

rBAT (T-20): sc-27599

BACKGROUND

Heterodimeric amino acid transporters mediate the transfer of amino acids between organs and between different cell types. The heavy chain subunit is a type II membrane protein with an intracellular amino terminus, a single transmembrane helix and a large intracellular domain. The SLC3A1 gene encodes one of these heavy chains, rBAT, which dimerize with a light chain subunit (7 types have been identified) to facilitate reabsorption of dibasic amino acids and cystine in renal and intestinal epithelial cells. Defects in this transport system causes cystinuria, a disease that manifests as the development of kidney stones. Mutations in SLC3A1 or the gene encoding the light chain subunit, SLC7A9, both cause cystinuria, the former classified as "type I" and the latter as "non-type I", however, the clinical presentation of the two is indistinguishable, expounding the importance of the functional complex, and not just one subunit, for normal amino acid transport.

REFERENCES

1. Feliubadalo, L., et al. 1999. Non-type I cystinuria caused by mutations in SLC7A9, encoding a subunit (bo,+AT) of rBAT. International cystinuria consortium. *Nat. Genet.* 23: 52-57.
2. Botzenhart, E., et al. 2002. Cystinuria in children: distribution and frequencies of mutations in the SLC3A1 and SLC7A9 genes. *Kidney Int.* 62: 1136-1142.
3. Ishihara, M., et al. 2002. Cystine transport activity of heterozygous rBAT mutants expressed in *Xenopus* oocytes. *Nephron* 91: 276-280.
4. Moschen, I., et al. 2002. Influence of rBAT-mediated amino acid transport on cytosolic pH. *Nephron* 91: 631-636.
5. Peters, T., et al. 2003. A mouse model for cystinuria type I. *Hum. Mol. Genet.* 12: 2109-2120.
6. He, D., et al. 2003. Rat liver bile acid CoA:amino acid N-acyltransferase: expression, characterization and peroxisomal localization. *J. Lipid Res.* 44: 2242-2249.

CHROMOSOMAL LOCATION

Genetic locus: SLC3A1 (human) mapping to 2p16.3; Slc3a1 (mouse) mapping to 17 E4.

SOURCE

rBAT (T-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of rBAT of rat origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-27599 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

rBAT (T-20) is recommended for detection of rBAT of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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 rBAT siRNA (m): sc-152719, rBAT shRNA Plasmid (m): sc-152719-SH and rBAT shRNA (m) Lentiviral Particles: sc-152719-V

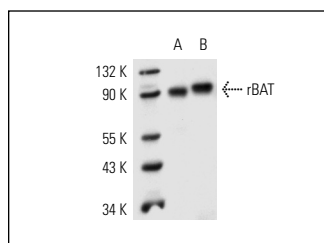
Molecular Weight of rBAT: 83 kDa.

Positive Controls: rat liver extract: sc-2395, mouse kidney extract: sc-2255 or human kidney.

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™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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™ Mounting Medium: sc-24941.

DATA



rBAT (T-20): sc-27599. Western blot analysis of rBAT expression in rat kidney (A) and mouse kidney (B) tissue extracts.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.