SANTA CRUZ BIOTECHNOLOGY, INC.

FIC1 siRNA (m): sc-62317

BACKGROUND

FIC1 is a 1,251 amino acid protein encoded by the human gene ATP8B1 and belongs to the cation transport ATPase (P-type) family, type IV subfamily. FIC1 is a multi-pass membrane protein believed to play a role in the transport of aminophospholipids from the outer to the inner leaflet of various membranes and in the maintenance of asymmetric distribution of phospholipids in the canicular membrane. It may also have a role in transport of bile acids into the canaliculus, uptake of bile acids from intestinal contents into intestinal mucosa, or both. FIC1 is found in most tissues except brain and skeletal muscle and is most abundant in pancreas and small intestine. Defects in the ATP8B1 gene are the cause of intrahepatic cholestasis (PFIC1), also known as Byler disease. PFIC1 is an autosomal recessive disorder, characterized by early infancy cholestasis, that may be initially episodic but progresses to malnutrition, growth retardation and end-stage liver disease before adulthood.

REFERENCES

1. Alvarez, L., et al. 2004. Reduced hepatic expression of farnesoid X receptor in hereditary cholestasis associated to mutation in ATP8B1. Hum. Mol. Genet. 13: 2451-2460.
2. Jirsa, M., et al. 2004. Indel in the FIC1/ATP8B1 gene—a novel rare type of mutation associated with benign recurrent intrahepatic cholestasis. Hepatol. Res. 30: 1-3.
3. van Mil, S.W., et al. 2004. FIC1 is expressed at apical membranes of different epithelial cells in the digestive tract and is induced in the small intestine during postnatal development of mice. Pediatr. Res. 56: 981-987.
4. Paulusma, C.C., et al. 2006. Atp8b1 deficiency in mice reduces resistance of the canalicular membrane to hydrophobic bile salts and impairs bile salt transport. Hepatology 44: 195-204.
5. Walkowiak, J., et al. 2006. Normal pancreatic secretion in children with progressive familial intrahepatic cholestasis type 1. Scand. J. Gastroenterol. 41: 1480-1483.
6. Groen, A., et al. 2006. Increased serum concentrations of secondary bile salts during cholate feeding are due to coprophagy. A study with wild-type and Atp8b1-deficient mice. Mol. Pharm. 3: 756-761.

CHROMOSOMAL LOCATION

Genetic locus: Atp8b1 (mouse) mapping to 18 E1.

PRODUCT

FIC1 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 FIC1 shRNA Plasmid (m): sc-62317-SH and FIC1 shRNA (m) Lentiviral Particles: sc-62317-V as alternate gene silencing products.

For independent verification of FIC1 (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-62317A, sc-62317B and sc-62317C.

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

FIC1 siRNA (m) is recommended for the inhibition of FIC1 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 FIC1 gene expression knockdown using RT-PCR Primer: FIC1 (m)-PR: sc-62317-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. Cheshenko, N., et al. 2018. Herpes simplex viruses activate phospholipid scramblase to redistribute phosphatidylserines and Akt to the outer leaflet of the plasma membrane and promote viral entry. PLoS Pathog. 14: e1006766.

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.