

## Lck Protein, Human (sf9, GST)

<b>Cat. No.:</b>	HY-P73269
<b>Synonyms:</b>	Tyrosine-protein kinase Lck; LSK; LCK; Hck-3
<b>Species:</b>	Human
<b>Source:</b>	Sf9 insect cells
<b>Accession:</b>	P06239 (M1-P509)
<b>Gene ID:</b>	3932
<b>Molecular Weight:</b>	Approximately 80 kDa

### PROPERTIES

<b>Biological Activity</b>	Measured by its ability to catalyze the substrate Poly(Glu,Tyr) 4:1. The specific activity is >70 nmol/min/mg, as measured under the described conditions.
<b>Appearance</b>	Solution
<b>Formulation</b>	Supplied as a 0.2 µm filtered solution of 50 mM Tris, 100 mM NaCl, pH 8.0, 0.5 mM GSH, 0.1 mM EGTA, 0.1 mM EDTA, 0.5 mM PMSF, 10% glycerol
<b>Endotoxin Level</b>	<1 EU/µg, determined by LAL method.
<b>Reconstitution</b>	N/A
<b>Storage &amp; Stability</b>	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
<b>Shipping</b>	Shipping with dry ice

### DESCRIPTION

#### Background

Lck Protein, a non-receptor tyrosine-protein kinase, plays a crucial role in the selection and maturation of developing T-cells in the thymus and the function of mature T-cells. It is a key player in T-cell antigen receptor (TCR)-linked signal transduction pathways, constitutively associated with the cytoplasmic portions of CD4 and CD8 surface receptors. Upon TCR interaction with a peptide antigen-bound MHC complex, CD4 and CD8 associate with MHC class II and class I molecules, respectively, recruiting Lck to the vicinity of the TCR/CD3 complex. Lck then phosphorylates tyrosine residues within the immunoreceptor tyrosine-based activation motifs (ITAM) of the TCR-gamma chains and CD3 subunits, initiating the TCR/CD3 signaling pathway. Upon stimulation, the TCR recruits the tyrosine kinase ZAP70, leading to lymphokine production. Lck also contributes to signaling by other receptors, directly associating with the cytoplasmic tail of CD2, resulting in hyperphosphorylation and activation of Lck. Furthermore, Lck plays a role in the IL2 receptor-linked signaling pathway, and its increased activity follows IL2 binding to its receptor, influencing the T-cell proliferative response. Expressed at all stages of thymocyte development, Lck is essential for regulating maturation events governed by both pre-TCR and mature alpha beta TCR, and it phosphorylates various substrates, including RUNX3, PTK2B/PYK2, MAPT, RHOH, TYROBP, and interacts

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with FYB2.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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