

SNAT5 (h2): 293T Lysate: sc-173683

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

1. Mackenzie, B. and Erickson, J.D. 2004. Sodium-coupled neutral amino acid (system N/A) transporters of the SLC38 gene family. *Pflügers Archiv*. 447: 784-795.
2. Sidoryk, M., Matyja, E., Dybel, A., Zielinska, M., Bogucki, J., Jaskólski, D.J., Liberski, P.P., Kowalczyk, P. and Albrecht, J. 2004. Increased expression of a glutamine transporter SNAT3 is a marker of malignant gliomas. *Neuroreport* 15: 575-578.
3. Baird, F.E., Beattie, K.J., Hyde, A.R., Ganapathy, V., Rennie, M.J. and Taylor, P.M. 2004. Bidirectional substrate fluxes through the system N (SNAT5) glutamine transporter may determine net glutamine flux in rat liver. *J. Physiol.* 559: 367-381.
4. Cubelos, B., González-González, I.M., Giménez, C. and Zafra, F. 2005. Amino acid transporter SNAT5 localizes to glial cells in the rat brain. *Glia* 49: 230-244.
5. Onan, M.C., Fisher, J.S., Ju, J.S., Fuchs, B.C. and Bode, B.P. 2005. Type I diabetes affects skeletal muscle glutamine uptake in a fiber-specific manner. *Exp. Biol. Med.* 230: 606-611.
6. Umapathy, N.S. Li, W., Mysona, B.A., Smith, S.B. and Ganapathy, V.I. 2005. Expression and function of glutamine transporters SN1 (SNAT3) and SN2 (SNAT5) in retinal Muller cells. *Invest. Ophthalmol. Vis. Sci.* 46: 3980-3987.
7. Baird, F.E., Pinilla-Tenas, J.J., Ogilvie, W.L., Ganapathy, V., Hundal, H.S. and Taylor, P.M. 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.

PRODUCT

SNAT5 (h2): 293T Lysate represents a lysate of human SNAT5 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

SNAT5 (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive SNAT5 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

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.