein receptors (SNARE) in membrane fusion.

REFERENCES

1. Salzberg, A., Cohen, N., Halachmi, N., Kimchie, Z. and Lev, Z. 1993. The *Drosophila* Ras2 and Rop gene pair: a dual homology with a yeast Ras-like gene and a suppressor of its loss-of-function phenotype. *Development* 117: 1309-1319.
2. Halachmi, N. and Lev, Z. 1996. The Sec1 family: a novel family of proteins involved in synaptic transmission and general secretion. *J. Neurochem.* 66: 889-897.
3. Grote, E., Carr, C.M. and Novick, P.J. 2000. Ordering the final events in yeast exocytosis. *J. Cell Biol.* 151: 439-452.
4. Kosodo, Y., Imai, K., Hirata, A., Noda, Y., Takatsuki, A., Adachi, H. and Yoda, K. 2001. Multicopy suppressors of the sly1 temperature-sensitive mutation in the ER-Golgi vesicular transport in *Saccharomyces cerevisiae*. *Yeast* 18: 1003-1014.
5. Brummer, M.H., Kivinen, K.J., Jantti, J., Toikkanen, J., Soderlund, H. and Keranen, S. 2001. Characterization of the Sec1-1 and Sec1-11 mutations. *Yeast* 18: 1525-1536.
6. Dulubova, I., Yamaguchi, T., Arac, D., Li, H., Huryeva, I., Min, S.W., Rizo, J. and Sudhof, T.C. 2003. Convergence and divergence in the mechanism of SNARE binding by Sec1/Munc18-like proteins. *Proc. Natl. Acad. Sci. USA* 100: 32-37.

CHROMOSOMAL LOCATION

Genetic locus: Sec1 (mouse) mapping to 7 B4.

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

Sec1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Sec1 shRNA Plasmid (m): sc-153294-SH and Sec1 shRNA (m) Lentiviral Particles: sc-153294-V as alternate gene silencing products.

For independent verification of Sec1 (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-153294A, sc-153294B and sc-153294C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Sec1 siRNA (m) is recommended for the inhibition of Sec1 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 μ M in 66 μ l. 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 Sec1 gene expression knockdown using RT-PCR Primer: Sec1 (m)-PR: sc-153294-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.