

Y+LAT1 (H-55): sc-67129

BACKGROUND

Y+L amino acid transporter 1 (Y+LAT1), also designated monocyte amino acid permease 2 (MOP-2), is an integral membrane protein. Y+LAT1 is an L-type amino acid transporter (LAT) and belongs to the amino acid-polyamine-organocation (APC) superfamily of proteins. The gene encoding for the Y+LAT1 protein, SLC7A7, which maps to chromosome 14q11.2, has 11 exons and 10 introns spanning 18 kb of genomic DNA. Y+LAT1 shows dibasic amino acid transport activity. Lysinuric protein intolerance (LPI) is an autosomal recessive multisystem disorder caused by defects in the cationic amino acid (CAA) transport at the basolateral membrane of epithelial cells in intestines and kidney. The gene SLC7A7 is mutated in LPI, which is characterized by vomiting, poor feeding, diarrhea and occasionally, episodes of hyperammoniaemic coma. Y+LAT1 is expressed in kidney, lung, peripheral blood leukocytes, placenta, spleen and small intestine.

REFERENCES

1. Torrents, D., et al. 1998. Identification and characterization of a membrane protein (Y+L amino acid transporter-1) that associates with 4F2hc to encode the amino acid transport activity Y+L. A candidate gene for lysinuric protein intolerance. *J. Biol. Chem.* 273: 32437-32445.
2. Torrents, D., et al. 1999. Identification of SLC7A7, encoding Y+LAT1, as the lysinuric protein intolerance gene. *Nat. Genet.* 21: 293-296.
3. Borsani, G., et al. 1999. SLC7A7, encoding a putative permease-related protein, is mutated in patients with lysinuric protein intolerance. *Nat. Genet.* 21: 297-301.
4. Segawa, H., et al. 1999. Identification and functional characterization of a Na⁺-independent neutral amino acid transporter with broad substrate selectivity. *J. Biol. Chem.* 274: 19745-19751.
5. Mykkanen, J., et al. 2000. Functional analysis of novel mutations in Y+LAT1 amino acid transporter gene causing lysinuric protein intolerance (LPI). *Hum. Mol. Genet.* 9: 431-438.
6. Noguchi, A., et al. 2000. SLC7A7 genomic structure and novel variants in three Japanese lysinuric protein intolerance families. *Hum. Mutat.* 15: 367-372.
7. Sperandio, M.P., et al. 2000. Structure of the SLC7A7 gene and mutational analysis of patients affected by lysinuric protein intolerance. *Am. J. Hum. Genet.* 66: 92-99.
8. Shoji, Y., et al. 2002. Five novel SLC7A7 variants and Y+L gene-expression pattern in cultured lymphoblasts from Japanese patients with lysinuric protein intolerance. *Hum. Mutat.* 20: 375-381.
9. Verri, T., et al. 2005. Multiple pathways for cationic amino acid transport in rat thyroid epithelial cell line PC C13. *Am. J. Physiol., Cell Physiol.* 288: C290-C303.

CHROMOSOMAL LOCATION

Genetic locus: SLC7A7 (human) mapping to 14q11.2; Slc7a7 (mouse) mapping to 14 C2.

SOURCE

Y+LAT1 (H-55) is a rabbit polyclonal antibody raised against amino acids 456-510 mapping at the C-terminus of Y+LAT1 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.

APPLICATIONS

Y+LAT1 (H-55) is recommended for detection of Y+LAT1 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).

Y+LAT1 (H-55) is also recommended for detection of Y+LAT1 in additional species, including porcine.

Suitable for use as control antibody for Y+LAT1 siRNA (h): sc-45427, Y+LAT1 siRNA (m): sc-45428, Y+LAT1 shRNA Plasmid (h): sc-45427-SH, Y+LAT1 shRNA Plasmid (m): sc-45428-SH, Y+LAT1 shRNA (h) Lentiviral Particles: sc-45427-V and Y+LAT1 shRNA (m) Lentiviral Particles: sc-45428-V.

Molecular Weight of Y+LAT1: 40 kDa.

Positive Controls: WI-38 whole cell lysate: sc-364260.

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.

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.