SANTA CRUZ BIOTECHNOLOGY, INC.

DPAGT1 siRNA (m): sc-143149

BACKGROUND

DPAGT1 (UDP-N-acetylglucosamine—dolichyl-phosphate N-acetylglucosaminephosphotransferase), also known as G1PT (GlcNAc-1-P transferase) or DPAGT2, is a 408 amino acid member of the glycosyltransferase 4 protein family. Localized to the endoplasmic reticulum membrane, DPAGT1 is involved in protein modification, specifically glycosylation. DPAGT1 catalyzes the initial step in the synthesis of dolichol-P-P-oligosaccharides. Defects in the gene that encodes DPAGT1 are the cause of congenital disorder of glycosylation type 1J (CDG1J). Congenital disorders of glycosylation (CDGs) are a family of severe inherited diseases caused by a defect in protein N-glycosylation. CDGs cause a variety of clinical features including dysmorphic features, psychomotor retardation, hypotonia, coagulation disorders and immunodeficiency.

REFERENCES

1. Eckert, V., et al. 1998. Cloning and functional expression of the human GlcNAc-1-P transferase, the enzyme for the committed step of the dolichol cycle, by heterologous complementation in *Saccharomyces cerevisiae.* Glycobiology 8: 77-85.
2. Meissner, J.D., et al. 1999. Regulation of UDP-N-acetyglcosamine: dolichyl-phosphate N-acetylglucosamine-1-phosphate transferase by retinoic acid in P19 cells. Biochem. J. 338: 561-568.
3. Freeze, H.H. 2002. Human disorders in N-glycosylation and animal models. Biochim. Biophys. Acta 1573: 388-393.
4. Regis, S., et al. 2002. Genomic structure of the human UDP-GlcNAc: dolichol-P GlcNAc-1-P transferase gene. DNA Seq. 13: 245-250.
5. Wu, X., et al. 2003. Deficiency of UDP-GlcNAc:dolichol phosphate N-acetylglucosamine-1 phosphate transferase (DPAGT1) causes a novel congenital disorder of glycosylation type Ij. Hum. Mutat. 22: 144-150.
6. Newell, J.W., et al. 2003. Congenital disorder of glycosylation Ic in patients of Indian origin. Mol. Genet. Metab. 79: 221-228.
7. Nita-Lazar, M., et al. 2009. Overexpression of DPAGT1 leads to aberrant N-glycosylation of E-cadherin and cellular discohesion in oral cancer. Cancer Res. 69: 5673-5680.

CHROMOSOMAL LOCATION

Genetic locus: Dpagt1 (mouse) mapping to 9 A5.2.

PRODUCT

DPAGT1 siRNA (m) 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 DPAGT1 shRNA Plasmid (m): sc-143149-SH and DPAGT1 shRNA (m) Lentiviral Particles: sc-143149-V as alternate gene silencing products.

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

DPAGT1 siRNA (m) is recommended for the inhibition of DPAGT1 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 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 DPAGT1 gene expression knockdown using RT-PCR Primer: DPAGT1 (m)-PR: sc-143149-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.