


## Product datasheet

# Anti-Lck (phospho Y504) antibody ab4901

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### Overview

<b>Product name</b>	Anti-Lck (phospho Y504) antibody
<b>Description</b>	Rabbit polyclonal to Lck (phospho Y504)
<b>Host species</b>	Rabbit
<b>Specificity</b>	Hck [pY522] (75% homology), and Lyn [pY508] (83.3% homology) have not been tested.
<b>Tested applications</b>	<b>Suitable for:</b> WB
<b>Species reactivity</b>	<b>Reacts with:</b> Recombinant fragment <b>Predicted to work with:</b> Mouse, Chicken 
<b>Immunogen</b>	Synthetic peptide corresponding to Human Lck (phospho Y504). The sequence is conserved in human and mouse. Amino acid number is based on the mature sequence without the initiator methionine. Database link: <a href="#">P06239</a> (Peptide available as <a href="#">ab5217</a> )
<b>Positive control</b>	Full length untagged recombinant human Lck protein.
<b>General notes</b>	<p>Lck (p56lck), a member of the Src family of non-receptor tyrosine protein kinases, is expressed predominantly in T cells. Lck function is critical both for T cell development in the thymus and activation of mature T cells in the periphery by antigen. The activity of Lck is regulated by phosphorylation of two conserved tyrosine residues, Tyr-505 (equivalent to Tyr-529 in c-Src) and Tyr-394 (equivalent to Tyr-418 in c-Src). Tyr-505 is located near the carboxyl terminus of Lck and, when phosphorylated, associates intramolecularly with the SH2 domain in the amino-terminal half of the protein. This helps stabilise Lck in a conformation that, biologically, is relatively inactive. In the absence of phosphorylation at Tyr-505, intramolecular binding of the carboxyl terminus to the SH2 domain does not occur, and Lck exhibits increased activity in vivo.</p> <p>The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.</p> <p>If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&amp;As</p>

### Properties

## Properties

<b>Form</b>	Liquid
<b>Storage instructions</b>	Shipped at 4°C. Upon delivery aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw cycles.
<b>Storage buffer</b>	pH: 7.3 Preservative: 0.05% Sodium azide Constituents: PBS, 0.1% BSA  BSA is IgG and protease free
<b>Purity</b>	Immunogen affinity purified
<b>Purification notes</b>	Purified from rabbit serum by sequential epitope-specific chromatography. The antibody has been negatively preadsorbed using (i) a non-phosphopeptide corresponding to the site of phosphorylation to remove antibody that is reactive with non-phosphorylated Lck, and (ii) a generic tyrosine phosphorylated peptide to remove antibody that is reactive with phospho-tyrosine (irrespective of the sequence). The final product is generated by affinity chromatography using a Lck-derived peptide that is phosphorylated at tyrosine 505.
<b>Primary antibody notes</b>	Lck (p56lck), a member of the Src family of non-receptor tyrosine protein kinases, is expressed predominantly in T cells. Lck function is critical both for T cell development in the thymus and activation of mature T cells in the periphery by antigen. The activity of Lck is regulated by phosphorylation of two conserved tyrosine residues, Tyr-505 (equivalent to Tyr-529 in c-Src) and Tyr-394 (equivalent to Tyr-418 in c-Src). Tyr-505 is located near the carboxyl terminus of Lck and, when phosphorylated, associates intramolecularly with the SH2 domain in the amino-terminal half of the protein. This helps stabilise Lck in a conformation that, biologically, is relatively inactive. In the absence of phosphorylation at Tyr-505, intramolecular binding of the carboxyl terminus to the SH2 domain does not occur, and Lck exhibits increased activity in vivo.
<b>Clonality</b>	Polyclonal
<b>Isotype</b>	IgG

## Applications

**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab4901 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB		Use a concentration of 0.1 - 1 µg/ml. Predicted molecular weight: 60 kDa.

