

OST α siRNA (h): sc-78006

BACKGROUND

The heteromeric transporter OST α /OST β facilitates the transport of bile and other steroid solutes across the basolateral epithelial cell membrane of intestine, liver, testis, kidney and adrenal gland. OST α /OST β expression is induced by bile acids through ligand-dependent transactivation of their genes by FXR (Farnesoid X-activated receptor). This genetic regulation suggests that in response to changes in intracellular bile acid levels, bile acids adjust the rate of their own efflux from enterocytes. OST α (organic solute transporter subunit alpha) is a 340 amino acid multi-pass membrane protein that requires interaction with OST β in order to reach the plasma membrane. In OST α null mice, transileal transport of taurocholate was reduced by more than 80% and bile acid pool size was reduced by more than 65% when compared with wildtype mice, suggesting that OST α is critical for intestinal bile acid transport. Though widely expressed, OST α is present at highest levels in ileum.

REFERENCES

1. Seward, D.J., et al. 2003. Functional complementation between a novel mammalian polygenic transport complex and an evolutionarily ancient organic solute transporter, OST α -OST β . *J. Biol. Chem.* 278: 27473-27482.
2. Dawson, P.A., et al. 2005. The heteromeric organic solute transporter α - β , OST α -OST β , is an ileal basolateral bile acid transporter. *J. Biol. Chem.* 280: 6960-6968.
3. Landrier, J.F., et al. 2006. The nuclear receptor for bile acids, FXR, transactivates human organic solute transporter- α and - β genes. *Am. J. Physiol. Gastrointest. Liver Physiol.* 290: G476-G485.
4. Sun, A.Q., et al. 2007. Protein-protein interactions and membrane localization of the human organic solute transporter. *Am. J. Physiol. Gastrointest. Liver Physiol.* 292: G1586-G1593.
5. Li, N., et al. 2007. Heterodimerization, trafficking and membrane topology of the two proteins, Ost α and Ost β , that constitute the organic solute and steroid transporter. *Biochem. J.* 407: 363-372.
6. Ballatori, N., et al. 2008. Ost α -Ost β is required for bile acid and conjugated steroid disposition in the intestine, kidney, and liver. *Am. J. Physiol. Gastrointest. Liver Physiol.* 295: G179-G186.

CHROMOSOMAL LOCATION

Genetic locus: OSTALPHA (human) mapping to 3q29.

PRODUCT

OST α 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 OST α shRNA Plasmid (h): sc-78006-SH and OST α shRNA (h) Lentiviral Particles: sc-78006-V as alternate gene silencing products.

For independent verification of OST α (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-78006A, sc-78006B and sc-78006C.

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

OST α siRNA (h) is recommended for the inhibition of OST α 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 OST α gene expression knockdown using RT-PCR Primer: OST α (h)-PR: sc-78006-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.