

# NTCP siRNA (h): sc-92260

## BACKGROUND

NTCP (Na<sup>+</sup>/taurocholate transport protein), also known as SLC10A1 (solute carrier family 10 (sodium/bile acid cotransporter family), member 1), is a 349 amino acid multi-pass membrane protein that belongs to the sodium/bile acid symporter family of cotransporters. Localized to the basolateral membranes of hepatocytes, NTCP plays a role in the hepatic sodium/bile acid uptake system, which functions as a substrate-specific, sodium-dependent transporter of both bile and non-bile organic compounds. The gene encoding NTCP maps to human chromosome 14, which houses over 700 genes and comprises nearly 3.5% of the human genome. Chromosome 14 encodes the presenilin 1 (PSEN1) gene, which is one of the three key genes associated with the development of Alzheimer's disease (AD). The SERPINA1 gene is also located on chromosome 14 and, when defective, leads to the genetic disorder  $\alpha$ 1-antitrypsin deficiency, which is characterized by severe lung complications and liver dysfunction.

## REFERENCES

1. Hagenbuch, B. and Meier, P.J. 1994. Molecular cloning, chromosomal localization, and functional characterization of a human liver Na<sup>+</sup>/bile acid cotransporter. *J. Clin. Invest.* 93: 1326-1331.
2. Green, R.M., et al. 1998. Genetic mapping of the Na<sup>+</sup>-taurocholate cotransporting polypeptide to mouse chromosome 12. *Mamm. Genome* 9: 598.
3. Shiao, T., et al. 2000. Structural and functional characterization of liver cell-specific activity of the human sodium/taurocholate cotransporter. *Genomics* 69: 203-213.
4. Hallén, S., et al. 2002. Organization of the membrane domain of the human liver sodium/bile acid cotransporter. *Biochemistry* 41: 7253-7266.

## CHROMOSOMAL LOCATION

Genetic locus: SLC10A1 (human) mapping to 14q24.2.

## PRODUCT

NTCP 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NTCP shRNA Plasmid (h): sc-92260-SH and NTCP shRNA (h) Lentiviral Particles: sc-92260-V as alternate gene silencing products.

For independent verification of NTCP (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-92260A, sc-92260B and sc-92260C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

NTCP siRNA (h) is recommended for the inhibition of NTCP 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  $\mu$ M in 66  $\mu$ 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.

## GENE EXPRESSION MONITORING

NTCP (D-5): sc-518115 is recommended as a control antibody for monitoring of NTCP 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NTCP gene expression knockdown using RT-PCR Primer: NTCP (h)-PR: sc-92260-PR (20  $\mu$ l, 477 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Jang, E.S., et al. 2014. Sodium taurocholate cotransporting polypeptide mediates dual actions of deoxycholic acid in human hepatocellular carcinoma cells: enhanced apoptosis versus growth stimulation. *J. Cancer Res. Clin. Oncol.* 140: 133-144.
2. Salhab, A., et al. 2022. Sodium<sup>+</sup>/taurocholate cotransporting polypeptide as target therapy for liver fibrosis. *Gut* 71: 1373-1385.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.