abcam

ab217708

Anti-Syk (phospho Y323) antibody [EP573-4] - Low endotoxin, 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	EP573-4
Purification technique	Affinity purification Protein A
Concentration	0.992 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

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	1/2000 - 1/5000
Notes	-

Not recommended

Species	Synthetic peptide
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Synthetic peptide
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG (Low endotoxin, Azide free), is suitable for use as an isotype control with this antibody.

Not recommended

Species	Synthetic peptide
Dilution info	-
Notes	-

Target data

See full target information SYK pY323

Function	Non-receptor tyrosine kinase which mediates signal transduction downstream of a variety of transmembrane receptors including classical immunoreceptors like the B-cell receptor (BCR). Regulates several biological processes including innate and adaptive immunity, cell adhesion, osteoclast maturation, platelet activation and vascular development (PubMed:12387735, PubMed:33782605). Assembles into signaling complexes with activated receptors at the plasma membrane via interaction between its SH2 domains and the receptor tyrosine-phosphorylated ITAM domains. The association with the receptor can also be indirect and mediated by adapter proteins containing ITAM or partial hemITAM domains. The phosphorylation of the ITAM domains is generally mediated by SRC subfamily kinases upon engagement of the receptor. More rarely signal transduction via SYK could be ITAM-independent. Direct downstream effectors phosphorylated by SYK include DEPTOR, VAV1, PLCG1, PI-3-kinase, LCP2 and BLNK (PubMed:12456653, PubMed:15388330, PubMed:34634301, PubMed:8657103). Initially identified as essential in B-cell receptor (BCR) signaling, it is necessary for the maturation of B-cells most probably at the pro-B to pre-B transition (PubMed:12456653). Activated upon BCR engagement, it phosphorylates and activates BLNK an adapter linking the activated BCR to downstream signaling adapters and effectors. It also phosphorylates and activates PLCG1 and the PKC signaling pathway. It also phosphorylates BTK and regulates its activity in B-cell antigen receptor (BCR)-coupled signaling. In addition to its function downstream of BCR also plays a role in T-cell receptor signaling. Also plays a crucial role in the innate immune response to fungal, bacterial and viral pathogens. It is for instance activated by the membrane lectin CLEC7A. Upon stimulation by fungal proteins, CLEC7A together with SYK activates immune cells inducing the production of ROS. Also activates the inflammasome and NF-kappa-B-mediated transcription of chemokines and cytokines in presence of pathogens. Regulates neutrophil degranulation and phagocytosis through activation of the MAPK signaling cascade (By similarity). Required for the stimulation of neutrophil phagocytosis by IL15 (PubMed:15123770). Also mediates the activation of dendritic cells by cell necrosis stimuli. Also involved in mast cells activation. Involved in interleukin-3/IL3-mediated signaling pathway in basophils (By similarity). Also functions downstream of receptors mediating cell adhesion (PubMed:12387735). Relays for instance, integrin-mediated neutrophils and macrophages activation and P-selectin receptor/SELPG-mediated recruitment of leukocytes to inflammatory loci. Also plays a role in non-immune processes. It is for instance involved in vascular development where it may regulate blood and lymphatic vascular separation. It is also required for osteoclast development and function. Functions in the activation of platelets by collagen, mediating PLCG2 phosphorylation and activation. May be coupled to the collagen receptor by the ITAM domain-containing FCER1G. Also activated by the membrane lectin CLEC1B that is required for activation of platelets by PDPN/podoplanin. Involved in platelet adhesion being activated by ITGB3 engaged by fibrinogen. Together with CEACAM20, enhances production of the cytokine CXCL8/IL-8 via the NFKB pathway and may thus have a role in the intestinal immune response (By similarity).

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

ab217708 is the carrier-free version of ab62338.

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.

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.

What does low endotoxin mean?
Our low endotoxin, azide-free formats have low endotoxin level (1 EU/mg, determined by the TAL assay) and are free from azide, to achieve consistent experimental results in functional assays.

