

Phospho-SLP-76 (Ser376) Antibody



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Applications: W	Reactivity: H M	Sensitivity: Endogenous	MW (kDa): 76	Source/Isotype: Rabbit	UniProt ID: #Q13094	Entrez-Gene Id: 3937
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Product Usage Information

Application

Western Blotting

Dilution

1:1000

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-SLP-76 (Ser376) Antibody recognizes endogenous levels of SLP-76 protein only when phosphorylated at Ser376. This antibody cross-reacts with a 145 kDa protein of unknown origin.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser376 of human SLP-76 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

SH2 domain-containing leukocyte protein of 76 kDa (SLP-76) is a hematopoietic adaptor protein that is important in multiple biochemical signaling pathways and necessary for T cell development and activation (1). ZAP-70 phosphorylates SLP-76 and LAT as a result of TCR ligation. SLP-76 has amino-terminal tyrosine residues followed by a proline-rich domain and a carboxy-terminal SH2 domain. Phosphorylation of Tyr113 and Tyr128 result in recruitment of the GEF Vav and the adaptor protein Nck (2). TCR ligation also leads to phosphorylation of Tyr145, which mediates an association between SLP-76 and Itk, which is accomplished in part via the proline-rich domain of SLP-76 and the SH3 domain of Itk (3). Furthermore, the proline-rich domain of SLP-76 binds to the SH3 domains of Grb2-like adaptor Gads (3,4). In resting cells, SLP-76 is predominantly in the cytosol. Upon TCR ligation, SLP-76 translocates to the plasma membrane and promotes the assembly of a multi-protein signaling complex that includes Vav, Nck, Itk, and PLCγ1 (1). The expression of SLP-76 is tightly regulated; the protein is detected at very early stages of thymocyte development, increases as thymocyte maturation progresses, and is reduced as cells mature to CD4⁺ CD8⁺ double-positive thymocytes (5).

Following TCR ligation, SLP-76 is phosphorylated at Ser376 by the hematopoietic progenitor kinase 1 (HPK1) (6,7). This phosphorylation induces interaction with 14-3-3ε, which leads to the disassembly of TCR signaling complexes and down regulation of TCR signaling (6-8).

Background References

1. Clements, J.L. (2003) *Immunol Rev* 191, 211-9.
2. Bubeck Wardenburg, J. et al. (1998) *Immunity* 9, 607-16.
3. Bunnell, S.C. et al. (2000) *J Biol Chem* 275, 2219-30.
4. Liu, S.K. et al. (1999) *Curr Biol* 9, 67-75.
5. Clements, J.L. et al. (1998) *J Immunol* 161, 3880-9.
6. Shui, J.W. et al. (2007) *Nat Immunol* 8, 84-91.
7. Di Bartolo, V. et al. (2007) *J Exp Med* 204, 681-91.
8. Lasserre, R. et al. (2011) *J Cell Biol* 195, 839-53.

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

Cross-Reactivity Key

H: Human **M:** Mouse

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