

LAT (FL-233): sc-7948

BACKGROUND

T cell receptors activate immune responses by recognizing antigen and initiating a cascade of intracellular signal transduction events, eventually culminating in cell proliferation and differentiation. Both protein tyrosine kinases and PLC γ are activated by this event. LAT, or linker for activation of T cells, is an integral membrane protein that has been shown to associate with PLC γ 1, as well as GRB2 and the p85 subunit of PI 3-kinase. Binding of these signaling molecules to LAT is associated with phosphorylation of LAT by ZAP-70/Syk tyrosine kinases. LAT appears to play a role in activation of transcription mediated by AP-1 and NF-AT following stimulation of the T cell receptor, suggesting that it acts as a linker protein in T cell activation. LAT protein is palmitoylated, and this modification is required for its tyrosine phosphorylation and localization to glycolipid-enriched microdomains.

REFERENCES

- Weiss, A., et al. 1991. Signal transduction by the T cell antigen receptor. *Semin. Immunol.* 3: 313-324.
- Isakov, N., et al. 1994. The role of tyrosine kinases and phosphotyrosine-containing recognition motifs in regulation of the T cell-antigen receptor-mediated signal transduction pathway. *J. Leukoc. Biol.* 55: 265-271.

CHROMOSOMAL LOCATION

Genetic locus: LAT (human) mapping to 16p11.2; Lat (mouse) mapping to 7 F3.

SOURCE

LAT (FL-233) is a rabbit polyclonal antibody raised against amino acids 1-233 representing full length LAT of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

LAT (FL-233) is recommended for detection of LAT of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 LAT siRNA (h): sc-35795, LAT siRNA (m): sc-35796, LAT shRNA Plasmid (h): sc-35795-SH, LAT shRNA Plasmid (m): sc-35796-SH, LAT shRNA (h) Lentiviral Particles: sc-35795-V and LAT shRNA (m) Lentiviral Particles: sc-35796-V.

Molecular Weight of LAT: 36-38 kDa.

Positive Controls: LAT (m): 293T Lysate: sc-127084, Jurkat whole cell lysate: sc-2204 or HuT 78 whole cell lysate: sc-2208.

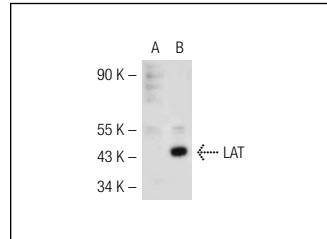
RESEARCH USE

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

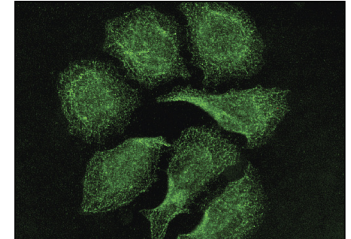
STORAGE

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

DATA



LAT (FL-233): sc-7948. Western blot analysis of LAT expression in non-transfected: sc-117752 (A) and mouse LAT transfected: sc-127084 (B) 293T whole cell lysates.



LAT (FL-233): sc-7948. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization.

SELECT PRODUCT CITATIONS

- Hegner, S.P., et al. 2000. Tyrosine-phosphorylated Vav1 as a point of integration for T-cell receptor- and CD28-mediated activation of JNK, p38, and interleukin-2 transcription. *J. Biol. Chem.* 275: 18160-18171.
- Larbi, A., et al. 2006. Differential role of lipid rafts in the functions of CD4⁺ and CD8⁺ human T lymphocytes with aging. *Cell. Signal.* 18: 1017-1030.
- Marko, M.G., et al. 2007. Age-associated decline in effective immune synapse formation of CD4⁺ T cells is reversed by vitamin E supplementation. *J. Immunol.* 178: 1443-1449.
- Ambrogio, C., et al. 2009. NPM-ALK oncogenic tyrosine kinase controls T-cell identity by transcriptional regulation and epigenetic silencing in lymphoma cells. *Cancer Res.* 69: 8611-8619.
- Miazek, A., et al. 2009. Peripheral Thy1⁺ lymphocytes rearranging TCR-gammadelta genes in LAT-deficient mice. *Eur. J. Immunol.* 39: 2596-2605.
- Sanderson, M.P., et al. 2010. Comparison of the anti-allergic activity of Syk inhibitors with optimized Syk siRNAs in Fc ϵ RI-activated RBL-2H3 basophilic cells. *Cell. Immunol.* 262: 28-34.
- Geissinger, E., et al. 2010. Disturbed expression of the T-cell receptor/CD3 complex and associated signaling molecules in CD30⁺ T-cell lymphoproliferations. *Haematologica* 95: 1697-1704.
- Song, S., et al. 2011. A requirement for the p85 PI3K adapter protein BCAP in the protection of macrophages from apoptosis induced by endoplasmic reticulum stress. *J. Immunol.* 187: 619-625.


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