Supplementary info

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

Activity summary	Spleen tyrosine kinase commonly known as Syk is a non-receptor tyrosine kinase with a mass of about 72 kDa. It serves as a critical signaling molecule in immune cells. Syk is expressed in various cell types such as B cells T cells monocytes and others involved in the immune response. It initiates signaling cascades by binding to immunoreceptor tyrosine-based activation motifs (ITAMs). Alternate forms include phosphorylated Syk often referred to as p-Syk which activates various downstream signaling pathways.
Biological function summary	Syk plays a role in transmitting signals from the cell surface to the interior of the cell facilitating various cellular activities. It is a part of signal transduction complexes and functions in the regulation of immune cell activation differentiation and survival. It affects processes like Fc receptor signaling in macrophages and neutrophils impacting immune responses and inflammation. The phospho-Syk form influences the strength and duration of signaling affecting various cellular functions.

Pathways

	Syk is significant in the B-cell receptor (BCR) signaling pathway and Fc receptor signaling pathway. Within these pathways Syk interacts with proteins like Lyn and Fyn which are other kinases involved in BCR signal transduction. Syk phosphorylation noted as p-Syk plays a part in activating downstream molecules such as phospholipase C gamma (PLCγ) to mediate cellular responses to external stimuli. The critical role of Syk in these pathways influences both adaptive and innate immune responses.
Associated diseases and disorders	Syk correlates with conditions like rheumatoid arthritis and certain B-cell lymphomas. In rheumatoid arthritis aberrant Syk signaling contributes to the inflammation and joint destruction characteristic of the disease. Syk's role in B-cell antigen receptor signaling links it to B-cell lymphomas where dysregulation in signaling pathways leads to uncontrolled proliferation of malignant B cells. The involvement of Syk in both disease contexts suggests its potential as a therapeutic target along with pathways related to proteins like BLNK and PLCγ in these disorders.

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

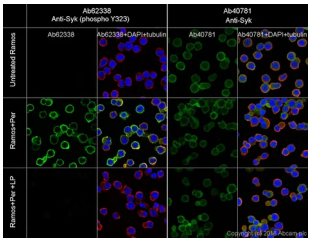
We do not recommend this combination. It is not covered by our product promise.

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.

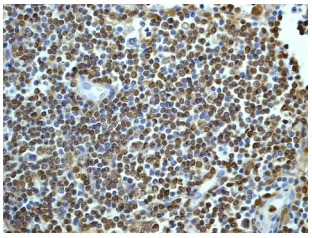
6 product images



Immunocytochemistry/ Immunofluorescence - Anti-Syk (phospho Y323) antibody [EP573-4] - Low endotoxin, Azide free (ab217708)

Syk (phospho Y323) Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Syk (phospho Y323) antibody

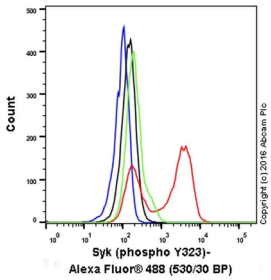
Immunocytochemistry/Immunofluorescence analysis of Ramos+/-pervanadate(1mM, 30min), Ramos + pervanadate(1mM, 30min) + LP labelling Syk (phospho Y323) with ab62338 at a dilution of 1:1000 dilution (2.53ug/ml). Cells were fixed with 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. ab150077 Goat anti rabbit IgG(Alexa Fluor® 488) (1:1000) was used as the secondary antibody. The cells were co-stained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1:200 (2.5 µg/ml). Nuclei counterstained with DAPI (blue). Control: PBS instead of the primary antibody.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab62338).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Syk (phospho Y323) antibody [EP573-4] - Low endotoxin, Azide free (ab217708)

Syk (phospho Y323) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Syk (phospho Y323) antibody

This data was developed using the same antibody clone in a different buffer formulation (ab62338).
Immunohistochemical analysis of paraffin-embedded human lymph node tissue sections labeling Syk with purified ab62338 at 1/100 dilution. ImmunoHistoProbe one step HRP Polymer (ready to use) was used as the secondary antibody. Sections were counterstained with Hematoxylin. Antigen retrieval was heat mediated antigen retrieval using citrate buffer, pH 6.0).

