

SULT1B1 siRNA (h): sc-89149

BACKGROUND

Sulfation is an essential conjugation reaction that increases the water solubility of many compounds, thereby influencing their renal excretion and also resulting in the formation of active metabolites. SULT1B1 (sulfotransferase family cytosolic 1B member 1), also known as thyroid hormone sulfotransferase, is a 296 amino acid cytoplasmic protein that catalyzes the sulfur conjugation of many neurotransmitters, hormones, xenobiotic compounds and drugs. Specifically, SULT1B1 has the ability to sulfate thyroid hormones, a process that is involved in stimulating the metabolism or inactivation of thyroid hormones. The regulation of thyroid hormones has important physiological impacts, such as maintaining metabolic stability in tissues, regulating the production and activities of enzymes and determining the utilization of substrates, minerals and vitamins. SULT1B1 is highly expressed in liver, colon, spleen, small intestine and peripheral blood lymphocytes, with lower expression in thymus, lung and placenta.

REFERENCES

1. Fujita, K., Nagata, K., Ozawa, S., Sasano, H. and Yamazoe, Y. 1997. Molecular cloning and characterization of rat ST1B1 and human ST1B2 cDNAs, encoding thyroid hormone sulfotransferases. *J. Biochem.* 122: 1052-1061.
2. Dunn, R.T. and Klaassen, C.D. 1998. Tissue-specific expression of rat sulfotransferase messenger RNAs. *Drug Metab. Dispos.* 26: 598-604.
3. Wang, J., Falany, J.L. and Falany, C.N. 1998. Expression and characterization of a novel thyroid hormone-sulfating form of cytosolic sulfotransferase from human liver. *Mol. Pharmacol.* 53: 274-282.
4. Dunn, R.T. and Klaassen, C.D. 2000. Thyroid hormone modulation of rat sulphotransferase mRNA expression. *Xenobiotica* 30: 345-357.
5. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608436. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Thomas, N.L. and Coughtrie, M.W. 2003. Sulfation of apomorphine by human sulfotransferases: evidence of a major role for the polymorphic phenol sulfotransferase, SULT1A1. *Xenobiotica* 33: 1139-1148.
7. Meinel, W., Pabel, U., Osterloh-Quiroz, M., Hengstler, J.G. and Glatt, H. 2006. Human sulphotransferases are involved in the activation of aristolochic acids and are expressed in renal target tissue. *Int. J. Cancer* 118: 1090-1097.
8. Senggunprai, L., Yoshinari, K., Shimada, M. and Yamazoe, Y. 2008. Involvement of ST1B subfamily of cytosolic sulfotransferase in kynurenine metabolism to form natriuretic xanthurenic acid sulfate. *J. Pharmacol. Exp. Ther.* 327: 789-798.

CHROMOSOMAL LOCATION

Genetic locus: SULT1B1 (human) mapping to 4q13.3.

PROTOCOLS

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

PRODUCT

SULT1B1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SULT1B1 shRNA Plasmid (h): sc-89149-SH and SULT1B1 shRNA (h) Lentiviral Particles: sc-89149-V as alternate gene silencing products.

For independent verification of SULT1B1 (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-89149A, sc-89149B and sc-89149C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

SULT1B1 siRNA (h) is recommended for the inhibition of SULT1B1 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 μ M in 66 μ l. 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 SULT1B1 gene expression knockdown using RT-PCR Primer: SULT1B1 (h)-PR: sc-89149-PR (20 μ l). 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.