

LAT (m): 293T Lysate: sc-127084

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 NFAT 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

1. Weiss, A., et al. 1991. Signal transduction by the T cell antigen receptor. *Semin. Immunol.* 3: 313-324.
2. 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.
3. Zhang, W., et al. 1998. LAT: the ZAP-70 tyrosine kinase substrate that links T cell receptor to cellular activation. *Cell* 92: 83-92.
4. Cantrell, D. 1998. The real LAT steps forward. *Trends Cell Biol.* 8: 180-182.
5. 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.
6. 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.
7. 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.
8. Matsuda, S., et al. 2004. Negative feedback loop in T cell activation through MAPK-catalyzed threonine phosphorylation of LAT. *EMBO J.* 23: 2577-2585.
9. 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.

CHROMOSOMAL LOCATION

Genetic locus: Lat (mouse) mapping to 7 F3.

PRODUCT

LAT (m): 293T Lysate represents a lysate of mouse LAT transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

LAT (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive LAT antibodies. Recommended use: 10-20 μ l per lane.

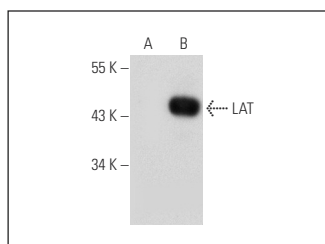
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

LAT (11B.12): sc-53550 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse LAT expression in LAT transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

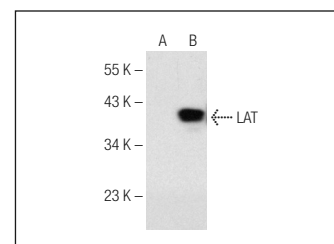
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



LAT (11B.12): sc-53550. Western blot analysis of LAT expression in non-transfected: sc-117752 (A) and mouse LAT transfected: sc-127084 (B) 293T whole cell lysates.



LAT (B-3): sc-373706. Western blot analysis of LAT expression in non-transfected: sc-117752 (A) and mouse LAT transfected: sc-127084 (B) 293T whole cell lysates.

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.