SANTA CRUZ BIOTECHNOLOGY, INC.

β-1,4-GalNAc-T3 siRNA (m): sc-108230

BACKGROUND

β-1,4-GalNAc-T3 (β-1,4-N-acetyl-galactosaminyl transferase 3), also known as B4GALNT3, is a 998 amino acid single-pass type II membrane protein belonging to the chondroitin N-acetylgalactosaminyltransferase family. β-1,4-GalNAc-T3 is highly expressed in testis, colon and stomach, and weakly expressed in other tissues. β-1,4-GalNAc-T3 exhibits subcellular localization to apical Golgi and exists as two alternatively spliced isoforms. β-1,4-GalNAc-T3 is involved in the mediation of N,N'-diacetyllactosediamine formation on gastric mucosa and in N-acetyl-β-glucosaminyl-glycoprotein 4-β-N-acetylgalactosaminyltransferase activities. β-1,4-GalNAc-T3 is integral to cellular membranes and may function in a protective capacity against sudden cardiac arrest.

REFERENCES

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2. Ikehara, Y., et al. 2006. Apical Golgi localization of N,N'-diacetyllactosediamine synthase, β4GalNAc-T3, is responsible for LacdiNAc expression on gastric mucosa. Glycobiology 16: 777-785.
3. Nguyen, S.T., et al. 2007. Identification of a predictive gene expression signature of cervical lymph node metastasis in oral squamous cell carcinoma. Cancer Sci. 98: 740-746.
4. Huang, J., et al. 2007. β1,4-N-acetylgalactosaminyltransferase III enhances malignant phenotypes of colon cancer cells. Mol. Cancer Res. 5: 543-552.
5. Rooryck, C., et al. 2009. 2.3 Mb terminal deletion in 12p13.33 associated with oculoauriculovertebral spectrum and evaluation of WNT5B as a candidate gene. Eur. J. Med. Genet. 52: 446-449.
6. Ito, H., et al. 2009. Strategy for glycoproteomics: identification of glycoalteration using multiple glycan profiling tools. J. Proteome Res. 8: 1358-1367.
7. Narimatsu, H., et al. 2010. A strategy for discovery of cancer glycobiomarkers in serum using newly developed technologies for glycoproteomics. FEBS J. 277: 95-105.
8. Fukushima, K., et al. 2010. α1,2-fucosylated and β-N-acetylgalactosaminylated prostate-specific antigen as an efficient marker of prostatic cancer. Glycobiology 20: 452-460.
9. Arking, D.E., et al. 2010. Genome-wide association study identifies GPC5 as a novel genetic locus protective against sudden cardiac arrest. PLoS ONE 5: e9879.

CHROMOSOMAL LOCATION

Genetic locus: B4galnt3 (mouse) mapping to 6 F1.

PROTOCOLS

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

PRODUCT

β-1,4-GalNAc-T3 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see β-1,4-GalNAc-T3 shRNA Plasmid (m): sc-108230-SH and β-1,4-GalNAc-T3 shRNA (m) Lentiviral Particles: sc-108230-V as alternate gene silencing products.

For independent verification of β-1,4-GalNAc-T3 (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-108230A, sc-108230B and sc-108230C.

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

β-1,4-GalNAc-T3 siRNA (m) is recommended for the inhibition of β-1,4-GalNAc-T3 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 β-1,4-GalNAc-T3 gene expression knockdown using RT-PCR Primer: β-1,4-GalNAc-T3 (m)-PR: sc-108230-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. Petrany, M.J., et al. 2020. Single-nucleus RNA-seq identifies transcriptional heterogeneity in multinucleated skeletal myofibers. Nat. Commun. 11: 6374.

RESEARCH USE

For research use only, not for use in diagnostic procedures.