## Target

**Function** Tyrosine kinase that plays an essential role for the selection and maturation of developing T-cell in the thymus and in mature T-cell function. Is constitutively associated with the cytoplasmic portions of the CD4 and CD8 surface receptors and plays a key role in T-cell antigen receptor(TCR)-linked signal transduction pathways. 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, and thereby recruits the associated LCK to the vicinity of the TCR/CD3 complex. LCK then phosphorylates tyrosines residues within the immunoreceptor tyrosines-based

activation motifs (ITAMs) in the cytoplasmic tails of the TCRgamma chains and CD3 subunits, initiating the TCR/CD3 signaling pathway. In addition, contributes to signaling by other receptor molecules. Associates directly with the cytoplasmic tail of CD2, and upon engagement of the CD2 molecule, LCK undergoes hyperphosphorylation and activation. Also plays a role in the IL2 receptor-linked signaling pathway that controls 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 RUNX3.

**Tissue specificity**

Expressed specifically in lymphoid cells.

**Involvement in disease**

Note=A chromosomal aberration involving LCK is found in leukemias. Translocation t(1;7) (p34;q34) with TCRB.

**Sequence similarities**

Belongs to the protein kinase superfamily. Tyr protein kinase family. SRC subfamily. Contains 1 protein kinase domain. Contains 1 SH2 domain. Contains 1 SH3 domain.

**Domain**

The SH2 domain mediates interaction with SQSTM1. Interaction is regulated by Ser-59 phosphorylation.

**Post-translational modifications**

Phosphorylated on Tyr-394, which increases enzymatic activity (By similarity). Phosphorylated on Tyr-505, which decreases activity.

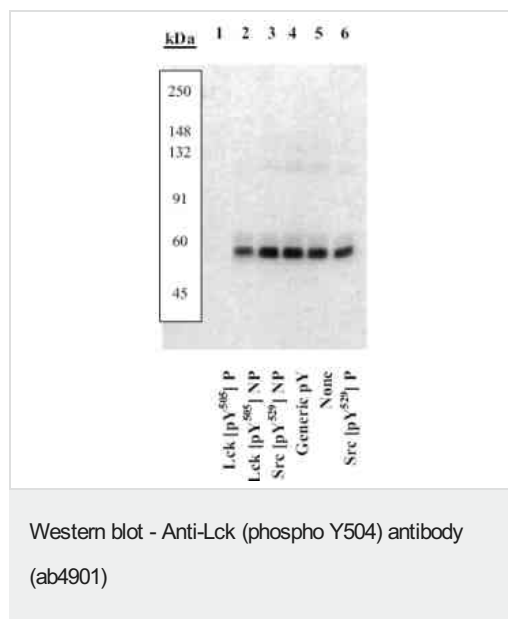
**Cellular localization**

Cytoplasm. Cell membrane. Present in lipid rafts in an unactive form.

**Form**

This protein is known to be similar in amino acid sequence to HCK (P08631), FYN (P06241), YES1 (P07947), SRC (P12931), and LYN (P07948). Therefore, cross-reactivity with these homologous proteins may be observed. We would be happy to provide immunogen alignment information upon request.

**Images**



Peptide Competition: Full length untagged recombinant human Lck protein was added to control cell extract which does not contain Lck and then resolved by SDS-PAGE on a 10% Tris-glycine gel. The proteins then were transferred to nitrocellulose and incubated with 0.50 µg/mL ab4901 antibody, following prior incubation with: (1) the appropriately phosphorylated peptide immunogen, (2) the nonphosphorylated peptide corresponding to the peptide immunogen, (3) the non-phosphorylated peptide derived from the corresponding region of Src, (4) a generic phosphotyrosine containing peptide, (5) no peptide, and (6) the phosphorylated peptide derived from the corresponding region of Src. After washing, membranes were incubated with goat F(ab')<sub>2</sub> anti-rabbit IgG alkaline phosphatase conjugate and bands were detected using the Tropix WesternStar detection method. The data presented here demonstrate that only the phosphopeptide corresponding to this site completely blocks t

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