abcam

ab278571

APC Anti-Syk (phospho Y352) + ZAP70 (phospho Y319) antibody [Zap70Y319-A3]

Recombinant

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	APC
Excitation/Emission	Ex: 650nm, Em: 660nm
Storage buffer	Preservative: 0.09% Sodium azide Constituents: PBS, 0.2% BSA
Form	Liquid
Clonality	Monoclonal
Immunogens	Synthetic Peptide within Human ZAP70 pY319. The exact immunogen used to generate this antibody is proprietary information. Database link P43403
Clone number	Zap70Y319-A3
Purification technique	Affinity purification Protein A/G
Light chain type	kappa

Reactivity data

Flow Cyt

Tested

Species	Human

Dilution info	5 µL for 10^6 Cells
Notes	-

Target data

See full target information ZAP70 pY319

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. Also contributes 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 phosphorylated TCR components CD3E and CD247/CD3Z through ITAM motif at the plasma membrane (PubMed:7509083). 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).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Store in the dark

Notes

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Syk (spleen tyrosine kinase) and ZAP70 (zeta-chain-associated protein kinase 70) are non-receptor tyrosine kinases. Syk has a molecular mass of approximately 72 kDa while ZAP70 is around 70 kDa. They are expressed in hematopoietic tissues. Syk is found in B-cells and other myeloid lineages and ZAP70 is mainly located in T-cells and natural killer (NK) cells. These kinases play essential roles in signal transduction by phosphorylating proteins on tyrosine residues transmitting activation signals from receptors on the cell surface to the interior of the cell.
Biological function summary	Syk and ZAP70 play vital roles in the adaptive immune response. Syk is an essential mediator of B-cell receptor (BCR) signaling and assembles into a signaling complex with other proteins. ZAP70 functions similarly in T-cells becoming activated upon the engagement of the T-cell receptor (TCR). Both kinases help recruit and activate adaptor proteins and downstream signaling molecules that drive cellular responses including proliferation differentiation and survival.
Pathways	Both kinases are integral to the B-cell and T-cell receptor signaling pathways. Syk activates several pathways including the MAP kinase and NF-kB pathways through its interaction with proteins like BLNK and PLCγ2. ZAP70 initiates the TCR signaling cascade interfacing with LAT and SLP-76 to activate the same pathways. These pathways trigger transcriptional programs necessary for immune cell functions and development.
Associated diseases and disorders	Syk and ZAP70 have connections to various immune-related conditions. Abnormal Syk activity relates to autoimmune diseases like rheumatoid arthritis where B-cell signaling plays a role. Syk interacts with proteins such as ITAM-containing immunoreceptors in these disorders. ZAP70 mutations are linked to immunodeficiency syndromes leading to dysfunctional T-cell signaling. These kinases make viable targets for therapeutic intervention bringing hope for better management of such immune diseases.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

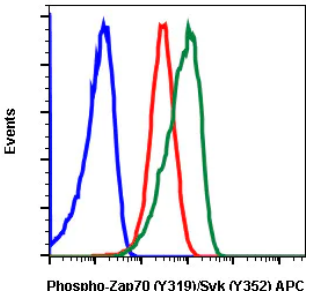
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

1 product image



Flow Cytometry - APC Anti-Syk (phospho Y352) + ZAP70 (phospho Y319) antibody [Zap70Y319-A3] (ab278571)

Syk (phospho Y352) + ZAP70 (phospho Y319) Flow Cytometry staining using rabbit Anti-Syk (phospho Y352) + ZAP70 (phospho Y319) antibody

Flow cytometric analysis of Jurkat cells unstained untreated cells as negative control (blue) or stained and untreated (red) or stained and treated with pervanadate (green) using ab278571.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.