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# ZAP70 Antibody (Center Y292) Blocking peptide

**Synthetic peptide**
**Catalog # BP12903c**

## Specification

### ZAP70 Antibody (Center Y292) Blocking peptide - Product Information

Primary Accession P43403

### ZAP70 Antibody (Center Y292) Blocking peptide - Additional Information

**Gene ID** 7535

**Other Names**
Tyrosine-protein kinase ZAP-70, 70 kDa zeta-chain associated protein, Syk-related tyrosine kinase, ZAP70, SRK

**Format**
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

**Storage**
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

**Precautions**
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

### ZAP70 Antibody (Center Y292) Blocking peptide - Protein Information

**Name** ZAP70

**Synonyms** SRK

**Function**
Tyrosine kinase that plays an essential role in regulation of the adaptive immune response. Regulates motility, adhesion and cytokine expression of mature T-cells, as well as thymocyte development. Contributes also to the development and activation of primary B- lymphocytes. When antigen presenting cells (APC) activate T-cell receptor (TCR), a serie of phosphorylations lead to the recruitment of ZAP70 to the doubly phosphorylated TCR component CD247/CD3Z through ITAM motif at the plasma membrane. This recruitment serves to localization to the stimulated TCR and to relieve its autoinhibited conformation. Release of ZAP70 active conformation is further stabilized by phosphorylation mediated by LCK. Subsequently, ZAP70 phosphorylates at least 2 essential adapter proteins: LAT and LCP2. In turn, a large number of signaling molecules are recruited and ultimately lead to lymphokine production, T-cell proliferation and differentiation. Furthermore, ZAP70 controls cytoskeleton modifications, adhesion and mobility of T-lymphocytes, thus ensuring correct delivery of effectors to the APC. ZAP70 is also required for TCR-CD247/CD3Z internalization and degradation through interaction with the E3 ubiquitin-protein ligase CBL and adapter proteins SLA and SLA2. Thus, ZAP70 regulates both T-cell activation switch on and switch off by modulating TCR expression at the T-cell surface. During

thymocyte development, ZAP70 promotes survival and cell-cycle progression of developing thymocytes before positive selection (when cells are still CD4/CD8 double negative). Additionally, ZAP70-dependent signaling pathway may also contribute to primary B-cells formation and activation through B-cell receptor (BCR).

**Cellular Location**
Cytoplasm. Cell membrane; Peripheral membrane protein. Note=In quiescent T-lymphocytes, it is cytoplasmic. Upon TCR activation, it is recruited at the plasma membrane by interacting with CD247/CD3Z. Colocalizes together with RHOH in the immunological synapse. RHOH is required for its proper localization to the cell membrane and cytoskeleton fractions in the thymocytes (By similarity).

**Tissue Location**
Expressed in T- and natural killer cells. Also present in early thymocytes and pro/pre B-cells

## ZAP70 Antibody (Center Y292) Blocking peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides

## ZAP70 Antibody (Center Y292) Blocking peptide - Images

## ZAP70 Antibody (Center Y292) Blocking peptide - Background

This gene encodes an enzyme belonging to the proteintyrosine kinase family, and it plays a role in T-cell developmentand lymphocyte activation. This enzyme, which is phosphorylated ontyrosine residues upon T-cell antigen receptor (TCR) stimulation,functions in the initial step of TCR-mediated signal transductionin combination with the Src family kinases, Lck and Fyn. Thisenzyme is also essential for thymocyte development. Mutations inthis gene cause selective T-cell defect, a severe combinedimmunodeficiency disease characterized by a selective absence ofCD8-positive T-cells. Two transcript variants that encode differentisoforms have been found for this gene.

## ZAP70 Antibody (Center Y292) Blocking peptide - References

Zanotti, R., et al. Am. J. Hematol. 85(7):494-498(2010)Lin, Y.P., et al. Mol. Immunol. 47 (11-12), 2022-2029 (2010) :Liu, H., et al. Proc. Natl. Acad. Sci. U.S.A. 107(22):10166-10171(2010)Kotaskova, J., et al. J Mol Diagn 12(3):328-334(2010)Trojani, A., et al. Cancer Biomark 6(1):1-9(2010)