SANTA CRUZ BIOTECHNOLOGY, INC.

C1GALT1 siRNA (m): sc-72691

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The Power to Question

BACKGROUND

C1GALT1 (core 1 synthase, glycoprotein-N-acetylgalactosamine 3-β-galactosyltransferase, 1), also known as T-synthase, is a single-pass type II membrane protein that is involved in various protein modification pathways. Widely expressed and present at high amounts in heart, kidney, liver and placenta, C1GALT1 functions to generate the core of 1 β-3-galactosyltransferase, an enzyme that transfers galactose from UDP-Gal to Gal-NAc-α-1-O-phenyl and is a precursor for many glycoproteins. C1GALT1 binds magnesium as a cofactor and also participates in development of kidney homeostasis, as well as angiogenesis and thrombopoiesis. Defects in the gene encoding C1GALT1 are associated with IgA nephropathy (IgAN), a condition characterized by accumulation of the IgA antibody in the glomerulus, leading to immune-mediated renal disease. Two isoforms of C1GALT1 exist due to alternative splicing events.

REFERENCES

1. Amado, M., et al. 1999. Identification and characterization of large galactosyltransferase gene families: galactosyltransferases for all functions. Biochim. Biophys. Acta 1473: 35-53.
2. Ju, T. and Cummings, R.D. 2002. A unique molecular chaperone Cosmc required for activity of the mammalian core 1 β 3-galactosyltransferase. Proc. Natl. Acad. Sci. USA 99: 16613-16618.
3. Ju, T., et al. 2002. Cloning and expression of human core 1 β1,3-galactosyltransferase. J. Biol. Chem. 277: 178-186.
4. Qin, W., et al. 2005. Peripheral B lymphocyte β1,3-galactosyltransferase and chaperone expression in immunoglobulin A nephropathy. J. Intern. Med. 258: 467-477.
5. Alexander, W.S., et al. 2006. Thrombocytopenia and kidney disease in mice with a mutation in the C1GALT1 gene. Proc. Natl. Acad. Sci. USA 103: 16442-16447.

CHROMOSOMAL LOCATION

Genetic locus: C1galt1 (mouse) mapping to 6 A1.

PRODUCT

C1GALT1 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 C1GALT1 shRNA Plasmid (m): sc-72691-SH and C1GALT1 shRNA (m) Lentiviral Particles: sc-72691-V as alternate gene silencing products.

For independent verification of C1GALT1 (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-72691A, sc-72691B and sc-72691C.

PROTOCOLS

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

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

C1GALT1 siRNA (m) is recommended for the inhibition of C1GALT1 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 C1GALT1 gene expression knockdown using RT-PCR Primer: C1GALT1 (m)-PR: sc-72691-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.