

# p-ZAP-70 (Tyr 319): sc-101822

## BACKGROUND

The activation of T lymphocytes by antigens is mediated by the T cell receptor (TCR), which is a multisubunit complex assembled from at least six different genes. The TCR subunits include the T $\alpha$  and T $\beta$  chains, the CD3  $\gamma$ ,  $\delta$  and  $\epsilon$  chains and a  $\zeta$ -containing homodimer or heterodimer. The protein tyrosine kinase ZAP-70 binds to the phosphorylated immunoreceptor tyrosine-base activation motifs (ITAMs) of the TCR  $\zeta$  chain through two Src-homology (SH2) domains. This binding results in the phosphorylation of ZAP-70 on multiple tyrosine residues, including Tyr 292 and Tyr 319. ZAP-70 is autophosphorylated on Tyr 292, which is thought to negatively regulate ZAP-70 function in lymphocytes. Alternatively, ZAP-70 is positively regulated by phosphorylation on Tyr 319, which mediates the SH2-dependent interaction between Lck and ZAP-70.

## REFERENCES

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3. Watts, J.D., et al. 1994. Identification by electrospray ionization mass spectrometry of the site of tyrosine phosphorylation induced in activated Jurkat T cells on the protein tyrosine kinase ZAP-70. *J. Biol. Chem.* 269: 29520-29529.
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5. Magistrelli, G., et al. 1999. Role of the Src homology 2 domains and interdomain regions in ZAP-70 phosphorylation and enzymatic activity. *Eur. J. Biochem.* 266: 1166-1173.
6. Di Bartolo, V., et al. 1999. Tyrosine 319, a newly identified phosphorylation site of ZAP-70, plays a critical role in T cell antigen receptor signaling. *J. Biol. Chem.* 274: 6285-6294.
7. Pelosi, M., et al. 1999. Tyrosine 319 in the interdomain B of ZAP-70 is a binding site for the Src homology 2 domain of Lck. *J. Biol. Chem.* 274: 14229-14237.
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## CHROMOSOMAL LOCATION

Genetic locus: ZAP70 (human) mapping to 2q11.2; Zap70 (mouse) mapping to 1 B.

## SOURCE

p-ZAP-70 (Tyr 319) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Tyr 319 phosphorylated ZAP-70 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

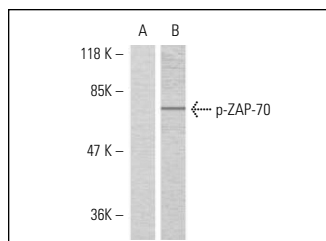
p-ZAP-70 (Tyr 319) is recommended for detection of Tyr 319 phosphorylated ZAP-70 of human origin and correspondingly phosphorylated Tyr 318 of mouse origin and correspondingly phosphorylated Tyr 314 rat origin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)]; also recommended for detection of Tyr 352 phosphorylated Syk of human origin and correspondingly phosphorylated Tyr 346 of mouse and rat origin.

Suitable for use as control antibody for ZAP-70 siRNA (h): sc-29526, ZAP-70 siRNA (m): sc-36867, ZAP-70 shRNA Plasmid (h): sc-29526-SH, ZAP-70 shRNA Plasmid (m): sc-36867-SH, ZAP-70 shRNA (h) Lentiviral Particles: sc-29526-V and ZAP-70 shRNA (m) Lentiviral Particles: sc-36867-V.

Molecular Weight of p-ZAP-70: 70 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204 or Jurkat + pervanadate cell lysate: sc-24716.

## DATA



Western blot analysis of phosphorylated ZAP-70 expression in Jurkat whole cell lysates. Antibodies tested include p-ZAP-70 (Tyr 319): sc-101822 pre-incubated with cognate phosphorylated peptide (A) and p-ZAP-70 (Tyr 319): sc-101822 (B).

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.


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Try **p-ZAP-70 (pY319.17A): sc-136248**, our highly recommended monoclonal alternative to p-ZAP-70 (Tyr 319).