

# Human Lck Kinase Protein (GST Tag)

Catalog Number: 10043-H09B



Sino Biological  
Biological Solution Specialist

## General Information

### Gene Name Synonym:

IMD22; LSK; p56lck; pp58lck; YT16

### Protein Construction:

A DNA sequence encoding the human LCK (NP\_001036236.1) (Met 1-Pro 509) was fused with the GST tag at the N-terminus.

Source: Human

Expression Host: Baculovirus-Insect Cells

## QC Testing

Purity: > 90 % as determined by SDS-PAGE

### Bio Activity:

The specific activity was determined to be 70 nmol/min/mg using Poly(Glu,Tyr) 4:1 as substrate.

### Endotoxin:

< 1.0 EU per  $\mu$ g of the protein as determined by the LAL method

### Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Met

### Molecular Mass:

The recombinant human LCK/GST chimera consists of 734 amino acids and predicts a molecular mass of 84.4 kDa. It migrates as an approximately 80 kDa band in SDS-PAGE under reducing conditions.

### Formulation:

Supplied as sterile 50mM Tris, 100mM NaCl, pH 8.0, 0.5mM GSH, 0.1mM EGTA, 0.1mM EDTA, 0.5mM PMSF, 10% glycerol

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

## Usage Guide

### Storage:

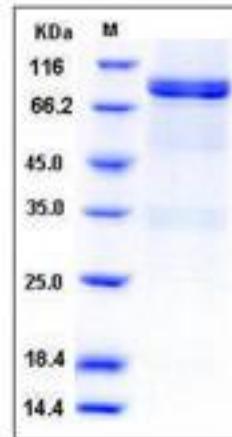
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

### Avoid repeated freeze-thaw cycles.

### Reconstitution:

Detailed reconstitution instructions are sent along with the products.

## SDS-PAGE:



## Protein Description

Protein kinases are critically involved in signaling pathways that regulate cell growth, differentiation, activation, and survival. Initially identified as a T-cell specific member of the Src family of protein tyrosine kinases, Lck has become the object of intensive investigations which have revealed a key role for this kinase in the central processes controlling T-cell development, activation, proliferation and survival. Lck is expressed specifically in lymphoid cells. It contains one protein kinase domain, one SH2 domain, and one SH3 domain. It is associated with a variety of cell surface receptors and is critical for signal transduction from the T-cell antigen receptor (TCR). Consequently, Lck is targeted by regulatory proteins of T-lymphotropic viruses, especially by the Herpesvirus saimiri (HVS) tyrosine kinase interacting protein (Tip). This oncoprotein physically interacts with Lck in HVS transformed T cells and has an impact on its catalytic activity. Together with the identification of defects in the regulation of Lck expression or activity in T-cell leukemias, suggests that dysregulation of Lck might play a role in neoplastic transformation. However, under certain conditions Lck is also involved in the induction of apoptosis. This chemosensitizing effect of Lck is independent of T-cell receptor signaling and does not require the kinase activity of Lck. The findings demonstrate that Lck might be part of two independent signaling pathways leading to either cell proliferation or apoptosis.

## References

1. Majolini MB, et al. (1999) Dysregulation of the protein tyrosine kinase LCK in lymphoproliferative disorders and in other neoplasias. *Leuk Lymphoma*. 35(3-4): 245-54.
2. Isakov N, et al. (2000) Lck protein tyrosine kinase is a key regulator of T-cell activation and a target for signal intervention by Herpesvirus saimiri and other viral gene products. *Eur J Biochem*. 267(12): 3413-21.
3. Heyninck K, et al. (2006) A novel link between Lck, Bak expression and chemosensitivity. *Oncogene*. 25(12): 1693-5.

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