

## Recombinant LCK protein

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**Catalog No:** 81384, 81684

**Expressed In:** Baculovirus

**Quantity:** 10, 1000 µg

**Concentration:** 0.15 µg/µl

**Source:** Human

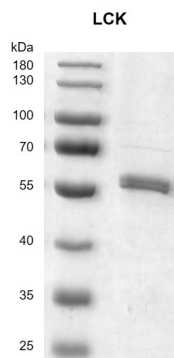
**Buffer Contents:** Recombinant LCK protein is supplied in 25 mM HEPES-NaOH pH 7.5, 300 mM NaCl, 10% glycerol, 0.04% Triton X-100, 0.5 mM TCEP.

**Background:** LCK (LCK Proto-Oncogene, Src Family Tyrosine Kinase) is a 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. It 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 tyrosine 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 phosphorylates other substrates including RUNX3, PTK2B/PYK2, the microtubule-associated protein MAPT, RHOH or TYROBP.

**Protein Details:** Recombinant LCK protein was expressed in baculovirus expression system as the full length protein (accession number NP\_001036236.1) with a N-terminal FLAG tag. The molecular weight of the protein is 59.3 kDa.

**Application Notes:** This product was manufactured as described in Protein Details. Where possible, Active Motif has developed functional or activity assays for recombinant proteins. Additional characterization such as enzyme kinetic activity assays, inhibitor screening or other biological activity assays may not have been performed for every product. All available data for a given product is shown on the lot-specific Technical Data Sheet.

**Storage and Guarantee:** Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is guaranteed for 6 months from date of arrival.

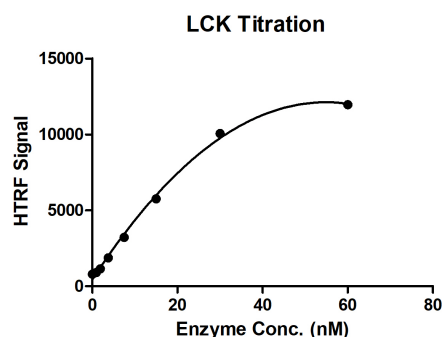


### Recombinant LCK protein

10% SDS-PAGE with Coomassie staining

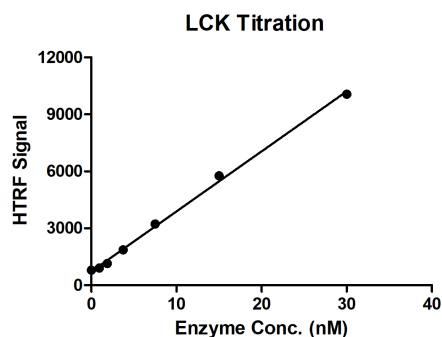
MW: 59.3 kDa

Purity: >90%



### HTRF assay for LCK activity

1  $\mu$ M TK substrate was incubated with different concentrations of LCK protein in a 10  $\mu$ l reaction system containing 1 $\times$ Enzymatic Buffer, 5 mM MgCl<sub>2</sub>, 5 nM SEB, 1 mM DTT and 100  $\mu$ M ATP for 1 hour. The 10  $\mu$ l detection reagents containing TK antibody (1:2) and SA-XL665 (1:100) diluted with 1 $\times$  Detection Buffer were added and incubated with the reactions for 30 min. All the operations and reactions were performed at room temperature. HTRF assay was used for detection.



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