abcam

ab247221

Anti-LAT antibody [Y109] - 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	Y109
Purification technique	Affinity purification Protein A
Specificity	This antibody is specific for LAT. It detects the long and short forms of LAT.
Concentration	1.007 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-

Notes	-

ICC/IF

Not recommended

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information LAT

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
Storage information	Do Not Freeze

Notes

ab247221 is the carrier-free version of ab32070.

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	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

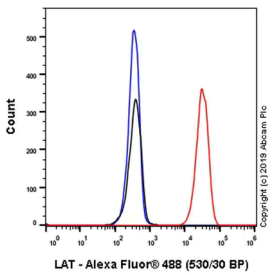
We do not recommend this combination. It is not covered by our product promise.

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.

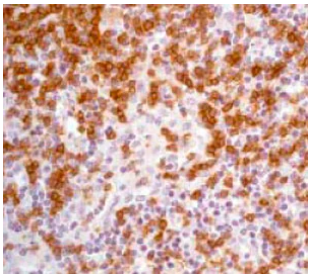
3 product images



Flow Cytometry (Intracellular) - Anti-LAT antibody [Y109] - BSA and Azide free (ab247221)

LAT Flow Cytometry (Intracellular) staining using rabbit Anti-LAT antibody

This data was developed using ab32070, the same antibody clone in a different buffer formulation. Flow Cytometry analysis of Jurkat (Human T cell leukemia T lymphocyte) cells labeling LAT with purified ab32070 at 1/100 dilution (10 µg/mL) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cells without incubation with primary antibody and secondary antibody (Blue).

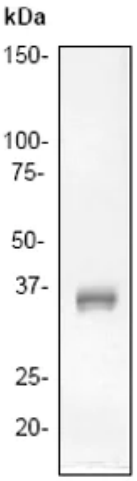


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LAT antibody [Y109] - BSA and Azide free (ab247221)

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

This data was developed using ab32070, the same antibody clone in a different buffer formulation. ab32070, at a dilution of 1/100, staining LAT in paraffin embedded human lymph node tissue by Immunohistochemistry.

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Western blot - Anti-LAT antibody [Y109] - BSA and Azide free (ab247221)

LAT Western blot staining of Jurkat (Human T cell leukemia cell line from peripheral blood) whole cell lysate using rabbit Anti-LAT antibody

This data was developed using ab32070, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-LAT antibody [Y109] (ab32070) at 1/500 dilution

All lanes:
Jurkat (Human T cell leukemia cell line from peripheral blood) whole cell lysate

Predicted band size: 28 kDa

Observed band size: 35 kDa

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