SANTA CRUZ BIOTECHNOLOGY, INC.

GMPPB siRNA (m): sc-145649

BACKGROUND

GMPPB (GDP-mannose pyrophosphorylase B) is a 360 amino acid protein that belongs to the transferase hexapeptide repeat family and is involved in protein modification pathways. Functioning as a GDP-mannose pyrophosphorylase, GMPPB enzymatically catalyzes the conversion of mannose-1-phosphate and GTP to GDP-mannose and a free phosphate, a reaction that is involved in the production of N-linked oligosaccharides. Defects in the gene encoding GMPPB that cause errors in the glycosylation pathway may lead to congenital disorders of glycosylation (CDG). CDGs are multisystemic diseases that often involve both the central and peripheral nervous systems and are often characterized by endocrine and coagulation disorders. GMPPB is expressed as two isoforms due to alternative splicing events.

REFERENCES

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2. Nagase, T., Nakayama, M., Nakajima, D., Kikuno, R. and Ohara, O. 2001. Prediction of the coding sequences of unidentified human genes. XX. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 8: 85-95.
3. Grubenmann, C.E., Frank, C.G., Hülsmeier, A.J., Schollen, E., Matthijs, G., Mayatepek, E., Berger, E.G., Aebi, M. and Hennet, T. 2004. Deficiency of the first mannosylation step in the N-glycosylation pathway causes congenital disorder of glycosylation type Ik. Hum. Mol. Genet. 13: 535-542.
4. Kamimura, J., Wakui, K., Kadowaki, H., Watanabe, Y., Miyake, K., Harada, N., Sakamoto, M., Kinoshita, A., Yoshiura, K., Ohta, T., Kishino, T., Ishikawa, M., Kasuga, M., Fukushima, Y., Niikawa, N. and Matsumoto, N. 2004. The IHPK1 gene is disrupted at the 3p21.31 breakpoint of t(3;9) in a family with type 2 diabetes mellitus. J. Hum. Genet. 49: 360-365.

CHROMOSOMAL LOCATION

Genetic locus: Gmppb (mouse) mapping to 9 F2.

PRODUCT

GMPPB 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 GMPPB shRNA Plasmid (m): sc-145649-SH and GMPPB shRNA (m) Lentiviral Particles: sc-145649-V as alternate gene silencing products.

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.

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

GMPPB siRNA (m) is recommended for the inhibition of GMPPB 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 GMPPB gene expression knockdown using RT-PCR Primer: GMPPB (m)-PR: sc-145649-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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