

LAT (Q-20): sc-7548

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 (Q-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of 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.

Blocking peptide available for competition studies, sc-7548 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

LAT (Q-20) 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.

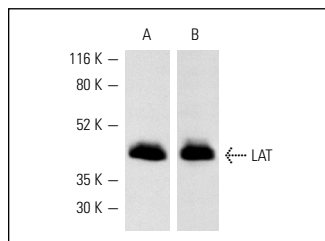
Molecular Weight of LAT: 36-38 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HuT 78 whole cell lysate: sc-2208 or mouse thymus extract: sc-2406.

STORAGE

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

DATA



Western blot analysis of LAT expression in BYDP whole cell lysates (A, B). Antibodies tested include LAT (M-19): sc-5320 (A) and LAT (Q-20): sc-7548 (B).

SELECT PRODUCT CITATIONS

- Shim, J.H., et al. 2002. Immunosuppressive effects of Tautomycin *in vivo* and *in vitro* via T cell-specific apoptosis induction. *Proc. Natl. Acad. Sci. USA* 99: 10617-10622.
- Gorska, M.M., et al. 2004. UNC119, a novel activator of Lck/Fyn, is essential for T cell activation. *J. Exp. Med.* 199: 369-379.
- Januchowski, R., et al. 2007. Trichostatin A down-regulates ZAP-70, LAT and SLP-76 content in Jurkat T cells. *Int. Immunopharmacol.* 7: 198-204.
- Baba, Y., et al. 2008. Essential function for the calcium sensor Stim1 in mast cell activation and anaphylactic responses. *Nat. Immunol.* 9: 81-88.
- Januchowski, R., et al. 2008. Prevalence of ZAP-70, LAT, SLP-76, and DNA methyltransferase 1 expression in CD4⁺ T cells of patients with systemic lupus erythematosus. *Clin. Rheumatol.* 27: 21-27.

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.

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Try **LAT (11B.12): sc-53550** or **LAT (B-3): sc-373706**, our highly recommended monoclonal alternatives to LAT (Q-20).