

ZAP70 (Chronic Lymphocytic Leukemia Marker) Antibody - With BSA and Azide
Mouse Monoclonal Antibody [Clone SPM362]
Catalog # AH12539

Specification

ZAP70 (Chronic Lymphocytic Leukemia Marker) Antibody - With BSA and Azide - Product Information

Application	,2,3,4,
Primary Accession	P43403
Other Accession	7535 , 234569
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Isotype	Mouse / IgG2a, kappa
Calculated MW	70kDa KDa

ZAP70 (Chronic Lymphocytic Leukemia Marker) Antibody - With BSA and Azide - Additional Information

Gene ID 7535

Other Names

Tyrosine-protein kinase ZAP-70, 2.7.10.2, 70 kDa zeta-chain associated protein, Syk-related tyrosine kinase, ZAP70, SRK

Storage

Store at 2 to 8°C. Antibody is stable for 24 months.

Precautions

ZAP70 (Chronic Lymphocytic Leukemia Marker) Antibody - With BSA and Azide is for research use only and not for use in diagnostic or therapeutic procedures.

ZAP70 (Chronic Lymphocytic Leukemia Marker) Antibody - With BSA and Azide - 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

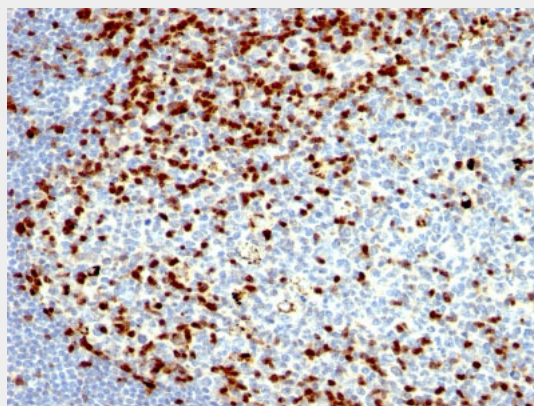
Expressed in T- and natural killer cells. Also present in early thymocytes and pro/pre B-cells

ZAP70 (Chronic Lymphocytic Leukemia Marker) Antibody - With BSA and Azide - Protocols

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

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

ZAP70 (Chronic Lymphocytic Leukemia Marker) Antibody - With BSA and Azide - Images



Formalin-fixed, paraffin-embedded human Tonsil stained with ZAP70 Monoclonal Antibody (SPM362).

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Background

ZAP70 is a 70kDa protein tyrosine kinase found in T-cells and natural killer cells. Control of this protein translation is via the IgVH gene. In Western blotting of whole cell lysates of normal peripheral blood mononuclear cells, the antibody labels a band corresponding to ZAP70. In Western blotting of whole cell lysates of CD19-positive purified leukemia cells from patients with Ig-unmutated and Ig-mutated CLL, the antibody labels a band corresponding to ZAP70 in the Ig-unmutated CLL samples, whereas no band is observed in the Ig-mutated CLL samples. In Western blotting of cell lysates of Jurkat cells (T-lymphoblastic cell line), the antibody labels a band of 70kDa protein. In Western blotting of cell lysates of A431 cells (carcinoma cell line), no band is observed. ZAP70 protein is expressed in leukemic cells of approximately 25% of chronic lymphocytic leukemia (CLL) cases as well. Anti-ZAP70 expression is an excellent surrogate marker for the distinction between the Ig-mutated (anti-ZAP70 negative) and Ig-unmutated (anti-ZAP70 positive) CLL subtypes and can identify patient groups with divergent clinical courses. The anti-ZAP70 positive Ig-unmutated CLL cases have been shown to have a poorer prognosis.

ZAP70 (Chronic Lymphocytic Leukemia Marker) Antibody - With BSA and Azide - References

Iwashima M, Irving BA, van Oers NSC, Chan AC, Weiss A. Sequential interactions of the TCR with two distinct cytoplasmic tyrosine kinases. Science 1994;263:1136-9. |