abcam

ab247483

Anti-ZAP70 (phospho Y292) antibody [EPR1073] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR1073
Purification technique	Affinity purification
Concentration	0.987 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	-

Notes	-

Not recommended

Species	Synthetic peptide
Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Synthetic peptide
Dilution info	-
Notes	-

Dot

Tested

Species	Synthetic peptide
Dilution info	-
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Synthetic peptide
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Synthetic peptide
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Synthetic peptide
Dilution info	-
Notes	-

Target data

See full target information ZAP70 pY292

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	Do Not Freeze

Notes

ab247483 is the carrier-free version of ab76501.

Species reactivity

Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

Patented technology

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

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.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide

and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

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.

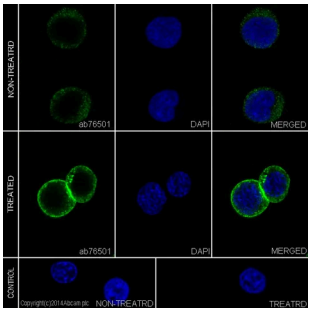
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

---

4 product images

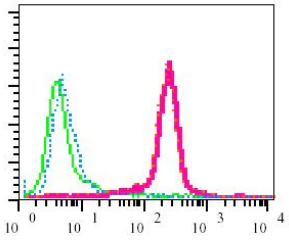


Immunocytochemistry/ Immunofluorescence - Anti-ZAP70 (phospho Y292) antibody [EPR1073] - BSA and Azide free (ab247483)

ZAP70 (phospho Y292) Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-ZAP70 (phospho Y292) antibody

This data was developed using ab76501, the same antibody clone in a different buffer formulation. Immunocytochemistry/Immunofluorescence analysis of untreated and pervanadate treated Jurkat (human acute T cell leukemia) cells labelling ZAP70 (phospho Y292) with ab76501 at a dilution of 1/250. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. Treated samples were starved overnight followed by incubation with 1mM pervanadate for 30 minutes. ab150077, an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000) was used as the secondary antibody. DAPI (blue) was used as the nuclear counterstain. Negative control using secondary antibody only.

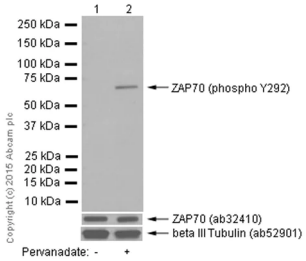
Image shows increased cytoplasmic staining after pervanadate treatment.



Flow Cytometry (Intracellular) - Anti-ZAP70 (phospho Y292) antibody [EPR1073] - BSA and Azide free (ab247483)

ZAP70 (phospho Y292) Flow Cytometry (Intracellular) staining using rabbit Anti-ZAP70 (phospho Y292) antibody

This data was developed using ab76501, the same antibody clone in a different buffer formulation. Intracellular flow cytometric analysis of permeabilized Jurkat cells, untreated (green), pervanadate treated (red) stained with ab76501, at 1/20 dilution (blue) and pervanadate-treated Jurkat cells using the same antibody preincubated with phospho- ZAP70 (Tyr 292) peptide (blue) or non-phospho- ZAP70 (Tyr 292)).



Western blot - Anti-ZAP70 (phospho Y292) antibody [EPR1073] - BSA and Azide free (ab247483)

This data was developed using ab76501, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-ZAP70 (phospho Y292) antibody [EPR1073] (ab76501) at 1/5000 dilution

Lane 1:
Untreated Jurkat (human acute T cell leukemia) whole cell lysates at 10 µg

Lane 2:
Jurkat (human acute T cell leukemia) treated with pervanadate whole cell lysates at 10 µg

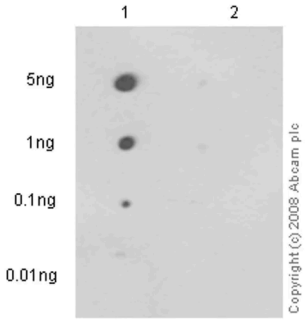
Secondary

All lanes:
Peroxidase-conjugated goat anti-rabbit IgG, (H+L) at 1/1000 dilution

Predicted band size: 69 kDa

Observed band size: 70 kDa

Exposure time: 3min



Dot Blot - Anti-ZAP70 (phospho Y292) antibody [EPR1073] - BSA and Azide free (ab247483)

ZAP70 (phospho Y292) Dot Blot staining using rabbit Anti-ZAP70 (phospho Y292) antibody

This data was developed using ab76501, the same antibody clone in a different buffer formulation. Dot blot analysis of varying amounts of ZAP70 (pY292) phospho peptide (Lane 1) and ZAP70 non-phospho peptide (Lane 2) using ab76501 at a dilution of 1/1000. A peroxidase-conjugated goat anti-rabbit IgG (H+L) was used as the secondary antibody (1/2500).

Exposure time: 3 minutes.

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