

UGT2A3 siRNA (h): sc-89057

BACKGROUND

UDP-glucuronosyltransferase isoenzymes (UGTs) catalyze the glucuronidation of small lipophilic molecules, which regulates the bioactivity and metabolic fate of a wide range of endo- and xenobiotics. Glucuronidation increases the polarity of lipophilic molecules and facilitates their entry into aqueous compartments and their ultimate excretion. In essence, glucuronidation provides a protective function by terminating or attenuating the biological activity of its substrates. UGT2A3 (UDP-glucuronosyltransferase 2A3) is a 527 amino acid single-pass membrane protein that is a member of the UDP-glucuronosyltransferase family. UGT2A3 is highly expressed in colon, liver, adipose tissue and small intestine.

REFERENCES

1. Smith, S.A., Nagalla, S.R., Andrews, D.P. and Olsen, G.D. 1999. Morphine regulation of a novel uridine diphosphate glucuronosyltransferase in guinea pig pups following *in utero* exposure. *Mol. Genet. Metab.* 68: 68-77.
2. King, C.D., Rios, G.R., Green, M.D. and Tephly, T.R. 2000. UDP-glucuronosyltransferases. *Curr. Drug Metab.* 1: 143-161.
3. Owens, I.S., Basu, N.K. and Banerjee, R. 2005. UDP-glucuronosyltransferases: gene structures of UGT1 and UGT2 families. *Meth. Enzymol.* 400: 1-22.
4. Mackenzie, P.I., Bock, K.W., Burchell, B., Guillemette, C., Ikushiro, S., Iyanagi, T., Miners, J.O., Owens, I.S. and Nebert, D.W. 2005. Nomenclature update for the mammalian UDP glycosyltransferase (UGT) gene superfamily. *Pharmacogenet. Genomics* 15: 677-685.
5. Buckley, D.B. and Klaassen, C.D. 2007. Tissue- and gender-specific mRNA expression of UDP-glucuronosyltransferases (UGTs) in mice. *Drug Metab. Dispos.* 35: 121-127.
6. Court, M.H., Hazarika, S., Krishnaswamy, S., Finel, M. and Williams, J.A. 2008. Novel polymorphic human UDP-glucuronosyltransferase 2A3: cloning, functional characterization of enzyme variants, comparative tissue expression, and gene induction. *Mol. Pharmacol.* 74: 744-754.
7. Sneitz, N., Court, M.H., Zhang, X., Laajanen, K., Yee, K.K., Dalton, P., Ding, X. and Finel, M. 2009. Human UDP-glucuronosyltransferase UGT2A2: cDNA construction, expression, and functional characterization in comparison with UGT2A1 and UGT2A3. *Pharmacogenet. Genomics* 19: 923-934.

CHROMOSOMAL LOCATION

Genetic locus: UGT2A3 (human) mapping to 4q13.2.

PRODUCT

UGT2A3 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 UGT2A3 shRNA Plasmid (h): sc-89057-SH and UGT2A3 shRNA (h) Lentiviral Particles: sc-89057-V as alternate gene silencing products.

For independent verification of UGT2A3 (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-89057A, sc-89057B and sc-89057C.

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

UGT2A3 siRNA (h) is recommended for the inhibition of UGT2A3 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 UGT2A3 gene expression knockdown using RT-PCR Primer: UGT2A3 (h)-PR: sc-89057-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.

PROTOCOLS

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