

rBAT (H-300): sc-32930

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 (seven 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 2p21; Slc3a1 (mouse) mapping to 17 E4.

SOURCE

rBAT (H-300) is a rabbit polyclonal antibody raised against amino acids 111-410 mapping within an extracellular domain of rBAT of human origin.

PRODUCT

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

STORAGE

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

APPLICATIONS

rBAT (H-300) is recommended for detection of rBAT of mouse, rat and human 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).

rBAT (H-300) is also recommended for detection of rBAT in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for rBAT siRNA (h): sc-106486, rBAT siRNA (m): sc-152719, rBAT shRNA Plasmid (h): sc-106486-SH, rBAT shRNA Plasmid (m): sc-152719-SH, rBAT shRNA (h) Lentiviral Particles: sc-106486-V and rBAT shRNA (m) Lentiviral Particles: sc-152719-V.

Molecular Weight of rBAT: 83 kDa.

Positive Controls: rat kidney extract: sc-2394 or mouse kidney extract: sc-2255.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Conde-Vancells, J., et al. 2010. Candidate biomarkers in exosome-like vesicles purified from rat and mouse urine samples. Proteomics Clin. Appl. 4: 416-425.

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.



Try **rBAT (C-10): sc-393589**, our highly recommended monoclonal alternative to rBAT (H-300).