SANTA CRUZ BIOTECHNOLOGY, INC.

GalNAc-T13 siRNA (m): sc-75091

BACKGROUND

The UDP-N-acetyl-α-D-galactosamine:polypeptide N-acetylgalactosaminyl-transferase (GalNAc-T) family of enzymes are substrate-specific proteins that catalyze the transfer of GalNAc (N-acetylgalactosamine) to serine and threonine residues onto various proteins, thereby initiating mucin-type O-linked glycosylation in the Golgi apparatus. GalNAc-T13 (polypeptide N-acetylgalactosaminyltransferase 13), also known as UDP-GalNAc:polypeptide N-acetylgalactosaminyltransferase 13, is a 556 amino acid protein that displays much stronger enzymatic activity than GalNAc-1 towards GalNAc transfer to mucin peptides such as Muc5a and Muc7. The N-terminal domain is involved in substrate binding and manganese coordination, while the C-terminal domain is involved in UDP-Gal binding and catalytic reaction. With specific expression in the central nervous system, GalNAc-T13 may be responsible for the synthesis of Tn antigen in neuronal cells, which is a universal carcinoma marker on malignant cells.

REFERENCES

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3. Zhang, Y., et al. 2003. Cloning and characterization of a new human UDP-N-acetyl-α-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase, designated pp-GalNAc-T13, that is specifically expressed in neurons and synthesizes GalNAc α-serine/threonine antigen. J. Biol. Chem. 278: 573-584.
4. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 608369. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Berois, N., et al. 2006. ppGalNAc-T13: a new molecular marker of bone marrow involvement in neuroblastoma. Clin. Chem. 52: 1701-1712.
6. Rajpert-De Meyts, E., et al. 2007. Changes in the profile of simple mucin-type O-glycans and polypeptide GalNAc-transferases in human testis and testicular neoplasms are associated with germ cell maturation and tumour differentiation. Virchows Arch. 451: 805-814.

CHROMOSOMAL LOCATION

Genetic locus: Galnt13 (mouse) mapping to 2 C1.1.

PRODUCT

GalNAc-T13 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 GalNAc-T13 shRNA Plasmid (m): sc-75091-SH and GalNAc-T13 shRNA (m) Lentiviral Particles: sc-75091-V as alternate gene silencing products.

For independent verification of GalNAc-T13 (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-75091A, sc-75091B and sc-75091C.

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

GalNAc-T13 siRNA (m) is recommended for the inhibition of GalNAc-T13 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 GalNAc-T13 gene expression knockdown using RT-PCR Primer: GalNAc-T13 (m)-PR: sc-75091-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.