abcam

ab264260

Anti-ZAP70 (phospho Y319) antibody

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7 - 8 Preservative: 0.09% Sodium azide Constituents: Tris citrate/phosphate
Form	Liquid
Clonality	Polyclonal
Immunogen	Synthetic Peptide within Human ZAP70 pY319. The exact immunogen used to generate this antibody is proprietary information. Database link P43403
Purification technique	Affinity purification Immunogen
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	2-5 µg/mL
Notes	-

Predicted

Species	Mouse

Dilution info	-
Notes	-

Flow Cyt

Expected

Species	Human
Dilution info	1 µg for 10^5 Cells
Notes	in 150 µL volume

Predicted

Species	Mouse
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	in 150 µL volume

Predicted

Species	Mouse
Dilution info	-
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 duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

This antibody has not performed satisfactorily when used for WB of phospho ZAP70 in crude preparations (e.g. whole cell lysate). This antibody can be used for WB of enriched (e.g. immunoprecipitated) sources of ZAP70.

Supplementary info

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

Activity summary	ZAP70 also known as Zeta-chain-associated protein kinase 70 is a tyrosine kinase that plays an important role in T-cell receptor signaling. The protein has a

	molecular mass of approximately 70 kDa. ZAP70 is mainly expressed in T cells and natural killer (NK) cells. It gets activated upon T-cell receptor engagement initiating downstream signaling cascades essential for T-cell function and adaptive immune response.
Biological function summary	ZAP70 is instrumental in the signaling cascade that activates T cells in response to antigen recognition. It forms part of a larger signaling complex following the engagement of the T-cell receptor with antigens. This complex transmits critical activation signals leading to further cellular responses such as cytokine production and cell proliferation. ZAP70's function ensures appropriate immune responses and helps maintain immune system balance.
Pathways	ZAP70 plays an integral role in T-cell receptor signaling pathways. This protein interacts with other signaling molecules like Lck and LAT facilitating the transmission of activation signals within the cell. As part of the T-cell activation pathway ZAP70 helps to bridge receptor-ligand interactions with cellular responses enabling the immune cells to combat infections effectively.
Associated diseases and disorders	ZAP70 mutations or dysregulations can lead to severe immunodeficiencies or autoimmune diseases. For example ZAP70 deficiency results in severe combined immunodeficiency (SCID) which severely impairs immune function. Additionally aberrant ZAP70 activity has links to certain autoimmune disorders like rheumatoid arthritis where it influences abnormal immune signaling. Understanding the biochemical pathways that involve ZAP70 provides insight into managing these diseases and developing therapeutic strategies.

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

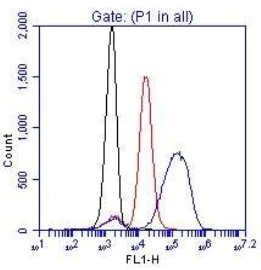
We do not recommend this combination. It is not covered by our product promise.

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.

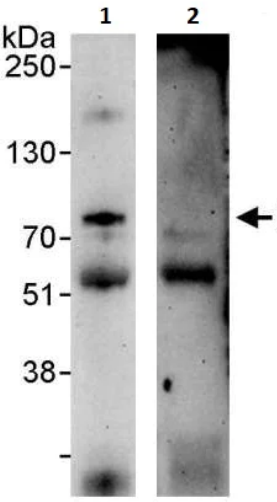
2 product images



Flow Cytometry (Intracellular) - Anti-ZAP70 (phospho Y319) antibody (ab264260)

ZAP70 (phospho Y319) Flow Cytometry (Intracellular) staining using rabbit Anti-ZAP70 (phospho Y319) antibody

1.5% PFA-fixed, 90% methonol permeabilized Jurkat (human T cell leukemia cell line from peripheral blood) (treated with hydrogen peroxide for 3 minutes) cells labeling ZAP70 (phospho Y319) with ab264260 at 1 µg / 10^6 cells in 150 µL (blue) compared to an isotype anti-KLH control in hydrogen peroxide-treated cells (black) and ab264260 in untreated cells (red).



Immunoprecipitation - Anti-ZAP70 (phospho Y319) antibody (ab264260)

ZAP70 (phospho Y319) was immunoprecipitated from Jurkat (human T cell leukemia cell line from peripheral blood) (treated with hydrogen peroxide)whole cell lysate (1.0 mg per IP reaction; 20% of IP loaded) using ab264260 at 3 µg/mg lysate. Western blot was performed on the immunoprecipitates using an anti-ZAP70 antibody ab245411 at 1 µg/ml.
Lane 1: ab264260 IP in Jurkat (treated) whole cell lysate.

Lane 2: Control IgG IP in Jurkat (treated) whole cell lysate.

Exposure time: 3 minutes.

All lanes:
Immunoprecipitation - Anti-ZAP70 (phospho Y319) antibody (ab264260)

Predicted band size: 17 kDa, 69 kDa

Observed band size: 17 kDa

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