

## Datasheet for ABIN3093559 LCK Protein (AA 2-509) (His tag)



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#### Overview

Quantity:	1 mg
Target:	LCK
Protein Characteristics:	AA 2-509
Origin:	Human
Source:	Insect Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This LCK protein is labelled with His tag.
Application:	ELISA, Western Blotting (WB), SDS-PAGE (SDS), Crystallization (Crys)

#### Product Details

Sequence: GCGCSSHPED DWMENIDVCE NCHYPIVPLD GKGTLIRNG SEVRDPLVTY EGSNPPASPL  
QDNLVIALHS YEPSHDGDLG FEKGEQLRIL EQSGEWWKAQ SLTTGQEGFI PFNFVAKANS  
LEPEPWFFKN LSRKDAERQL LAPGNTHGSF LIRESESTAG SFSLSVRDFD QNQGEVVKHY  
KIRNLDNGGF YISPRITFPG LHELVRHYTN ASDGLCTRLS RPCQTQKPQK PWWEDEWEVP  
RETLKLVERL GAGQFGEVWM GYYNGHTKVA VKSLKQGSMS PDAFLAEANL MKQLQHQLRV  
RLYAVVTQEP IYIITEYMEN GSLVDFLKTP SGIKLTINKL LDMAAQIAEG MAFIEERNYI  
HRDLRAANIL VSDTLSCKIA DFGLARLIED NEYTAREGAK FPIKWTAPEA INYGTFTIKS  
DVWSFGILLT EIVTHGRIPY PGMTNPEVIQ NLERGYRMVR PDNCPEELYQ LMRLCWKERP  
EDRPTFDYLR SVLEDDFFAT EGQYQPQP

**Sequence without tag. Tag location is at the discretion of the manufacturer. If you have a special request, please contact us.**

## Product Details

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- Characteristics:
- Made in Germany - from design to production - by highly experienced protein experts.
  - Human LCK Protein (raised in Insect Cells) purified by multi-step, protein-specific process to ensure crystallization grade.
  - State-of-the-art algorithm used for plasmid design (Gene synthesis).

This protein is a made to order protein and will be made for the first time for your order. Our experts in the lab will ensure that you receive a correctly folded protein.

The big advantage of ordering our made-to-order proteins in comparison to ordering custom made proteins from other companies is that there is no financial obligation in case the protein cannot be expressed or purified.

In the unlikely event that the protein cannot be expressed or purified we do not charge anything (other companies might charge you for any performed steps in the expression process for custom-made proteins, e.g. fees might apply for the expression plasmid, the first expression experiments or purification optimization).

When you order this made-to-order protein you will only pay upon receipt of the correctly folded protein. With no financial risk on your end you can rest assured that our experienced protein experts will do everything to make sure that you receive the protein you ordered.

The concentration of our recombinant proteins is measured using the absorbance at 280nm.

The protein's absorbance will be measured in several dilutions and is measured against its specific reference buffer.

The concentration of the protein is calculated using its specific absorption coefficient. We use the Expasy's protparam tool to determine the absorption coefficient of each protein.

- Purification:
- Two step purification of proteins expressed in baculovirus infected SF9 insect cells:
1. In a first purification step, the protein is purified from the cleared cell lysate using three different His-tag capture materials: high yield, EDTA resistant, or DTT resistant. Eluate fractions are analyzed by SDS-PAGE.
  2. Protein containing fractions of the best purification are subjected to second purification step through size exclusion chromatography. Eluate fractions are analyzed by SDS-PAGE and Western blot.

Purity: >95 % as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot.

Sterility: 0.22 µm filtered

Endotoxin Level: Protein is endotoxin free.

Grade: Crystallography grade

## Target Details

Target:	LCK
Alternative Name:	LCK ( <a href="#">LCK Products</a> )
Background:	<p>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. Plays a key role in T-cell antigen receptor (TCR)-linked signal transduction pathways. Constitutively associated with the cytoplasmic portions of the CD4 and CD8 surface receptors. 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. LCK then phosphorylates tyrosines 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. 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. {ECO:0000269 PubMed:16339550, ECO:0000269 PubMed:16709819, ECO:0000269 PubMed:20028775, ECO:0000269 PubMed:20100835, ECO:0000269 PubMed:20851766, ECO:0000269 PubMed:21269457, ECO:0000269 PubMed:22080863}.</p>
Molecular Weight:	58.8 kDa Including tag.
UniProt:	<a href="#">P06239</a>
Pathways:	<a href="#">TCR Signaling</a> , <a href="#">Fc-epsilon Receptor Signaling Pathway</a> , <a href="#">EGFR Signaling Pathway</a> , <a href="#">Neurotrophin Signaling Pathway</a> , <a href="#">Transition Metal Ion Homeostasis</a> , <a href="#">Positive Regulation of Endopeptidase Activity</a> , <a href="#">CXCR4-mediated Signaling Events</a> , <a href="#">Thromboxane A2 Receptor Signaling</a>

## Application Details

Application Notes:	In addition to the applications listed above we expect the protein to work for functional studies as well. As the protein has not been tested for functional studies yet we cannot offer a guarantee
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## Application Details

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Comment:	In cases in which it is highly likely that the recombinant protein with the default tag will be insoluble our protein lab may suggest a higher molecular weight tag (e.g. GST-tag) instead to increase solubility. We will discuss all possible options with you in detail to assure that you receive your protein of interest.
Restrictions:	For Research Use only

## Handling

Format:	Liquid
Buffer:	100 mM NaCL, 20 mM Hepes, 10% glycerol. pH value is at the discretion of the manufacturer.
Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	Unlimited (if stored properly)

## Images



**Image 1.** „Crystallography Grade“ protein due to multi-step, protein-specific purification process