

# NTCP (S-15): sc-107031

## 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

- 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.
- Green, R.M., Ananthanarayanan, M., Suchy, F.J. and Beier, D.R. 1998. Genetic mapping of the Na<sup>+</sup>-taurocholate cotransporting polypeptide to mouse chromosome 12. *Mamm. Genome.* 9: 598.
- Shiao, T., Iwahashi, M., Fortune, J., Quattrochi, L., Bowman, S., Wick, M., Qadri, I. and Simon, F.R. 2000. Structural and functional characterization of liver cell-specific activity of the human sodium/taurocholate cotransporter. *Genomics.* 69: 203-213.
- Hallen, S., Mareninova, O., Bränden, M. and Sachs, G. 2002. Organization of the membrane domain of the human liver sodium/bile acid cotransporter. *Biochemistry.* 41: 7253-7266.
6. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 182396. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Trauner, M. and Boyer, J.L. 2003. Bile salt transporters: molecular characterization, function, and regulation. *Physiol. Rev.* 83: 633-671.
- Ho, R.H., Leake, B.F., Roberts, R.L., Lee, W. and Kim, R.B. 2004. Ethnicity-dependent polymorphism in Na<sup>+</sup>-taurocholate cotransporting polypeptide (SLC10A1) reveals a domain critical for bile acid substrate recognition. *J. Biol. Chem.* 279: 7213-7222.
- Eloranta, J.J., Jung, D. and Kullak-Ublick, G.A. 2006. The human Na<sup>+</sup>-taurocholate cotransporting polypeptide gene is activated by glucocorticoid receptor and peroxisome proliferator-activated receptor-gamma coactivator-1 $\alpha$ , and suppressed by bile acids via a small heterodimer partner-dependent mechanism. *Mol. Endocrinol.* 20: 65-79.
- Dias, V. and Ribeiro, V. 2007. The expression of the solute carriers NTCP and Oct-1 is regulated by cholesterol in Hep G2 cells. *Fundam Clin Pharmacol.* 21: 445-450.

## CHROMOSOMAL LOCATION

Genetic locus: Slc10a1 (mouse) mapping to 12 D1.

## SOURCE

NTCP (S-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of NTCP of mouse origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-107031 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

NTCP (S-15) is recommended for detection of NTCP of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for NTCP siRNA (m): sc-150086, NTCP shRNA Plasmid (m): sc-150086-SH and NTCP shRNA (m) Lentiviral Particles: sc-150086-V.

Molecular Weight of NTCP: 38 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz<sup>™</sup> Mounting Medium: sc-24941.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## 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) or our catalog for detailed protocols and support products.