SANTA CRUZ BIOTECHNOLOGY, INC.

SEC13 siRNA (h): sc-78504

BACKGROUND

There are a number of components involved in the secretory pathway of *Saccharomyces cerevisiae,* which are collectively also known as the SEC gene products. Among these proteins, the yeast SAR1 gene encodes a low-molecular-weight GTPase that is essential for the formation of transport vesicles from the endoplasmic reticulum (ER). Vesicular traffic within the early secretory pathway is mediated by COPI- and COPII-coated vesicles. The COPII vesicle coat protein promotes the formation of ER derived transport vesicles that carry secretory proteins to the Golgi complex in yeast. This coat protein consists of Sar1, the Sec23 protein complex containing Sec23 and Sec24, and the Sec13 protein complex containing Sec13 and p150. p150 is encoded by the gene SEC31, which was intially isolated in a genetic screen for mutations that accumulate unprocessed forms of the secretory protein α-factor.

REFERENCES

1. Vahlensieck, Y., Riezman, H. and Meyhack, B. 1995. Transcriptional studies on yeast SEC genes provide no evidence for regulation at the transcriptional level. Yeast 11: 901-911.
2. Salama, N.R., Chuang, J.S. and Schekman, R.W. 1997. Sec31 encodes an essential component of the COPII coat required for transport vesicle budding from the endoplasmic reticulum. Mol. Biol. Cell 8: 205-217.
3. Shaywitz, D.A., Espenshade, P.J., Gimeno, R.E. and Kaiser, C.A. 1997. COPII subunit interactions in the assembly of the vesicle coat. J. Biol. Chem. 272: 25413-25416.
4. Nickel, W., Brugger, B. and Wieland, F.T. 1998. Protein and lipid sorting between the endoplasmic reticulum and the Golgi complex. Semin. Cell Dev. Biol. 9: 493-501.
5. Saito, Y., Yamanushi, T., Oka, T. and Nakano, A. 1999. Identification of SEC12, SED4, truncated SEC16, and EKS1/HRD3 as multicopy suppressors of ts mutants of Sar1 GTPase. J. Biochem. 125: 130-137.

CHROMOSOMAL LOCATION

Genetic locus: SEC13 (human) mapping to 3p25.3.

PRODUCT

SEC13 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 SEC13 shRNA Plasmid (h): sc-78504-SH and SEC13 shRNA (h) Lentiviral Particles: sc-78504-V as alternate gene silencing products.

For independent verification of SEC13 (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-78504A, sc-78504B and sc-78504C.

PROTOCOLS

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

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

SEC13 siRNA (h) is recommended for the inhibition of SEC13 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.

GENE EXPRESSION MONITORING

SEC13 (F-6): sc-514308 is recommended as a control antibody for monitoring of SEC13 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SEC13 gene expression knockdown using RT-PCR Primer: SEC13 (h)-PR: sc-78504-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.