

SNAT4 (A-4): sc-514047

BACKGROUND

The sodium-coupled neutral amino acid transporters (SNAT) of the SLC38 gene family include system A subtypes SNAT1, SNAT2 and SNAT4 and system N subtypes SNAT3 and SNAT5. The SLC38 transporters are essential for the uptake of nutrients, energy production, metabolism, detoxification, and the cycling of neurotransmitters. SNAT4, also designated ATA3, NAT3 or PAAT, has been mapped to human chromosome 12q13.11. Tissue expression of the SNAT4 protein is most predominant in embryonic and adult liver and to a much lesser extent in the muscle, kidney and pancreas. System A transport proteins may play a significant role in fetal development and inhibition of the transport system has been associated with fetal growth retardation.

REFERENCES

1. Wang, H., et al. 2000. Cloning and functional expression of ATA1, a subtype of amino acid transporter A, from human placenta. *Biochem. Biophys. Res. Commun.* 273: 1175-1179.
2. Hatanaka, T., et al. 2000. Primary structure, functional characteristics and tissue expression pattern of human ATA2, a subtype of amino acid transport system A. *Biochim. Biophys. Acta* 1467: 1-6.
3. Gu, S., et al. 2001. Characterization of an N-system amino acid transporter expressed in retina and its involvement in glutamine transport. *J. Biol. Chem.* 276: 24137-24144.
4. Gu, S., et al. 2001. A novel human amino acid transporter, hNAT3: cDNA cloning, chromosomal mapping, genomic structure, expression, and functional characterization. *Genomics* 74: 262-272.
5. Freeman, T.L., et al. 2002. ATA2-mediated amino acid uptake following partial hepatectomy is regulated by redistribution to the plasma membrane. *Arch. Biochem. Biophys.* 400: 215-222.
6. Palii, S.S., et al. 2004. Transcriptional control of the human sodium-coupled neutral amino acid transporter system A gene by amino acid availability is mediated by an intronic element. *J. Biol. Chem.* 279: 3463-3471.
7. Sidoryk, M., et al. 2004. Increased expression of a glutamine transporter SNAT3 is a marker of malignant gliomas. *Neuroreport* 15: 575-578.

CHROMOSOMAL LOCATION

Genetic locus: Slc38a4 (mouse) mapping to 15 F1.

SOURCE

SNAT4 (A-4) is a mouse monoclonal antibody raised against amino acids 1-60 mapping within an N-terminal cytoplasmic domain of SNAT4 of rat 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.

STORAGE

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

APPLICATIONS

SNAT4 (A-4) is recommended for detection of SNAT4 of mouse and rat 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 SNAT4 siRNA (m): sc-44995, SNAT4 shRNA Plasmid (m): sc-44995-SH and SNAT4 shRNA (m) Lentiviral Particles: sc-44995-V.

Molecular Weight of SNAT4: 60 kDa.

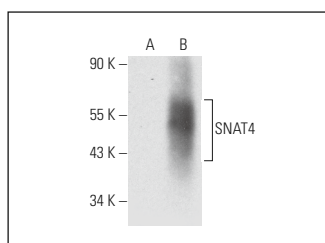
Positive Controls: NIH/3T3 whole cell lysate: sc-2210 or SNAT4 (m2): 293T Lysate: sc-123681.

RECOMMENDED SUPPORT REAGENTS

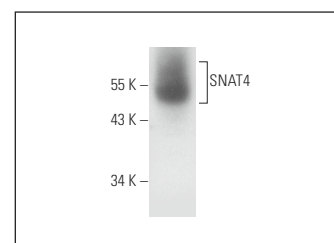
To ensure optimal results, the following support reagents are recommended:

- 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



SNAT4 (A-4): sc-514047. Western blot analysis of SNAT4 expression in non-transfected: sc-117752 (A) and mouse SNAT4 transfected: sc-123681 (B) 293T whole cell lysates.



SNAT4 (A-4): sc-514047. Western blot analysis of SNAT4 expression in NIH/3T3 whole cell lysate.

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.