

LAT (LAT-01): sc-51663

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

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- Zhang, W., et al. 1998. LAT palmitoylation: its essential role in membrane microdomain targeting and tyrosine phosphorylation during T cell activation. *Immunity* 9: 239-246.
- Brdicka, T., et al. 1998. T cell receptor signalling results in rapid tyrosine phosphorylation of the linker protein LAT present in detergent-resistant membrane microdomains. *Biochem. Biophys. Res. Commun.* 248: 356-360.
- Bonello, G., et al. 2004. Dynamic recruitment of the adaptor protein LAT: LAT exists in two distinct intracellular pools and controls its own recruitment. *J. Cell Sci.* 117: 1009-1016.
- Cho, S., et al. 2004. Structural basis for differential recognition of tyrosine-phosphorylated sites in the linker for activation of T cells (LAT) by the adaptor Gads. *EMBO J.* 23: 1441-1451.
- Matsuda, S., et al. 2004. Negative feedback loop in T cell activation through MAPK-catalyzed threonine phosphorylation of LAT. *EMBO J.* 23: 2577-2585.

CHROMOSOMAL LOCATION

Genetic locus: LAT (human) mapping to 16p11.2.

SOURCE

LAT (LAT-01) is a mouse monoclonal antibody raised against a recombinant polypeptide that corresponds to the cytoplasmic domain of LAT of human origin.

PRODUCT

Each vial contains 100 μ g IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

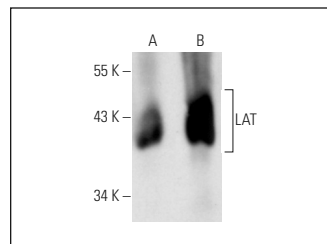
LAT (LAT-01) is recommended for detection of LAT of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for LAT siRNA (h): sc-35795, LAT shRNA Plasmid (h): sc-35795-SH and LAT shRNA (h) Lentiviral Particles: sc-35795-V.

Molecular Weight of LAT: 36-38 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204 or HuT 78 whole cell lysate: sc-2208.

DATA



LAT (LAT-01): sc-51663. Western blot analysis of LAT expression in Jurkat (A) and Hut 78 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Buitrago, L., et al. 2013. Tyrosine phosphorylation on spleen tyrosine kinase (Syk) is differentially regulated in human and murine platelets by protein kinase C isoforms. *J. Biol. Chem.* 288: 29160-29169.

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 for detailed protocols and support products.