abcam

ab278722

Anti-Lck (phospho Y505) antibody [LckY505-A3]

Recombinant | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Preservative: 0.02% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine), 0.1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Synthetic Peptide within Human LCK pY505. The exact immunogen used to generate this antibody is proprietary information. Database link P06239
Clone number	LckY505-A3
Purification technique	Affinity purification Protein A/G
Light chain type	kappa
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	0.001-1 µg/mL

Notes	-

WB

Tested

Species	Human
Dilution info	0.001-1 µg/mL
Notes	-

Target data

See full target information LCK pY505

Function

Non-receptor tyrosine-protein kinase that plays an essential role in the selection and maturation of developing T-cells in the thymus and in the function of mature T-cells (PubMed:2470098). Plays a key role in T-cell antigen receptor (TCR)-linked signal transduction pathways (PubMed:2470098). Constitutively associated with the cytoplasmic portions of the CD4 and CD8 surface receptors (PubMed:2470098). Association of the TCR with a peptide antigen-bound MHC complex facilitates the interaction of CD4 and CD8 with MHC class II and class I molecules, respectively, thereby recruiting the associated LCK protein to the vicinity of the TCR-CD3 complex (PubMed:2470098). LCK then phosphorylates tyrosine residues within the immunoreceptor tyrosine-based activation motifs (ITAM) of the cytoplasmic tails of the TCR-gamma chains and CD3 subunits, initiating the TCR-CD3 signaling pathway (PubMed:2470098, PubMed:40592325). Once stimulated, the TCR recruits the tyrosine kinase ZAP70, that becomes phosphorylated and activated by LCK. Following this, a large number of signaling molecules are recruited, ultimately leading to lymphokine production. LCK also contributes to signaling by other receptor molecules. Associates directly with the cytoplasmic tail of CD2, which leads to hyperphosphorylation and activation of LCK. Also plays a role in the IL2 receptor-linked signaling pathway that controls the T-cell proliferative response. Binding of IL2 to its receptor results in increased activity of LCK. Is expressed at all stages of thymocyte development and is required for the regulation of maturation events that are governed by both pre-TCR and mature alpha beta TCR. Phosphorylates other substrates including RUNX3, PTK2B/PYK2, the microtubule-associated protein MAPT, RHOH or TYROBP. Interacts with FYB2 (PubMed:27335501).

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	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

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	Lck also known as lymphocyte-specific protein tyrosine kinase plays an important role in T-cell activation. It serves as an enzyme and is integral in the signal transduction of the immune system. Lck has a molecular weight of approximately 56 kDa. It is expressed predominantly in T lymphocytes and is part of the Src family kinases. This protein is important in phosphorylating substrates leading to downstream signaling events that are necessary for the proper immune function.
Biological function summary	Lck initiates and propagates T-cell receptor (TCR) signaling cascades. It interacts with the CD4 and CD8 co-receptors and triggers the activation of other kinases within the cell. Lck as part of a signaling complex associates with proteins such as ZAP-70 and LAT facilitating the assembly of larger molecular machines necessary for immune responses. Its activity is tightly regulated by phosphorylation with key sites being tyrosine 394 and 505.
Pathways	The Lck protein plays an essential role in TCR signaling and immune responses. It actively participates in the Lck signaling pathway setting off cascades that lead to T-cell activation and differentiation. It interacts closely with other proteins like Fyn and Src making sure that the pathway progresses correctly. In conjunction with the immune synapse Lck ensures the transmission of signals that allow the T-cells to respond to external antigens efficiently.
Associated diseases and disorders	Defective Lck activity can contribute to immunodeficiencies and autoimmune diseases. Proper Lck function is linked to conditions like Severe Combined Immunodeficiency (SCID) and lupus. Dysregulation in Lck activity may also affect

proteins such as ZAP-70 worsening disease progression. Understanding Lck's participation in these conditions can lead to better therapeutic interventions and aid in developing targeted treatments for immune-related 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

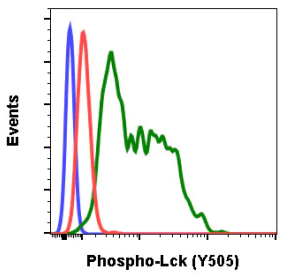
We do not recommend this combination. It is not covered by our product promise.

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.

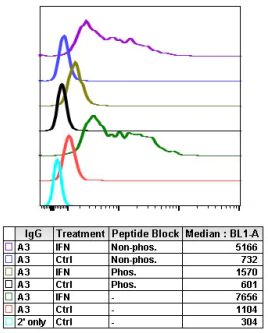
4 product images



Flow Cytometry - Anti-Lck (phospho Y505) antibody [LckY505-A3] (ab278722)

Lck (phospho Y505) Flow Cytometry staining using rabbit Anti-Lck (phospho Y505) antibody

Flow cytometric analysis of Daudi cells secondary antibody only negative control (blue) or untreated (red) or treated with IFNa + IL-4 + pervanadate (green) using ab278722 at 1 µg/mL.

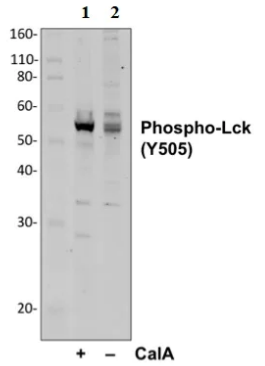


IgG	Treatment	Peptide Block	Median : BL1-A
A3	IFN	Non-phos.	5166
A3	Ctrl	Non-phos.	732
A3	IFN	Phos.	1570
A3	Ctrl	Phos.	601
A3	IFN	-	7656
A3	Ctrl	-	1104
2° only	Ctrl	-	304

Flow Cytometry - Anti-Lck (phospho Y505) antibody [LckY505-A3] (ab278722)

Lck (phospho Y505) Flow Cytometry staining using rabbit Anti-Lck (phospho Y505) antibody

Peptide blocking flow cytometric analysis of Daudi cells secondary antibody only negative control (light blue) or untreated (red) or treated with IFNa + IL-4 + pervanadate (green) or untreated and blocked with phospho-peptide (black) or treated and blocked with phospho peptide (gold) or untreated and blocked with non-phospho peptide (dark blue) or treated and blocked with non-phospho peptide (purple) using ab278722 at 1 µg/mL.

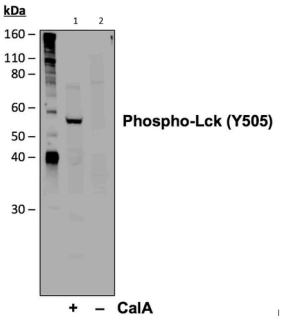


Western blot - Anti-Lck (phospho Y505) antibody [LckY505-A3] (ab278722)

All lanes:
Western blot - Anti-Lck (phospho Y505) antibody [LckY505-A3] (ab278722) at 0.1 µg/mL

All lanes:
Jurkat cell extract treated with calyculin A

Predicted band size: 58 kDa



Western blot - Anti-Lck (phospho Y505) antibody [LckY505-A3] (ab278722)

All lanes:
Western blot - Anti-Lck (phospho Y505) antibody [LckY505-A3] (ab278722) at 0.1 µg/mL

Lane 1:
Jurkat cell extract treated with 200nM calyculin A

Lane 2:
Jurkat cell extract untreated with 200nM calyculin A

Predicted band size: 58 kDa

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