SANTA CRUZ BIOTECHNOLOGY, INC.

Asbt siRNA (m): sc-141294

BACKGROUND

Apical sodium/bile acid cotransporter (Asbt), also known as ileal sodium/bile acid cotransporter (ISBT), is an integral membrane protein that mediates bile acid recycling from the intestine to the liver. Small intestine bile acids facilitate absorption of fat-soluble vitamins and cholesterol. Asbt protein present in the intestinal ileum binds bile salts in the gut lumen and transports them across the brush border membrane to the ileal lipid-binding protein (Ilbp), which binds bile acid in the cytoplasm of the cell and mediates normal flow back to the liver. ASBT function is essential for maintenance of cholesterol homeostasis in the body, though the molecular mechanisms of this role are not entirely understood. Low levels of Asbt are a cause of primary bile acid malabsorption (PBAM), an idiopathic intestinal disorder and are also a cause of Crohn's disease (CD). The Asbt gene (SLC10A2) is located on chromosome 13q33.1 and is clearly distinct from the hepatic sodium-bile acid cotransporter gene (SLC10A1).

REFERENCES

1. Wong, M.H., et al. 1996. Localization of the ileal sodium-bile acid cotransporter gene (SLC10A2) to human chromosome 13q33. Genomics 33: 538-540.
2. Small, D.M. 1997. Point mutations in the ileal bile salt transporter cause leaks in the enterohepatic circulation leading to severe chronic diarrhea and malabsorption. J. Clin. Invest. 99: 1807-1808.
3. Weinman, S.A. 1997. Electrogenicity of Na^+-coupled bile acid transporters. Yale J. Biol. Med. 70: 331-340.
4. Shneider, B.L. 2001. Intestinal bile acid transport: biology, physiology, and pathophysiology. J. Pediatr. Gastroenterol. Nutr. 32: 407-417.
5. Jung, D., et al. 2004. Human ileal bile acid transporter gene ASBT (SLC10A2) is transactivated by the glucocorticoid receptor. Gut 53: 78-84.
6. Hagenbuch, B., et al. 2004. The sodium bile salt cotransport family SLC10. Pflugers Arch. 447: 566-570.

CHROMOSOMAL LOCATION

Genetic locus: Slc10a2 (mouse) mapping to 8 A1.1.

PRODUCT

Asbt 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 Asbt shRNA Plasmid (m): sc-141294-SH and Asbt shRNA (m) Lentiviral Particles: sc-141294-V as alternate gene silencing products.

For independent verification of Asbt (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-141294A, sc-141294B and sc-141294C.

PROTOCOLS

See our web site at 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 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

Asbt siRNA (m) is recommended for the inhibition of Asbt 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 Asbt gene expression knockdown using RT-PCR Primer: Asbt (m)-PR: sc-141294-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Masyuk, A.I., et al. 2013. Ciliary subcellular localization of TGR5 determines the cholangiocyte functional response to bile acid signaling. Am. J. Physiol. Gastrointest. Liver Physiol. 304: G1013-G1024.

RESEARCH USE

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