

ASCT1 (H-60): sc-134846



The Power to Question

BACKGROUND

Neutral amino acid transporter proteins, also designated alanine/serine/cysteine/threonine transporters (ASCT), belong to the sodium:dicarboxylate (SDF) symporter family or proteins. The members of this family of proteins are multi-pass, membrane-bound proteins that act as transporters for threonine, alanine, serine and cysteine. ASCT1 and ASCT2 have been shown to exhibit sodium dependence. ASCT1 is expressed in most tissues, but highest expression has been detected in muscle, brain and pancreas. The highest levels of ASCT2 expression are found in placenta, kidney, pancreas, muscle and intestine.

REFERENCES

1. Arriza, J.L., et al. 1993. Cloning and expression of a human neutral amino acid transporter with structural similarity to the glutamate transporter gene family. *J. Biol. Chem.* 268: 15329-15332.
2. Hofmann, K., et al. 1995. Human neutral amino acid transporter ASCT1: structure of the gene (SLC1A4) and localization to chromosome 2p15-p13. *Genomics* 24: 20-26.
3. Kekuda, R., et al. 1996. Cloning of the sodium-dependent, broad-scope, neutral amino acid transporter Bo from a human placental choriocarcinoma cell line. *J. Biol. Chem.* 271: 18657-18661.
4. Rasko, J.E., et al. 1999. The RD114/simian type D retrovirus receptor is a neutral amino acid transporter. *Proc. Nat. Acad. Sci. USA* 96: 2129-2134.
5. Tailor, C.S., et al. 1999. A sodium-dependent neutral amino acid transporter mediates infections of feline and baboon endogenous retroviruses and simian type D retroviruses. *J. Virol.* 73: 4470-4474.
6. Tailor, C.S., et al. 2001. Truncated forms of the dual function human ASCT2 neutral amino acid transporter/retroviral receptor are translationally initiated at multiple alternative CUG and GUG codons. *J. Biol. Chem.* 276: 27221-27230.
7. Yamamoto, T., et al. 2004. Functional identification of ASCT1 neutral amino acid transporter as the predominant system for the uptake of L-serine in rat neurons in primary culture. *Neurosci. Res.* 49: 101-111.

CHROMOSOMAL LOCATION

Genetic locus: SLC1A4 (human) mapping to 2p14; Slc1a4 (mouse) mapping to 11 A3.1.

SOURCE

ASCT1 (H-60) is a rabbit polyclonal antibody raised against amino acids 112-171 mapping within an internal region of ASCT1 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.

STORAGE

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

APPLICATIONS

ASCT1 (H-60) is recommended for detection of ASCT1 of mouse, rat and human 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

ASCT1 (H-60) is also recommended for detection of ASCT1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for ASCT1 siRNA (h): sc-60208, ASCT1 siRNA (m): sc-60209, ASCT1 shRNA Plasmid (h): sc-60208-SH, ASCT1 shRNA Plasmid (m): sc-60209-SH, ASCT1 shRNA (h) Lentiviral Particles: sc-60208-V and ASCT1 shRNA (m) Lentiviral Particles: sc-60209-V.

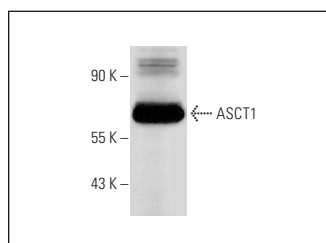
Molecular Weight of ASCT1: 56 kDa.

Positive Controls: rat cerebellum extract: sc-2398, human skeletal muscle extract: sc-363776 or human brain hippocampus extract: sc-364375.

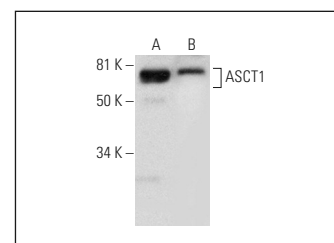
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



ASCT1 (H-60): sc-134846. Western blot analysis of ASCT1 expression in rat cerebellum tissue extract.



ASCT1 (H-60): sc-134846. Western blot analysis of ASCT1 expression in human skeletal muscle (A) and human hippocampus (B) tissue extracts.

SELECT PRODUCT CITATIONS

1. Way, J.D., et al. 2014. Synthesis and evaluation of 2-amino-5-(4-[(18)F]fluorophenyl)pent-4-ynoic acid ([18F]FPhPA): A novel (18)F-labeled amino acid for oncologic PET imaging. *Nucl. Med. Biol.* 41: 660-669.

RESEARCH USE

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