

#5347 Store at -20C

LAT1 Antibody

Cell Signaling
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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB, IP	H	Endogenous	39	Rabbit	#Q01650	8140

Product Usage Information

Application

Western Blotting

Dilution

1:1000

Immunoprecipitation

1:100

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity / Sensitivity

LAT1 Antibody detects endogenous levels of total LAT1 protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues at the amino terminus of human LAT1 protein. Antibodies were purified by protein A and peptide affinity chromatography.

Background

L-type amino acid transporter 1 (LAT1), also known as solute carrier family 7 member 5 (SLC7A5), is a high-affinity neutral transporter of larger amino acids. It facilitates the cellular amino acid uptake in a sodium independent manner (1-2) and selectively transports D- and L-isomers of small neutral amino acids (3). LAT1 also regulates amino acid exchange in conjunction with solute carrier family 1 member 5 (SLC1A5) (2,4-6). Transport of thyroid hormones across the placenta is established via LAT1 during normal fetal development (7). LAT1 promotes neuronal cell proliferation by regulating the transport of amino acids across the blood brain barrier (8). LAT1 is upregulated in various cancer types, including breast cancer, lung cancer, prostate cancer, and gliomas (9,10). High expression of LAT1 is detected in non-small cell lung cancer with lymph node metastases (9,11,12). Increased LAT1 expression is a novel biomarker of high grade malignancy in prostate cancers (12). Inhibition of LAT1 suppresses tumor cell growth in several tumor types (10,13).

Background References

1. Mastroberardino, L. et al. (1998) *Nature* 395, 288-91.
2. Kanai, Y. et al. (1998) *J Biol Chem* 273, 23629-32.
3. Torrents, D. et al. (1998) *J Biol Chem* 273, 32437-45.
4. Meier, C. et al. (2002) *EMBO J* 21, 580-9.
5. Yanagida, O. et al. (2001) *Biochim Biophys Acta* 1514, 291-302.
6. Nicklin, P. et al. (2009) *Cell* 136, 521-34.
7. Ritchie, J.W. and Taylor, P.M. (2001) *Biochem J* 356, 719-25.
8. Verrey, F. (2003) *Pflugers Arch* 445, 529-33.
9. Kaira, K. et al. (2009) *Ann Surg Oncol* 16, 3473-81.
10. Kobayashi, K. et al. (2008) *Neurosurgery* 62, 493-503; discussion 503-4.
11. Imai, H. et al. (2009) *Histopathology* 54, 804-13.
12. Sakata, T. et al. (2009) *Pathol Int* 59, 7-18.
13. Shennan, D.B. and Thomson, J. (2008) *Oncol Rep* 20, 885-9.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting IP: Immunoprecipitation

Cross-Reactivity Key

H: human M: mouse R: rat Hm: hamster Mk: monkey Vir: virus Mi: mink C: chicken Dm: D. melanogaster
X: Xenopus Z: zebrafish B: bovine Dg: dog Pg: pig Sc: S. cerevisiae Ce: C. elegans Hr: horse
GP: Guinea Pig Rab: rabbit All: all species expected

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