



PGT siRNA (h): sc-78211

BACKGROUND

The organic anion transporting polypeptide (OATP) family of proteins play a role in drug absorption, distribution and excretion. OATP proteins mediate the uptake of a broad range of substrates, including bile salts, hormones, drugs and antibiotics, and they are expressed in various tissues, such as gut, brain, kidney and liver. PGT, also known as SLC02A1 (solute carrier organic anion transporter family, member 2A1), SLC21A2 or OATP2A1, is a 643 amino acid multi-pass membrane protein that belongs to the organic anion transporter family. Expressed ubiquitously, PGT is thought to mediate the release, transepithelial transport and clearance of prostaglandins from cells to other areas of the body. The gene encoding PGT maps to human chromosome 3q22.1, which houses over 1,100 genes, including a chemokine receptor (CKR) gene cluster and a variety of human cancer-related gene loci.

REFERENCES

1. Kanai, N., et al. 1995. Identification and characterization of a prostaglandin transporter. *Science* 268: 866-869.
2. Lu, R., et al. 1996. Cloning, *in vitro* expression, and tissue distribution of a human prostaglandin transporter cDNA(hPGT). *J. Clin. Invest.* 98: 1142-1149.
3. Lu, R., et al. 1998. Molecular cloning of the gene for the human prostaglandin transporter hPGT: gene organization, promoter activity, and chromosomal localization. *Biochem. Biophys. Res. Commun.* 246: 805-812.
4. Hagenbuch, B., et al. 2003. The superfamily of organic anion transporting polypeptides. *Biochim. Biophys. Acta* 1609: 1-18.
5. Hagenbuch, B., et al. 2004. Organic anion transporting polypeptides of the OATP/SLC21 family: phylogenetic classification as OATP/SLCO superfamily, new nomenclature and molecular/functional properties. *Pflugers Arch.* 447: 653-665.
6. Kang, J., et al. 2006. Functional characterization of prostaglandin transporter and terminal prostaglandin synthases during decidualization of human endometrial stromal cells. *Hum. Reprod.* 21: 592-599.
7. Hagenbuch, B. 2007. Cellular entry of thyroid hormones by organic anion transporting polypeptides. *Best Pract. Res. Clin. Endocrinol. Metab.* 21: 209-221.

CHROMOSOMAL LOCATION

Genetic locus: SLC02A1 (human) mapping to 3q22.1.

PRODUCT

PGT siRNA (h) is a pool of 2 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 PGT shRNA Plasmid (h): sc-78211-SH and PGT shRNA (h) Lentiviral Particles: sc-78211-V as alternate gene silencing products.

For independent verification of PGT (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-78211A and sc-78211B.

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

PGT siRNA (h) is recommended for the inhibition of PGT 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 PGT gene expression knockdown using RT-PCR Primer: PGT (h)-PR: sc-78211-PR (20 μ l, 586 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Fernández-Martínez, A.B., et al. 2016. Intracellular prostaglandin E₂ mediates cisplatin-induced proximal tubular cell death. *Biochim. Biophys. Acta* 1863: 293-302.
2. Madrigal-Martínez, A., et al. 2019. Prostaglandin E₂ stimulates cancer-related phenotypes in prostate cancer PC3 cells through cyclooxygenase-2. *J. Cell. Physiol.* 234: 7548-7559.
3. García-Pastor, C., et al. 2021. Intracellular prostaglandin E₂ contributes to hypoxia-induced proximal tubular cell death. *Sci. Rep.* 11: 7047.

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.