SANTA CRUZ BIOTECHNOLOGY, INC.

β-1,3-GalNAc-T2 siRNA (m): sc-108214

BACKGROUND

β-1,3-GalNAc-T2 (β-1,3-N-acetylgalactosaminyltransferase 2), also known as UDP-GalNAc:β-1,3-N-acetylgalactosaminyltransferase 2, B3GALNT2 or B3GalNAc-T2, is a 500 amino acid single-pass type II membrane protein belonging to the glycosyltransferase 31 family. Encoded by a gene that maps to human chromosome 1q42.3, β-1,3-GalNAc-T2 is ubiquitously expressed, with highest levels in testis, adipose tissue, skeletal muscle and ovary. β-1,3-GalNAc-T2 plays a role in synthesizing a unique carbohydrate structure, GalNAc-β-1-3GlcNAc, on N- and O-glycans. β-1,3-GalNAc-T2 does not exhibit galactose or galactosaminyl transferase activity toward any acceptor substrate. β-1,3-GalNAc-T2 contains two N-glycosylation sites, a transmembrane segment of 19 residues, and a putative stem region and catalytic domain of 479 residues. β-1,3-GalNAc-T2 consists of at least twelve exons and exists as two alternatively spliced isoforms. β-1,3-GalNAc-T2 may be linked to autism.

REFERENCES

1. Hiruma, T., et al. 2004. A novel human β-1,3-N-acetylgalactosaminyltransferase that synthesizes a unique carbohydrate structure, GalNAcβ1-3GlcNAc. J. Biol. Chem. 279: 14087-14095.
2. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 610194. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Martins, V.C., et al. 2008. Ltbetar signaling does not regulate Aire-dependent transcripts in medullary thymic epithelial cells. J. Immunol. 181: 400-407.
4. Liu, Z., et al. 2009. Molecular mechanisms regulating bovine ovarian follicular selection. Mol. Reprod. Dev. 76: 351-366.
5. Schibler, L., et al. 2009. New insight on FGFR3-related chondrodysplasias molecular physiopathology revealed by human chondrocyte gene expression profiling. PLoS ONE 4: e7633.
6. van der Zwaag, B., et al. 2009. Gene-network analysis identifies susceptibility genes related to glycobiology in autism. PLoS ONE 4: e5324.

CHROMOSOMAL LOCATION

Genetic locus: B3galnt2 (mouse) mapping to 13 A1.

PRODUCT

β-1,3-GalNAc-T2 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-1,3-GalNAc-T2 shRNA Plasmid (m): sc-108214-SH and β-1,3-GalNAc-T2 shRNA (m) Lentiviral Particles: sc-108214-V as alternate gene silencing products.

For independent verification of β-1,3-GalNAc-T2 (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-108214A, sc-108214B and sc-108214C.

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-1,3-GalNAc-T2 siRNA (m) is recommended for the inhibition of β-1,3-GalNAc-T2 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-1,3-GalNAc-T2 gene expression knockdown using RT-PCR Primer: β-1,3-GalNAc-T2 (m)-PR: sc-108214-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.

PROTOCOLS

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