SANTA CRUZ BIOTECHNOLOGY, INC.

α4Gn-T siRNA (h): sc-78391

BACKGROUND

α 1,4-N-acetylflucosaminyltransferase (α4Gn-T) mediates the biosynthesis of mucin type glycoprotein (O-glycan). α4Gn-T acts as the key enzyme for the formation of the unique glycan GlcNAcα1-4Galβ1-R, and most efficiently transfers N-acetylglucosamine (GlcNAc) to core two branched O-glycans. α4Gn-T is a single-pass type II membrane protein associated with the Golgi apparatus and contains the conserved DXD motif involved in catalytic activity. It is ex-pressed in stomach and pancreas, as well as in gastric cancer cells. α4Gn-T is not expressed in peripheral blood cells, making it a useful biomarker for pancreatic cancer. α4Gn-T and Mucin 6 expression is upregulated in the gastric mucosa of *H. pylori* infected patients, which suggest the involvement of α4Gn-T in defense against *H. pylori* infection.

REFERENCES

1. Nakayama, J., et al. 1999. Expression cloning of a human α1, 4-N-acetylglucosaminyltransferase that forms GlcNAcα1→4Galβ→R, a glycan specifically expressed in the gastric gland mucous cell-type mucin. Proc. Natl. Acad. Sci. USA 96: 8991-8996.
2. Zhang, M.X., et al. 2001. Immunohistochemical demonstration of α1,4-N-acetylglucosaminyltransferase that forms GlcNAcα1,4Galβ residues in human gastrointestinal mucosa. J. Histochem. Cytochem. 49: 587-596.
3. Nakayama, J., et al. 2002. Glycosyltransferase genes as tumor marker. Rinsho Byori 123: 142-148.
4. Matsuzwa, M., et al. 2003. *Helicobacter pylori* infection up-regulates gland mucous cell-type mucins in gastric pyloric mucosa. Helicobacter 8: 594-600.
5. Nakajima, K., et al. 2003. Expression of gastric gland mucous cell-type mucin in normal and neoplastic human tissues. J. Histochem. Cytochem. 51: 1689-1698.
6. Shimizu, F., et al. 2003. Usefulness of the real-time reverse transcription-polymerase chain reaction assay targeted to α1,4-N-acetylglucosaminyltransferase for the detection of gastric cancer. Lab. Invest. 83: 187-197.

CHROMOSOMAL LOCATION

Genetic locus: A4GNT (human) mapping to 3q22.3.

PRODUCT

α4Gn-T 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 α4Gn-T shRNA Plasmid (h): sc-78391-SH and α4Gn-T shRNA (h) Lentiviral Particles: sc-78391-V as alternate gene silencing products.

For independent verification of α4Gn-T (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-78391A, sc-78391B and sc-78391C.

RESEARCH USE

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

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

α4Gn-T siRNA (h) is recommended for the inhibition of α4Gn-T 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 α4Gn-T gene expression knockdown using RT-PCR Primer: α4Gn-T (h)-PR: sc-78391-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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