SANTA CRUZ BIOTECHNOLOGY, INC.

LAT (M-19): sc-5320

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 PLCγ 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 PLCγ1, 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.

CHROMOSOMAL LOCATION

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

SOURCE

LAT (M-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of LAT of mouse origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-5320 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

LAT (M-19) 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 µg per 100-500 µg 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.

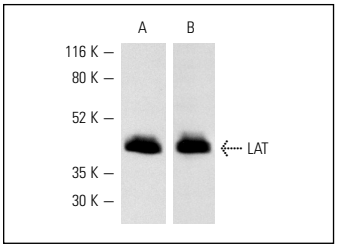
Molecular Weight of LAT: 36-38 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, LAT (m): 293T Lysate: sc-127084 or BYDP whole cell lysate: sc-364368.

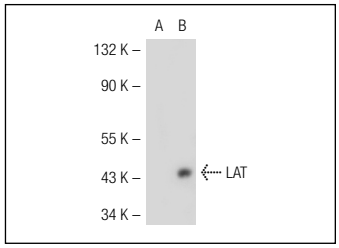
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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**).



LAT (M-19): sc-5320. Western blot analysis of LAT expression in non-transfected: sc-117752 (**A**) and mouse LAT transfected: sc-127084 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Carpino, N., et al. 2004. Regulation of ZAP-70 activation and TCR signaling by two related proteins, Sts-1 and Sts-2. Immunity 20: 37-46.
2. Su, Y.W., et al. 2004. The molecular requirements for LAT-mediated differentiation and the role of LAT in limiting pre-B cell expansion. Eur. J. Immunol. 34: 3614-3622.
3. Lee, J.S., et al. 2009. Recruitment of Sprouty1 to immune synapse regulates T cell receptor signaling. J. Immunol. 183: 7178-7186.
4. Tsagaratou, A., et al. 2010. Thymocyte-specific truncation of the deubiquitinating domain of CYLD impairs positive selection in a NFκB essential modulator-dependent manner. J. Immunol. 185: 2032-2043.
5. Klossowicz, M., et al. 2013. Assessment of caspase mediated degradation of linker for activation of T cells (LAT) at a single cell level. J. Immunol. Methods 389: 9-17.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.