SANTA CRUZ BIOTECHNOLOGY, INC.

BSEP siRNA (h): sc-41157

BACKGROUND

ATP-binding cassette (ABC) transporters are an evolutionarily conserved family of proteins that catalyze the transport of molecules across extra- and intracellular membranes through the energy of ATP hydrolysis. ABC genes comprise seven subfamilies, designated ABC1, Mdr/TAP, MRP, ALD, OABP, GCN20 and White. The secretion of bile salt molecules from blood into bile is a major driving force for bile formation. Bile salt export pump (BSEP) is a member of the Mdr/TAP subfamily of ABC transporters that mediates the transport of bile acids across the hepatocyte canalicular membrane and regulates bile acid-dependent bile secretion. BSEP contains putative phosphorylation sites for protein kinase A, protein kinase C (PKC) and Ca^{2+}-calmodulin dependent kinase II, whose regulation may be dependent on bile salt concentration.

REFERENCES

1. Kullak-Ublick, G.A., et al. 2000. Hepatic transport of bile salts. Semin. Liver Dis. 20: 273-292.
2. Akita, H., et al. 2001. Characterization of bile acid transport mediated by multidrug resistance associated protein 2 and bile salt export pump. Biochim. Biophys. Acta 1511: 7-16.
3. Ananthanarayanan, M., et al. 2001. Human bile salt export pump (BSEP) promoter is transactivated by the farnesoid X receptor/bile acid receptor (FXR/BAR). J. Biol. Chem. 276: 28857-28865.
4. Noe, J., et al. 2001. Characterization of the mouse bile salt export pump overexpressed in the baculovirus system. Hepatology 33: 1223-1231.
5. Crocenzi, F.A., et al. 2003. Impaired localisation and transport function of canalicular Bsep in taurolithocholate induced cholestasis in the rat. Gut 52: 1170-1177.
6. Patel, P., et al. 2003. Semi quantitative expression analysis of MDR3, FIC1, BSEP, OATP-A, OATP-C, OATP-D, OATP-E and NTCP gene transcripts in 1st and 3rd trimester human placenta. Placenta 24: 39-44.
7. Elferink, M.G., et al. 2004. LPS-induced downregulation of MRP2 and BSEP in human liver is due to a posttranscriptional process. Am. J. Physiol. Gastrointest. Liver Physiol. 287: G1008-G1016.

CHROMOSOMAL LOCATION

Genetic locus: ABCB11 (human) mapping to 2q31.1.

PRODUCT

BSEP 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see BSEP shRNA Plasmid (h): sc-41157-SH and BSEP shRNA (h) Lentiviral Particles: sc-41157-V as alternate gene silencing products.

For independent verification of BSEP (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-41157A, sc-41157B and sc-41157C.

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

BSEP siRNA (h) is recommended for the inhibition of BSEP 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 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.

GENE EXPRESSION MONITORING

BSEP (F-6): sc-74500 is recommended as a control antibody for monitoring of BSEP gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor BSEP gene expression knockdown using RT-PCR Primer: BSEP (h)-PR: sc-41157-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.