

SNAT1 (T-20): sc-33439

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. The SNAT1 protein, also designated ATA1 or NAT2, is encoded by the human gene SLC38A1, which maps to chromosome 12q13.11. SNAT1 is responsible for the transport of glutamine, an intermediate in the synthesis of urea, and may be involved in the generation of glutamate in the retina. SNAT1 protein may be detected in some tissues such as heart, brain and placenta and expression levels are enriched in certain neuronal populations within the CNS. SNAT1 is not present in astrocytes.

REFERENCES

- 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.
- 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.
- 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.
- 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.
- 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.
- Sidoryk, M., et al. 2004. Increased expression of a glutamine transporter SNAT3 is a marker of malignant gliomas. *Neuroreport* 15: 575-578.
- Desforges, M., et al. 2006. The SNAT4 isoform of the system A amino acid transporter is expressed in human placenta. *Am. J. Physiol., Cell Physiol.* 290: C305-C312.

CHROMOSOMAL LOCATION

Genetic locus: SLC38A1 (human) mapping to 12q13.11; Slc38a1 (mouse) mapping to 15 F1.

SOURCE

SNAT1 (T-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SNAT1 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.

Blocking peptide available for competition studies, sc-33439 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SNAT1 (T-20) is recommended for detection of SNAT1 of mouse, rat and human 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).

SNAT1 (T-20) is also recommended for detection of SNAT1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for SNAT1 siRNA (h): sc-44972, SNAT1 siRNA (m): sc-44973, SNAT1 shRNA Plasmid (h): sc-44972-SH, SNAT1 shRNA Plasmid (m): sc-44973-SH, SNAT1 shRNA (h) Lentiviral Particles: sc-44972-V and SNAT1 shRNA (m) Lentiviral Particles: sc-44973-V.

Molecular Weight of SNAT1: 55 kDa.

Positive Controls: Ramos cell lysate: sc-2216 or NAMALWA cell lysate: sc-2234.

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) 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.

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 or our catalog for detailed protocols and support products.



Try **SNAT1 (H-9): sc-137032**, our highly recommended monoclonal alternative to SNAT1 (T-20).