SANTA CRUZ BIOTECHNOLOGY, INC.

ALG3 siRNA (h): sc-78191

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

ALG3 (asparagine-linked glycosylation 3), also known as CDGS4, Not56 or NOT56L, is a 438 amino acid multi-pass membrane protein that localizes to the endoplasmic reticulum and participates in the pathway of protein glycosylation. One of several members of the glycosyltransferase superfamily, ALG3 functions to catalyze the transfer of an α-D-mannosyl residue from dolichyl-phosphate D-mannose onto a membrane lipid-linked oligosaccharide, thereby playing an essential role in protein modification events. Defects in the gene encoding ALG3 are the cause of congenital disorder of glycosylation type 1D (CDG1D), a metabolic deficiency that can lead to severe mental and psychomotor retardation.

REFERENCES

1. Körner, C., et al. 1999. Carbohydrate deficient glycoprotein syndrome type IV: deficiency of dolichyl-P-Man:$Man_5GlcNAc_2$-PP-dolichyl mannosyltransferase. EMBO J. 18: 6816-6822.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608750. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Jaeken, J. and Carchon, H. 2004. Congenital disorders of glycosylation: a booming chapter of pediatrics. Curr. Opin. Pediatr. 16: 434-439.
4. Denecke, J., et al. 2004. An activated 5' cryptic splice site in the human ALG3 gene generates a premature termination codon insensitive to nonsense-mediated mRNA decay in a new case of congenital disorder of glycosylation type Id (CDG-Id). Hum. Mutat. 23: 477-486.
5. Jaeken, J. 2004. Congenital disorders of glycosylation (CDG): update and new developments. J. Inherit. Metab. Dis. 27: 423-426.
6. Schollen, E., et al. 2005. CDG-Id caused by homozygosity for an ALG3 mutation due to segmental maternal isodisomy UPD3(q21.3-qter). Eur. J. Med. Genet. 48: 153-158.
7. Denecke, J., et al. 2005. Congenital disorder of glycosylation type Id: clinical phenotype, molecular analysis, prenatal diagnosis, and glycosylation of fetal proteins. Pediatr. Res. 58: 248-253.
8. Henquet, M., et al. 2008. Identification of the gene encoding the α1,3-mannosyltransferase (ALG3) in *Arabidopsis* and characterization of downstream N-glycan processing. Plant Cell 20: 1652-1664.

CHROMOSOMAL LOCATION

Genetic locus: ALG3 (human) mapping to 3q27.1.

PRODUCT

ALG3 siRNA (h) is a target-specific 19-25 nt siRNA 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 ALG3 shRNA Plasmid (h): sc-78191-SH and ALG3 shRNA (h) Lentiviral Particles: sc-78191-V as alternate gene silencing 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

ALG3 siRNA (h) is recommended for the inhibition of ALG3 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 ALG3 gene expression knockdown using RT-PCR Primer: ALG3 (h)-PR: sc-78191-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Gomes, I., et al. 2016. Identification of GPR83 as the receptor for the neuroendocrine peptide PEN. Sci. Signal. 9: ra43.

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.