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rBAT (G-5): sc-518240

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 (b⁰+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. Orts Costa, J.A., et al. 2003. Cystinuria update: clinical, biochemical and genetic aspects. An. Med. Interna 20: 317-326.

CHROMOSOMAL LOCATION

Genetic locus: SLC3A1 (human) mapping to 2p21.

SOURCE

rBAT (G-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 274-295 of rBAT of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

rBAT (G-5) is available conjugated to agarose (sc-518240 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-518240 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518240 PE), fluorescein (sc-518240 FITC), Alexa Fluor® 488 (sc-518240 AF488), Alexa Fluor® 546 (sc-518240 AF546), Alexa Fluor® 594 (sc-518240 AF594) or Alexa Fluor® 647 (sc-518240 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-518240 AF680) or Alexa Fluor® 790 (sc-518240 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

rBAT (G-5) is recommended for detection of rBAT of human origin by Western Blotting (starting dilution 1:100, 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 (h): sc-106486, rBAT shRNA Plasmid (h): sc-106486-SH and rBAT shRNA (h) Lentiviral Particles: sc-106486-V.

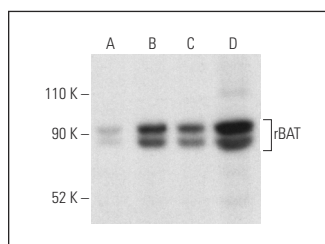
Molecular Weight of rBAT: 83 kDa.

Positive Controls: rBAT (h): 293T Lysate: sc-159836 or K-562 whole cell lysate: sc-2203.

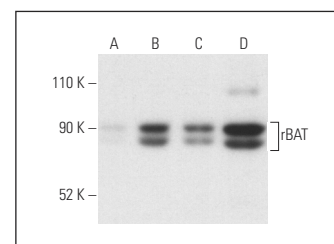
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



rBAT (G-5): sc-518240. Western blot analysis of rBAT expression in non-transfected 293T: sc-117752 (A), human rBAT transfected 293T: sc-159836 (B), human rBAT transfected 293T: sc-170383 (C) and K-562 (D) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



rBAT (G-5): sc-518240. Western blot analysis of rBAT expression in non-transfected 293T: sc-117752 (A), human rBAT transfected 293T: sc-159836 (B), human rBAT transfected 293T: sc-170383 (C) and K-562 (D) whole cell lysates. Detection reagent used: m-IgG_{2a} BP-HRP: sc-542731.

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 for detailed protocols and support products.

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