SANTA CRUZ BIOTECHNOLOGY, INC.

p-LAT (Tyr 175): sc-31665

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

LAT (linker of activation of T cells), is an integral membrane protein which links the proximal and distal portions of the TCR signaling pathway. LAT is a transmembrane protein that becomes rapidly tyrosine-phosphorylated after TCR engagement. Phosphorylation of LAT creates binding sites for the Src homology 2 (SH2) domains of other proteins, including PLC-γ1, GRB2, Gads, Grap, 3BP2 and Shb, and indirectly binds SOS, c-Cbl, Vav, SLP-76 and Itk. T cell-receptor-mediated LAT phosphorylation is critical for the membrane recruitment of signalling complexes required for T cell activation. Tyr 191 and Tyr 171 phosphorylation are required for T cell activation. Tyr 171 and Tyr 191 phosphorylation is also necessary for GRB2 and Gads binding, and are necessary and sufficient to achieve a Ca^{2+} flux following TCR stimulation.

REFERENCES

1. Wange, R.L., et al. 2000. LAT, the linker for activation of T cells: a bridge between T cell-specific and general signaling pathways. Sci. STKE 63: RE1.
2. Zhang, W., et al. 2000. Association of GRB2, Gads and phospholipase C-γ1 with phosphorylated LAT tyrosine residues. Effect of LAT tyrosine mutations on T cell angigen receptor-mediated signaling. J. Biol. Chem. 275: 23355-23361.
3. Paz, P.E., et al. 2001. Mapping the ZAP-70 phosphorylation sites on LAT (linker for activation of T cells) required for recruitment and activation of signalling proteins in T cells. Biochem. J. 356: 461-471.
4. Lin, J., et al. 2001. Identification of the minimal tyrosine residues required for linker for activation of T cell function. J. Biol. Chem. 276: 29588-29595.
5. Zhu, M., et al. 2003. Minimal requirement of tyrosine residues of linker for activation of T cells in TCR signaling and thymocyte development. J. Biol. Chem. 170: 325-333.

CHROMOSOMAL LOCATION

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

SOURCE

p-LAT (Tyr 175) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Tyr 175 phosphorylated 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-31665 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

p-LAT (Tyr 175) is recommended for detection of Tyr 175 phosphorylated LAT of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

p-LAT (Tyr 175) is also recommended for detection of correspondingly phosphorylated LAT in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for LAT siRNA (m): sc-35796, LAT shRNA Plasmid (m): sc-35796-SH and LAT shRNA (m) Lentiviral Particles: sc-35796-V.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

PROTOCOLS

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