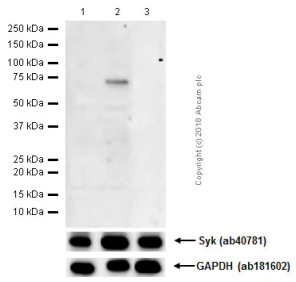


Flow Cytometry (Intracellular) - Anti-Syk (phospho Y323) antibody [EP573-4] - Low endotoxin, Azide free (ab217708)

Syk (phospho Y323) Flow Cytometry (Intracellular) staining using rabbit Anti-Syk (phospho Y323) antibody

This Flow cyt data was generated using the same anti-phospho Syk Y323 antibody clone, EP573-4, in a different buffer formulation (cat
ab62338).

Intracellular Flow Cytometry analysis of U937 (human monocyte histiocytic lymphoma) treated (red)/untreated (green) with 1mM pervanadate for 30 minutes with purified ab62338 at 1/2500 dilution. The secondary antibody was Goat anti rabbit IgG (Alexa Fluor®488) at 1/2000 dilution. A Rabbit monoclonal IgG (Black) was used as the isotype control and cells without incubation with primary antibody and secondary antibody (Blue) were used as unlabeled control.



Western blot - Anti-Syk (phospho Y323) antibody [EP573-4] - Low endotoxin, Azide free (ab217708)

Syk (phospho Y323) Western blot staining using rabbit Anti-Syk (phospho Y323) antibody

This data was developed using ab62338, the same antibody clone in a different buffer formulation. Blocking and diluting buffer and concentration: 5% NFDM/TBST.

All lanes:
Western blot - Anti-Syk (phospho Y323) antibody [EP573-4] (ab62338) at 1/5000 dilution

Lane 1:
Ramos (human Burkitt's lymphoma B lymphocyte) whole cell lysate at 10 µg

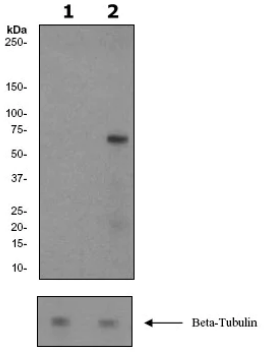
Lane 2:
Ramos treated with 1mM pervanadate for 30min whole cell lysate at 10 µg

Lane 3:
Ramos treated with 1mM pervanadate for 30min whole cell lysate. Then the membrane was incubated with alkaline phosphatase at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 72 kDa



Western blot - Anti-Syk (phospho Y323) antibody [EP573-4] - Low endotoxin, Azide free (ab217708)

Syk (phospho Y323) Western blot staining using rabbit Anti-Syk (phospho Y323) antibody

This data was developed using ab62338, the same antibody clone in a different buffer formulation. Beta tubulin shows equal lysate loading amount per lane.

All lanes:
Western blot - Anti-Syk (phospho Y323) antibody [EP573-4] (ab62338) at 1/2000 dilution

Lane 1:
untreated U937 cell lysates at 10 µg

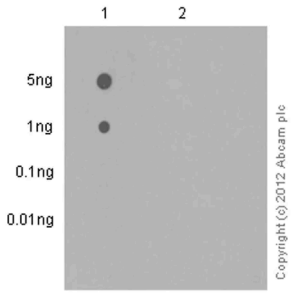
Lane 2:
U937 cell lysates treated with pervanadate at 10 µg

Secondary

All lanes:
goat anti-rabbit, HRP labeled, at 1/2000 dilution

Predicted band size: 72 kDa

Observed band size: 72 kDa



Dot Blot - Anti-Syk (phospho Y323) antibody [EP573-4] - Low endotoxin, Azide free (ab217708)

Dot blot analysis of Sky (pY323) peptide (Lane 1), Syk (unmodified) peptide (Lane 2), labelling Syk (pY323) with ab62338 at a dilution of 1/1000. Peroxidase conjugated goat anti-rabbit IgG (H+L) was used as the secondary antibody at a dilution of 1/2500.
Blocking and dilution buffer: 5% NFDM/TBST.

Exposure time: 10 seconds.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab62338).

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