

# SNAT5 (N-15): sc-50681

## 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. SNAT proteins are expressed in most mammalian tissues. SNAT5 is a neutral amino acid carrier structurally and mechanistically related to the SNAT3 transporter that participates in the glutamate-glutamine cycle in the brain and that mediates the efflux of glutamine from glial cells. It is expressed ubiquitously but distributed unevenly in the CNS, with highest accumulation in the neocortex, hippocampus, striatum and spinal cord, and moderate accumulation in the thalamus, hypothalamus and brainstem.

## REFERENCES

- Mackenzie, B., et al. 2004. Sodium-coupled neutral amino acid (system N/A) transporters of the SLC38 gene family. *Pflügers Arch.* 447: 784-795.
- Sidoryk, M., et al. 2004. Increased expression of a glutamine transporter SNAT3 is a marker of malignant gliomas. *Neuroreport* 15: 575-578.
- Baird, F.E., et al. 2004. Bidirectional substrate fluxes through the system N (SNAT5) glutamine transporter may determine net glutamine flux in rat liver. *J. Physiol.* 559: 367-381.
- Cubelos, B. et al. 2005. Amino acid transporter SNAT5 localizes to glial cells in the rat brain. *Glia* 49: 230-244.
- Onan, M.C. et al. 2005. Type I diabetes affects skeletal muscle glutamine uptake in a fiber-specific manner. *Exp. Biol. Med.* 230: 606-611.
- Umapathy, N.S. et al. 2005. Expression and function of glutamine transporters SN1 (SNAT3) and SN2 (SNAT5) in retinal Muller cells. *Invest. Ophthalmol. Vis. Sci.* 46: 3980-3987.
- Baird, F.E., et al. 2006. Evidence for allosteric regulation of pH-sensitive system A (SNAT2) and system N (SNAT5) amino acid transporter activity involving a conserved histidine residue. *Biochem. J.* 397: 369-375.

## CHROMOSOMAL LOCATION

Genetic locus: SLC38A5 (human) mapping to Xp11.23; Slc38a5 (mouse) mapping to X A1.1.

## SOURCE

SNAT5 (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of SNAT5 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-50681 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

SNAT5 (N-15) is recommended for detection of SNAT5 of human and, to a lesser extent, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

SNAT5 (N-15) is also recommended for detection of SNAT5 in additional species, including canine and bovine.

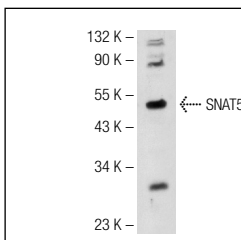
Suitable for use as control antibody for SNAT5 siRNA (h): sc-61577, SNAT5 siRNA (m): sc-61578, SNAT5 shRNA Plasmid (h): sc-61577-SH, SNAT5 shRNA Plasmid (m): sc-61578-SH, SNAT5 shRNA (h) Lentiviral Particles: sc-61577-V and SNAT5 shRNA (m) Lentiviral Particles: sc-61578-V.

Molecular Weight of SNAT5: 50-55 kDa.

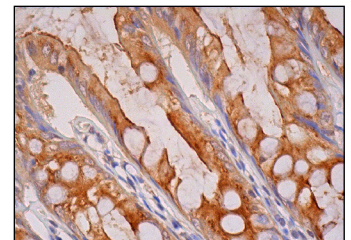
## RECOMMENDED SECONDARY REAGENTS

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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



SNAT5 (N-15): sc-50681. Western blot analysis of SNAT5 expression in Sol8 whole cell lysate.



SNAT5 (N-15): sc-50681. Immunoperoxidase staining of formalin fixed, paraffin-embedded human rectum tissue showing cytoplasmic and membrane staining of glandular cells.

## STORAGE

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