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SANTA CRUZ BIOTECHNOLOGY, INC.

OSTα siRNA (m): sc-151335

BACKGROUND

The heteromeric transporter OSTα/OSTβ facilitates the transport of bile and other steroid solutes across the basolateral epithelial cell membrane of intestine, liver, testis, kidney and adrenal gland. OSTα/OSTβ 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. OSTα (organic solute transporter subunit alpha) is a 340 amino acid multi-pass membrane protein that requires interaction with OSTβ in order to reach the plasma membrane. In OSTα 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 OSTα is critical for intestinal bile acid transport. Though widely expressed, OSTα is present at highest levels in ileum.

REFERENCES

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2. Dawson, P.A., et al. 2005. The heteromeric organic solute transporter α-β, Ostα-Ostβ, 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. Ostα-Ostβ 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: Osta (mouse) mapping to 16 B3.

PRODUCT

OSTα siRNA (m) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see OSTα shRNA Plasmid (m): sc-151335-SH and OSTα shRNA (m) Lentiviral Particles: sc-151335-V as alternate gene silencing products.

For independent verification of OSTα (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-151335A, sc-151335B and sc-151335C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

OSTα siRNA (m) is recommended for the inhibition of OSTα expression in mouse 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 µM in 66 µl. 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 OSTα gene expression knockdown using RT-PCR Primer: OSTα (m)-PR: sc-151335-PR (20 µl). 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.