

Sec24D siRNA (m): sc-153313

BACKGROUND

Sec24D (Sec24-related protein D) is ubiquitously expressed but exhibits predominant expression in heart, placenta, liver and pancreas. Sec24D belongs to the Sec24 subfamily of the Sec23/Sec24 family of proteins. Members of this family participate in vesicle trafficking from the endoplasmic reticulum (ER) to the Golgi apparatus. Sec24D 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, Sec24D 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. Sec24D shares 50% amino acid identity with the ubiquitously expressed Sec24C protein.

REFERENCES

1. Nagase, T., Ishikawa, K., Suyama, M., Kikuno, R., Miyajima, N., Tanaka, A., Kotani, H., Nomura, N. and Ohara, O. 1998. Prediction of the coding sequences of unidentified human genes. XI. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 5: 277-286.
2. Tang, B.L., Kausalya, J., Low, D.Y., Lock, M.L. and Hong, W. 1999. A family of mammalian proteins homologous to yeast Sec24p. Biochem. Biophys. Res. Commun. 258: 679-684.
3. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607186. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Farhan, H., Korkhov, V.M., Paulitschke, V., Dorostkar, M.M., Scholze, P., Kudlacek, O., Freissmuth, M. and Sitte, H.H. 2004. Two discontinuous segments in the carboxyl terminus are required for membrane targeting of the rat γ -aminobutyric acid transporter-1 (GAT1). J. Biol. Chem. 279: 28553-28563.
5. Ishizuka, N., Minami, K., Okumachi, A., Okuno, M. and Seino, S. 2007. Induction by NeuroD of the components required for regulated exocytosis. Biochem. Biophys. Res. Commun. 354: 271-277.
6. Wendeler, M.W., Paccaud, J.P. and Hauri, H.P. 2007. Role of Sec24 isoforms in selective export of membrane proteins from the endoplasmic reticulum. EMBO Rep. 8: 258-264.
7. Farhan, H., Reiterer, V., Korkhov, V.M., Schmid, J.A., Freissmuth, M. and Sitte, H.H. 2007. Concentrative export from the endoplasmic reticulum of the γ -aminobutyric acid transporter 1 requires binding to Sec24D. J. Biol. Chem. 282: 7679-7689.
8. Fernández-Sánchez, E., Díez-Guerra, F.J., Cubelos, B., Gimenez, C. and Zafra, F. 2008. Mechanisms of endoplasmic-reticulum export of glycine transporter-1 (GLYT1). Biochem. J. 409: 669-681.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: Sec24d (mouse) mapping to 3 G1.

PRODUCT

Sec24D 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 Sec24D shRNA Plasmid (m): sc-153313-SH and Sec24D shRNA (m) Lentiviral Particles: sc-153313-V as alternate gene silencing products.

For independent verification of Sec24D (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-153313A, sc-153313B and sc-153313C.

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

Sec24D siRNA (m) is recommended for the inhibition of Sec24D 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 Sec24D gene expression knockdown using RT-PCR Primer: Sec24D (m)-PR: sc-153313-PR (20 μ 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.