abcam

ab284709

Anti-LAT (phospho Y200) antibody [EP983(2)Y] - 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	EP983(2)Y
Purification technique	Affinity purification Protein A
Specificity	The antibody only detects LAT phosphorylated on Tyrosine 200 of long isoform and Tyrosine 171 of short isoform.
Concentration	1.02 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Human
Dilution info	-
Notes	-

Flow Cyt

Not recommended

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information LAT pY200

Function

Required for TCR (T-cell antigen receptor)- and pre-TCR-mediated signaling, both in mature T-cells and during their development (PubMed:23514740, PubMed:25907557). Involved in FCGR3 (low affinity immunoglobulin gamma Fc region receptor III)-mediated signaling in natural killer cells and FCER1 (high affinity immunoglobulin epsilon receptor)-mediated signaling in mast cells. Couples activation of these receptors and their associated kinases with distal intracellular events such as mobilization of intracellular calcium stores, PKC activation, MAPK activation or cytoskeletal reorganization through the recruitment of PLCG1, GRB2, GRAP2, and other signaling molecules.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

Notes

ab284709 is the carrier-free version of ab68139.
This product has switched from a hybridoma to recombinant production method on 31st May 2023.

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.

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.

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	LAT or Linker for Activation of T cells also known as LAT protein is a transmembrane adaptor protein with an approximate molecular mass of 36-38 kDa. This protein is expressed predominantly on T cells and other cells of the lymphoid lineage. LAT is localized to the plasma membrane and contains multiple tyrosine residues which are critical for its function in signal transduction. Its phosphorylation leads to binding of various signaling molecules enabling signal propagation.
Biological function summary	LAT plays an important role in the immune response by facilitating the assembly of signaling complexes important for T cell activation. Upon antigen stimulation LAT becomes phosphorylated mainly at tyrosine residues allowing proteins like Grb2 and PLCγ1 to form a functional signalosome complex. This complex formation is necessary for downstream signaling events that contribute to T cell proliferation differentiation and cytokine production thereby maintaining immune homeostasis and facilitating adaptive immune responses.
Pathways	LAT operates primarily within the T cell receptor (TCR) signaling pathway. The phosphorylation of LAT by ZAP-70 another important signaling protein enables its role as a scaffold bringing together other molecules for signal transduction. It is closely related to proteins like SLP-76 and GADS both of which are essential for the full activation of T cells. These interactions link LAT to broader signaling cascades such as the MAPK and calcium signaling pathways which are essential for mounting an immune response.
Associated diseases and disorders	LAT dysfunction is linked to both autoimmune diseases and immunodeficiencies. Defective LAT expression or function can lead to conditions like severe combined immunodeficiency (SCID) due to impaired T cell signaling. Additionally abnormal LAT activity may contribute to autoimmune disorders like systemic lupus erythematosus (SLE) where an overactive immune response is present. Proteins such as LAT can interact with others involved in these conditions including PLCγ1 highlighting its central role in both healthy and diseased states of immune regulation.

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

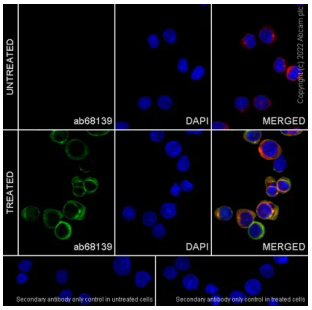
We do not recommend this combination. It is not covered by our product promise.

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.

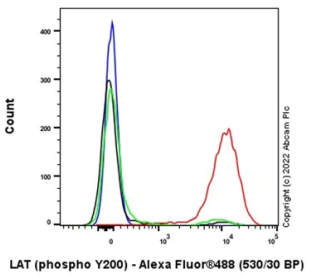
Full details and terms and conditions can be found here:
Terms & Conditions.

3 product images



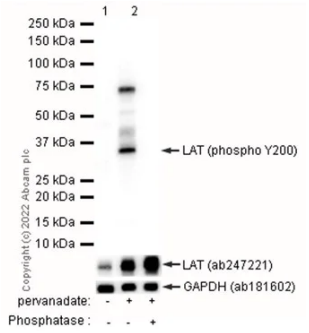
Immunocytochemistry/ Immunofluorescence - Anti-LAT (phospho Y200) antibody [EP983(2)Y] - BSA and Azide free (ab284709)

This data was developed using ab68139 the same antibody clone in a different buffer formulation. Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized Jurkat cells labelling LAT with ab68139 at 1/250 dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (Green). Confocal image showing no staining in Jurkat cells and positive staining in Jurkat cells treated with pervanadate 1mM for 30 mins. ab195889 AlexaFluor® 594-conjugated Anti-alpha Tubulin was used to counterstain tubulin at 1/200 dilution (Red). The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-LAT (phospho Y200) antibody [EP983(2)Y] - BSA and Azide free (ab284709)

This data was developed using ab68139 the same antibody clone in a different buffer formulation. Flow cytometric analysis of 4% paraformaldehyde fixed bLA permeabilized Jurkat cells labelling LAT with ab68139 at 1:2000 dilution (Red) compared with an isotype control (Black) and an unlabelled control (Cell without incubation with primary antibody and secondary antibody (Blue)). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) was used as the secondary antibody.



Western blot - Anti-LAT (phospho Y200) antibody [EP983(2)Y] - BSA and Azide free (ab284709)

This data was developed using ab68139 the same antibody clone in a different buffer formulation.
Blocking and diluting buffer and concentration: 5% NFDM/TBST.
All lanes:
Western blot - Anti-LAT (phospho Y200) antibody [EP983(2)Y] (ab68139) at 1/10000 dilution

Lane 1:
Jurkat (Human T cell leukemia T lymphocyte) whole cell lysate

Lane 2:
Jurkat treated with 1mM pervanadate for 30 min whole cell lysate

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 1 kDa

Exposure time: 7s

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