

# Recombinant Human Tyrosine-protein kinase Lck(LCK)

Catalog No: #AP70491

Package Size: #AP70491-1 20ug #AP70491-2 100ug #AP70491-3 1mg

## Description

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name          | Recombinant Human Tyrosine-protein kinase Lck(LCK)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Host Species          | E.coli                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Purification          | Greater than 90% as determined by SDS-PAGE.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Immunogen Description | Expression Region:1-539aaSequence Info:Full Length of Isoform 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Other Names           | Leukocyte C-terminal Src kinase<br>Short name:LSK<br>Lymphocyte cell-specific protein-tyrosine kinase<br>Protein YT16<br>Proto-oncogene Lck<br>T cell-specific protein-tyrosine kinase<br>p56-LCK                                                                                                                                                                                                                                                                                                                                                                                |
| Accession No.         | P06239                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Calculated MW         | 65.2 kDa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Tag Info              | N-terminal 6xHis-tagged                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Target Sequence       | MGCGCSSHPEDDWMENIDVCENCHYPIVPLDGKGTLLIRNGSEVRDPLVTYEGSNPPASPLQDNLVIALHSYE<br>PSHDGDLGFEKGEQLRILEQSGEWWKAQSLTTGQEGFIPNFVAKANSLEPEPWFFKNLSRKDAERQLLAPG<br>NTHGSFLIRESESTAGSFSLSVRDFDQNGQGEVVKHYKIRNLDNNGFYISPRITFPGLHELVRHYTNASDGLCTR<br>LSRPCQTQKPQKPWWEDEWEVPRETLKLVERLGAGQFGEVWVGYYNGHTKVAVKSLKQGSMSPD AFLAEA<br>NLMKQLQHQLVRLYAVVTQEPIYIITEYMENDTLDSQLEEKGLGASPWGNLGGQLLLPTGSLVDFLKTPSG<br>IKLTINKLLDMAAQIAEGMAFIEERNYIHRDLRAANILVSDTLCKIADFGARLIEDNEYTAREGAKFPIKWTAP<br>AINYGTFTIKSDVWSFGILLTEIVTHGRIPYPGMTNPEVIQNLERGYRMVRPDCPEELYQLMRLCWKERPEDR<br>PTFDYLRVLEDDFFTATEGQYQPP |
| Formulation           | Tris-based buffer50% glycerol                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Storage               | The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself.<br><br>Generally, the shelf life of liquid form is 6 months at -20°C,-80°C. The shelf life of lyophilized form is 12 months at -20°C,-80°C.Notes:Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.                                                                                                                                                                                  |

## Background

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 domain 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 domain 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 domain 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.

## References

"A human T cell-specific cDNA clone (YT16) encodes a protein with extensive homology to a family of protein-tyrosine kinases." Koga Y., Caccia N., Toyonaga B., Spolski R., Yanagi Y., Yoshikai Y., Mak T.W. Eur. J. Immunol. 16:1643-1646(1986) Research Topic: Immunology

Note: This product is for in vitro research use only and is not intended for use in humans or animals.