

# SEC24A siRNA (h): sc-270321

## BACKGROUND

SEC24A (SEC24 family, member A) is a 1,093 amino acid protein belonging to the Sec24 subfamily and the Sec23/Sec24 protein family. Members of this family participate in vesicle trafficking from the endoplasmic reticulum (ER) to the Golgi apparatus. SEC24A is one of four mammalian proteins, namely SEC24A, SEC24B, SEC24C and SEC24D, that are highly related to the *Saccharomyces cerevisiae* protein Sec24, a component of the coat protein complex COPII that mediates the selective export of membrane proteins from the ER. Similar to its yeast counterpart, SEC24A functions as a component of the cytoplasmic COPII complex. The COPII complex acts as a coat, covering ER-derived transport vesicles and promoting the transport of secretory proteins to the Golgi apparatus. Localizing to the cytoplasm, SEC24A is expressed in fibroblasts, hepatocytes, and lymphocytes. SEC24A has the ability to form heterodimers with SEC24B and SEC24C, and exists as two alternatively spliced isoforms.

## REFERENCES

1. Tang, B.L., et al. 1999. A family of mammalian proteins homologous to yeast Sec24p. *Biochem. Biophys. Res. Commun.* 258: 679-684.
2. Pagano, A., et al. 1999. Sec24 proteins and sorting at the endoplasmic reticulum. *J. Biol. Chem.* 274: 7833-7840.
3. Wendeler, M.W., et al. 2007. Role of Sec24 isoforms in selective export of membrane proteins from the endoplasmic reticulum. *EMBO Rep.* 8: 258-264.
4. Mancias, J.D., et al. 2007. The transport signal on Sec22 for packaging into COPII-coated vesicles is a conformational epitope. *Mol. Cell* 26: 403-414.
5. Mancias, J.D., et al. 2008. Structural basis of cargo membrane protein discrimination by the human COPII coat machinery. *EMBO J.* 27: 2918-2928.
6. Faso, C., et al. 2009. A missense mutation in the *Arabidopsis* COPII coat protein SEC24A induces the formation of clusters of the endoplasmic reticulum and Golgi apparatus. *Plant Cell* 21: 3655-3671.
7. Nakano, R.T., et al. 2009. GNOM-LIKE1/ERMO1 and SEC24A/ERMO2 are required for maintenance of endoplasmic reticulum morphology in *Arabidopsis thaliana*. *Plant Cell* 21: 3672-3685.

## CHROMOSOMAL LOCATION

Genetic locus: SEC24A (human) mapping to 5q31.1.

## PRODUCT

SEC24A 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SEC24A shRNA Plasmid (h): sc-270321-SH and SEC24A shRNA (h) Lentiviral Particles: sc-270321-V as alternate gene silencing products.

For independent verification of SEC24A (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-270321A, sc-270321B and sc-270321C.

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

## APPLICATIONS

SEC24A siRNA (h) is recommended for the inhibition of SEC24A 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  $\mu$ M in 66  $\mu$ 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.

## GENE EXPRESSION MONITORING

SEC24A (4D9): sc-517155 is recommended as a control antibody for monitoring of SEC24A 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SEC24A gene expression knockdown using RT-PCR Primer: SEC24A (h)-PR: sc-270321-PR (20  $\mu$ l). 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](http://www.scbt.com) for detailed protocols and support products.