

Phospho-LAT (Tyr255) Antibody



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Applications: W, IP	Reactivity: H M	Sensitivity: Endogenous	MW (kDa): 40	Source/Isotype: Rabbit	UniProt ID: #O43561	Entrez-Gene Id: 27040
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Product Usage Information

Application

Western Blotting
Immunoprecipitation

Dilution

1:1000
1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Phospho-LAT (Tyr255) Antibody recognizes endogenous levels of LAT protein only when phosphorylated at Tyr255. Tyr255 of LAT, long isoform corresponds to Tyr226 of LAT, short isoform.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Tyr255 of human LAT protein, isoform 1. Antibodies are purified by protein A and peptide affinity chromatography.

Background

LAT, a transmembrane adaptor protein expressed in T, NK, and mast cells, is an important mediator for T cell receptor (TCR) signaling (1). Upon TCR engagement, activated Zap-70 phosphorylates LAT at multiple conserved tyrosine residues within SH2 binding motifs, exposing these motifs as the docking sites for downstream signaling targets (2,3). The phosphorylation of LAT at Tyr171 and Tyr220 enables the binding of Grb2, Gads/SLP-76, PLCγ1, and PI3 kinase through their SH2 domain and translocates them to the membrane. This process eventually leads to activation of the corresponding signaling pathways (1-4).

Research studies have shown that LAT is also phosphorylated at Tyr225 by ZAP-70 and Syk following activation of the TCR, which facilitates its binding to Grb2 and Vav and subsequent downstream activation of ERK (5-7).

Background References

1. Wonerow, P. and Watson, S.P. (2001) *Oncogene* 20, 6273-83.
2. Zhang, W. et al. (1998) *Cell* 92, 83-92.
3. Paz, P. E. et al. (2001) *Biochem. J.* 356, 461-71.
4. Zhang, W. et al. (2000) *J. Biol. Chem.* 275, 23355-61.
5. Zhang, W. et al. (2000) *J Biol Chem* 275, 23355-61.
6. Paz, P.E. et al. (2001) *Biochem J* 356, 461-71.
7. Lin, J. and Weiss, A. (2001) *J Biol Chem* 276, 29588-95.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween@ 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human **M:** Mouse

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