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# OCT2 siRNA (h): sc-42554

## BACKGROUND

Organic cation transporters (OCT) are expressed in the plasma membrane of epithelial cells from a wide range of tissues, where they function in the elimination of endogenous amines, cationic drugs and other xenobiotics. The structure of OCTs consists of a 12-transmembrane-domain structure and a large extracellular hydrophilic loop. In humans, OCT1 is primarily expressed in the liver, while OCT2 is expressed in the kidney. OCT3 is expressed in the placenta, skeletal muscle, prostate, aorta and liver. OCT2, also known as SLC22A2, is a multi-specific transporter protein localizing to the basolateral and luminal membranes of the kidney distal tubule and proximal tubules. OCT2 is responsible for mediating the pH-sensitive tubular uptake of organic compounds from circulation. An additional splice variant exists for OCT2, namely OCT2-A.

## REFERENCES

- Gorboulev, V., et al. 1997. Cloning and characterization of two human polyspecific organic cation transporters. *DNA Cell. Biol.* 16: 871-881.
- Koepsell, H. 1998. Organic cation transporters in intestine, kidney, liver, and brain. *Annu. Rev. Physiol.* 60: 246-266.
- Wu, X., et al. 1998. Identity of the organic cation transporter OCT3 as the extraneuronal monoamine transporter (uptake2) and evidence for the expression of the transporter in the brain. *J. Biol. Chem.* 273: 32776-32786.
- Dresser, M.J., et al. 1999. Molecular and functional characteristics of clones human organic cation transporters. *Pharm. Biotechnol.* 12: 441-469.
- Verhaagh, S., et al. 1999. Cloning of the mouse and human solute carrier 22a3 (Slc22a3/SLC22A3) identifies a conserved cluster three organic cation transporters on mouse chromosome 17 and human 6q26-q27. *Genomics* 55: 209-218.

## CHROMOSOMAL LOCATION

Genetic locus: SLC22A2 (human) mapping to 6q25.3.

## PRODUCT

OCT2 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see OCT2 shRNA Plasmid (h): sc-42554-SH and OCT2 shRNA (h) Lentiviral Particles: sc-42554-V as alternate gene silencing products.

For independent verification of OCT2 (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-42554A, sc-42554B and sc-42554C.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

OCT2 siRNA (h) is recommended for the inhibition of OCT2 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  $\mu$ M in 66  $\mu$ 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 OCT2 gene expression knockdown using RT-PCR Primer: OCT2 (h)-PR: sc-42554-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.