

LAT1 (D-10): sc-374232

BACKGROUND

L-type amino acid transporter 1 (LAT1) is a multipass-membrane protein responsible for sodium-independent, high-affinity transport of large neutral amino acids. LAT1 functions as a disulfide-linked heterodimer with the amino acid transport protein CD98. LAT1 is expressed predominantly in adult lung and liver but is also expressed in brain, thymus, retina, testis, placenta, bone marrow and fetal liver. In the retina, LAT1 localizes to the blood-retinal-barrier (BRB) and mediates L-leucine transport from the blood to the retina. The devastating effects on the brain caused by phenylketonuria are due to the increased levels of LAT1 on the blood-brain-barrier in response to high concentrations of phenylalanine in the blood. LAT1 accepts the amino-acid related anticancer agent melphalan and plays a significant role in cell proliferation, differentiation, and invasion in esophageal squamous cell carcinoma.

CHROMOSOMAL LOCATION

Genetic locus: SLC7A5 (human) mapping to 16q24.2; Slc7a5 (mouse) mapping to 8 E1.

SOURCE

LAT1 (D-10) is a mouse monoclonal antibody raised against amino acids 365-507 mapping at the C-terminus of LAT1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

LAT1 (D-10) is available conjugated to agarose (sc-374232 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374232 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374232 PE), fluorescein (sc-374232 FITC), Alexa Fluor® 488 (sc-374232 AF488), Alexa Fluor® 546 (sc-374232 AF546), Alexa Fluor® 594 (sc-374232 AF594) or Alexa Fluor® 647 (sc-374232 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374232 AF680) or Alexa Fluor® 790 (sc-374232 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

LAT1 (D-10) is recommended for detection of LAT1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for LAT1 siRNA (h): sc-62555, LAT1 siRNA (m): sc-62556, LAT1 shRNA Plasmid (h): sc-62555-SH, LAT1 shRNA Plasmid (m): sc-62556-SH, LAT1 shRNA (h) Lentiviral Particles: sc-62555-V and LAT1 shRNA (m) Lentiviral Particles: sc-62556-V.

Molecular Weight (observed) of LAT1: 40 kDa.

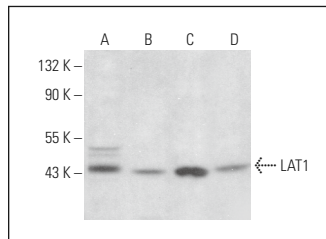
Molecular Weight of glycosylated LAT1: 45-55 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, ARPE-19 whole cell lysate: sc-364357 or L6 whole cell lysate: sc-364196.

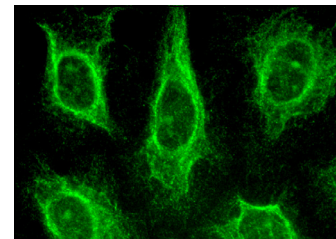
STORAGE

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

DATA



LAT1 (D-10): sc-374232. Western blot analysis of LAT1 expression in MCF7 (A), ARPE-19 (B), P19 (C) and L6 (D) whole cell lysates.



LAT1 (D-10): sc-374232. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Dosier, L.B.M., et al. 2017. Antagonists of the system L neutral amino acid transporter (LAT) promote endothelial adhesivity of human red blood cells. *Thromb. Haemost.* 117: 1402-1411.
2. Carnes, R., et al. 2019. Multi-omics profiling for NF1 target discovery in Neurofibromin (NF1) deficient cells. *Proteomics* 19: e1800334.
3. Enomoto, K., et al. 2019. A novel therapeutic approach for anaplastic thyroid cancer through inhibition of LAT1. *Sci. Rep.* 9: 14616.
4. Yi, W., et al. 2020. Bioengineered miR-328-3p modulates GLUT1-mediated glucose uptake and metabolism to exert synergistic antiproliferative effects with chemotherapeutics. *Acta Pharm. Sin. B* 10: 159-170.
5. Wang, Q., et al. 2020. A bioorthogonal system reveals antitumour immune function of pyroptosis. *Nature* 579: 421-426.
6. Lesner, N.P., et al. 2020. α -ketobutyrate links alterations in cystine metabolism to glucose oxidation in mtDNA mutant cells. *Metab. Eng.* 60: 157-167.
7. Sayama, S., et al. 2020. Maternal erythrocyte ENT1-mediated AMPK activation counteracts placental hypoxia and supports fetal growth. *JCI Insight* 5: 130205.
8. Yoshida, F., et al. 2020. Difference in BPA uptake between glioma stem-like cells and their cancerous cells. *Appl. Radiat. Isot.* 164: 109234.
9. Xu, J., et al. 2020. Intervening upregulated SLC7A5 could mitigate inflammatory mediator by mTOR-P70S6K signal in rheumatoid arthritis synoviocytes. *Arthritis Res. Ther.* 22: 200.
10. Stemick, J., et al. 2020. Compensatory neuritogenesis of serotonergic afferents within the striatum of a transgenic rat model of Parkinson's disease. *Brain Res.* 1748: 147119.

RESEARCH USE

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

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