SANTA CRUZ BIOTECHNOLOGY, INC.

ALG2 siRNA (h): sc-92608

BACKGROUND

Glycosylation of asparagine residues is an essential protein modification reaction that occurs upon most proteins that enter the secretory pathway in eukaryotic cells. Asparagine-linked oligosaccharides are transferred onto polypeptides in the lumen of the rough endoplasmic reticulum. ALG2 (asparagine-linked glycosylation 2) is a 416 amino acid single-pass membrane protein that localizes to the endoplasmic reticulum (ER). ALG14 is involved in protein mannosylation and specifically is involved in the synthesis of Man3-GlcNAc(2)-dolichol diphosphate. Defects in the gene encoding ALG2 is the cause of congential disorder of glycosylation type 1l, which results in severe systemic effects, such as psychomotor retardation, immunodeficiecy, dysmorphic features and defects in nervous system deveoplement. There are two isoforms of ALG2 that areproduced as a result of alternative splicing events.

REFERENCES

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2. Thiel, C., Schwarz, M., Peng, J., Grzmil, M., Hasilik, M., Braulke, T., Kohlschütter, A., von Figura, K., Lehle, L. and Körner, C. 2003. A new type of congenital disorders of glycosylation (CDG-li) provides new insights into the early steps of dolichol-linked oligosaccharide biosynthesis. J. Biol. Chem. 278: 22498-22505.
3. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 607905. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Gao, X.D., Nishikawa, A. and Dean, N. 2004. Physical interactions between the Alg1, Alg2, and Alg11 mannosyltransferases of the endoplasmic reticulum. Glycobiology 14: 559-570.
5. O'Reilly, M.K., Zhang, G. and Imperiali, B. 2006. *In vitro* evidence for the dual function of Alg2 and Alg11: essential mannosyltransferases in N-linked glycoprotein biosynthesis. Biochemistry 45: 9593-9603.

CHROMOSOMAL LOCATION

Genetic locus: ALG2 (human) mapping to 9q22.33.

PRODUCT

ALG2 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 ALG2 shRNA Plasmid (h): sc-92608-SH and ALG2 shRNA (h) Lentiviral Particles: sc-92608-V as alternate gene silencing products.

For independent verification of ALG2 (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-92608A, sc-92608B and sc-92608C.

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

ALG2 siRNA (h) is recommended for the inhibition of ALG2 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 ALG2 gene expression knockdown using RT-PCR Primer: ALG2 (h)-PR: sc-92608-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.