LCK Recombinant Protein

PRODUCT OVERVIEW

Product Name	Lck, Recombinant Protein
Full Product Name	Lck (human), (recombinant) (GST-tag)
Product Gene Name	Lck recombinant protein
Host	Insect cells
Form/Format	Liquid. In 50mM TRIS-HCl, pH7.5, containing 150mM NaCl, 10mM glutathione, 0.1mM EDTA, 0.25mM DTT, 0.1mM PMSF, 25% glycerol
Preparation and Storage	For long term storage, store at -80 degree C Shipping: Shipped on Dry Ice
Molecular Weight	58,001 Da
Chromosome Location	Chromosome: 1; NC_000001.10 (32716840..32751766). Location: 1p34.3
OMIM	153390
3D Structure	ModBase 3D Structure for P06239
Source Note	Produced in a baculovirus expression system
Product Categories/Family for Lck recombinant protein	Cellular Analysis; Cell Signaling; Proteostasis; Posttranslational Modifications
Related Product Information for Lck recombinant protein	Lck p56 has been shown to phosphorylate proteins that are part of the T cell receptor signaling cascade such as RasGAP, p56.
Other Notes	Small volumes of Lck recombinant protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for Lck purchase	MBS566627 is a recombinant protein targeting Lck. Also known as Lck (human), (recombinant) (GST-tag). Host: Insect cells.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for Lck. It may not necessarily be applicable to this product.

NCBI GI #	112789548
NCBI GeneID	3932
NCBI Accession #	NP_001036236.1
UniProt Primary Accession #	P06239
UniProt Secondary Accession #	P07100; Q12850; Q13152; Q5TDH8; Q5TDH9; Q7RTZ3; Q96DW4; Q9NYT8; D3DPP8
UniProt Related Accession #	P06239
GenBank Nucleotide #	NM_001042771.1
NCBI Official Full Name	tyrosine-protein kinase Lck
NCBI Official Synonym Full Names	lymphocyte-specific protein tyrosine kinase
NCBI Official Symbol	LCK

NCBI Official Synonym Symbols	LSK; YT16; p56lck; pp58lck
UniProt Protein Name	Tyrosine-protein kinase Lck
UniProt Synonym Protein Names	Leukocyte C-terminal Src kinase; LSK; Lymphocyte cell-specific protein-tyrosine kinase; Protein YT16; Proto-oncogene Lck; T cell-specific protein-tyrosine kinase; p56-LCK
Protein Family	Proto-oncogene tyrosine-protein kinase
UniProt Gene Name	LCK
UniProt Synonym Gene Names	LSK
UniProt Entry Name	LCK_HUMAN
NCBI Protein Information	tyrosine-protein kinase Lck; leukocyte C-terminal Src kinase; p56(LSTRA) protein-tyrosine kinase; t cell-specific protein-tyrosine kinase; proto-oncogene tyrosine-protein kinase LCK; lymphocyte cell-specific protein-tyrosine kinase; T-lymphocyte specific
NCBI Summary for Lck	This gene is a member of the Src family of protein tyrosine kinases (PTKs). The encoded protein is a key signaling molecule in the selection and maturation of developing T-cells. It contains N-terminal sites for myristylation and palmitylation, a PTK domain, and SH2 and SH3 domains which are involved in mediating protein-protein interactions with phosphotyrosine-containing and proline-rich motifs, respectively. The protein localizes to the plasma membrane and pericentrosomal vesicles, and binds to cell surface receptors, including CD4 and CD8, and other signaling molecules. Multiple alternatively spliced variants, encoding the same protein, have been described. [provided by RefSeq, Jul 2008]

UniProt Comments for Lck	Lck: a tyrosine kinase of the Src family that is crucial to antigen-receptor signaling in lymphocytes. 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. Binds to the cytoplasmic domain of cell surface receptors, such as CD2, CD4, CD5, CD8, CD44, CD45 and CD122. Also binds to effector molecules, such as PI4K, VAV1, RASA1, FYB and to other protein kinases including CDC2, RAF1, ZAP70 and SYK. Binds to phosphatidylinositol 3'-kinase (PI3K) from T-lymphocytes through its SH3 domain and to the tyrosine phosphorylated form of Sam68 through its SH2 domain. Binds to HIV-1 Nef through its SH3 domain. This interaction inhibits its tyrosine-kinase activity. Overexpression in mice leads to thymic tumors. Aberrant expression is seen in T cell leukemias and colon cancer. The leukemic translocation t(1;7)(p34;q34) has breakpoints at the T cell receptor gene and close to the Lck promoters, can cause increased Lck expression, and in one case, point mutations. A mutated Lck has also been seen in a cell line. One patient with aberrant Lck splicing suffered from SCID-like T cell deficiency. Inhibitor: BMS-279700. Three alternatively spliced isoforms of the human proteinhave been described. Protein type: Oncoprotein; EC 2.7.10.2; Protein kinase, tyrosine (non-receptor); Kinase, protein; Protein kinase, TK; TK group; Src family Chromosomal Location of Human Ortholog: 1p34.3 Cellular Component: pericentriolar material; extrinsic to internal side of plasma membrane; endocytic vesicle; plasma membrane; immunological synapse; intercellular junction; cytosol; lipid raft Molecular Function: protein C-terminus binding; CD8 receptor binding; identical protein binding; non-membrane spanning protein tyrosine kinase activity; protein serine/threonine phosphatase activity; protein phosphatase binding; antigen binding; protein kinase binding; ATPase binding; protein binding; protein-tyrosine kinase activity; protein complex binding; phosphoinositide 3-kinase binding; SH2 domain binding; glycoprotein binding; CD4 receptor binding; ATP binding Biological Process: viral reproduction; nerve growth factor receptor signaling pathway; T cell receptor signaling pathway; protein amino acid phosphorylation; B cell receptor signaling pathway; positive regulation of T cell receptor signaling pathway; hemopoiesis; positive regulation of gamma-delta T cell differentiation; aging; T cell differentiation; regulation of lymphocyte activation; caspase activation; response to drug; epidermal growth factor receptor signaling pathway; platelet activation; fibroblast growth factor receptor signaling pathway; phosphoinositide-mediated signaling; cellular zinc ion homeostasis; regulation of defense response to virus by virus; regulation of cell proliferation; dephosphorylation; positive regulation of tyrosine phosphorylation of Stat5 protein; response to hydrogen peroxide; response to zinc ion; response to mechanical stimulus; release of sequestered calcium ion into cytosol; T cell costimulation; innate immune response; positive regulation of T cell activation; blood coagulation; leukocyte migration; transmembrane receptor protein tyrosine kinase signaling pathway Disease: Immunodeficiency 22
Research Articles on Lck	**1.** conformational states regulate clustering in early T cell signaling
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