SANTA CRUZ BIOTECHNOLOGY, INC.

β-1,4-Gal-T5 siRNA (h): sc-72405

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

β-1,4-galactosyltransferases (β-1,4-Gal-T) are type II membrane-bound glycoproteins that are substrate-specific and function to transfer galactose in a β-1,4 linkage to an acceptor sugar. There are seven members of the β-1, 4-Gal-T family, all of which are directed to the Golgi apparatus through a hydrophobic sequence at the N-terminus. β-1,4-Gal-T5 (β-1,4-galactosyltransferase 5) is a member of the β-1,4-Gal-T protein family and is localized to the *trans*-cisternae of the Golgi stack. Expressed throughout the body, β-1, 4-Gal-T5 is responsible for the synthesis of both N-linked oligosaccharides and the various carbohydrates found in glycolipids. β-1,4-Gal-T5 is thought to preferentially galactosylate oligosaccharides that are upregulated in astrocytoma cells, suggesting a possible role in carcinogenesis.

REFERENCES

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3. Sato, T. and Furukawa, K. 2004. Transcriptional regulation of the human β-1,4-galactosyltransferase V gene in cancer cells: essential role of transcription factor Sp1. J. Biol. Chem. 279: 39574-39583.
4. Zaidi, S.H., et al. 2005. A family exhibiting arterial tortuosity syndrome displays homozygosity for markers in the arterial tortuosity locus at chromosome 20q13. Clin. Genet. 67: 183-188.
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6. Jiang, J., et al. 2006. Downregulation of β-1,4-galactosyltransferase V is a critical part of etoposide-induced apoptotic process and could be mediated by decreasing Sp1 levels in human glioma cells. Glycobiology 16: 1045-1051.
7. Sato, T. and Furukawa, K. 2007. Sequential action of Ets-1 and Sp1 in the activation of the human beta-1,4-galactosyltransferase V gene involved in abnormal glycosylation characteristic of cancer cells. J. Biol. Chem. 282: 27702-27712.
8. Kitayama, K., et al. 2007. Enzymes responsible for synthesis of corneal keratan sulfate glycosaminoglycans. J. Biol. Chem. 282: 30085-30096.
9. Pai, T., et al. 2007. Galactomutarotase and other galactose-related genes are rapidly induced by retinoic Acid in human myeloid cells. Biochemistry 46: 15198-15207.

CHROMOSOMAL LOCATION

Genetic locus: B4GALT5 (human) mapping to 20q13.13.

PROTOCOLS

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

PRODUCT

β-1,4-Gal-T5 siRNA (h) 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-Gal-T5 shRNA Plasmid (h): sc-72405-SH and β-1,4-Gal-T5 shRNA (h) Lentiviral Particles: sc-72405-V as alternate gene silencing products.

For independent verification of β-1,4-Gal-T5 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-72405A, sc-72405B and sc-72405C.

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-Gal-T5 siRNA (h) is recommended for the inhibition of β-1,4-Gal-T5 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 β-1,4-Gal-T5 gene expression knockdown using RT-PCR Primer: β-1,4-Gal-T5 (h)-PR: sc-72405-PR (20 µl, 538 bp). 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.