SANTA CRUZ BIOTECHNOLOGY, INC.

GAL3ST1 siRNA (m): sc-145306

BACKGROUND

Galactosylceramide sulfotransferase (GAL3ST1), also designated cerebroside sulfotransferase (CST), is a 521 amino acid enzyme that catalyzes the 3'-sulfation of galactose residues in several glycolipids. Two of its major products include seminolipid, which is required for spermatogenesis, and sulfatide, which is an essential myelin component. In kidney, sulfatide interacts with L-Selectin to play a role in monocyte infiltration into the kidney interstitium. Disruption of the GAL3ST1 gene in mice results in neurological disorders due to myelin dysfunction, an aberrant enhancement of oligodendrocyte terminal differentiation and an arrest of spermatogenesis resulting in male infertility. GAL3ST1 is expressed in the normal tissues of stomach, small intestine, brain, kidney, lung and testis. Interestingly, GAL3ST1 is also highly expressed in human renal cancer cells.

REFERENCES

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2. Tsuda, M., Egashira, M., Niikawa, N., Wada, Y. and Honke, K. 2000. Cancer-associated alternative usage of multiple promoters of human GalCer sulfotransferase gene. Eur. J. Biochem. 267: 2672-2679.
3. Honke, K., Hirahara, Y., Dupree, J., Suzuki, K., Popko, B., Fukushima, K., Fukushima, J., Nagasawa, T., Yoshida, N., Wada, Y. and Taniguchi, N. 2002. Paranodal junction formation and spermatogenesis require sulfoglycolipids. Proc. Natl. Acad. Sci. USA 99: 4227-4232.
4. Ogawa, D., Shikata, K., Honke, K., Sato, S., Matsuda, M., Nagase, R., Tone, A., Okada, S., Usui, H., Wada, J., Miyasaka, M., Kawashima, H., Suzuki, Y., Suzuki, T., Taniguchi, N., Hirahara, Y., Tadano-Aritomi, K., et al. 2004. Cerebroside sulfotransferase deficiency ameliorates L-Selectin-dependent monocyte infiltration in the kidney after ureteral obstruction. J. Biol. Chem. 279: 2085-2090.

CHROMOSOMAL LOCATION

Genetic locus: Gal3st1 (mouse) mapping to 11 A1.

PRODUCT

GAL3ST1 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 GAL3ST1 shRNA Plasmid (m): sc-145306-SH and GAL3ST1 shRNA (m) Lentiviral Particles: sc-145306-V as alternate gene silencing products.

For independent verification of GAL3ST1 (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-145306A, sc-145306B and sc-145306C.

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

GAL3ST1 siRNA (m) is recommended for the inhibition of GAL3ST1 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 GAL3ST1 gene expression knockdown using RT-PCR Primer: GAL3ST1 (m)-PR: sc-145306-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.