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Lck Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1064a

Product Information

Application	WB, E
Primary Accession	P06239
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	8E5F9; 4B2C7
Isotype	IgG2a
Calculated MW	58001
Description	Lck (lymphocyte-specific protein tyrosine kinase), with 509-amino acid protein (about 56kDa), belongs to the Src non-receptor tyrosine kinases family. By virtue of common structural motifs, the Src family is composed of nine members in vertebrates, including Src, Yes, Fgr, Frk, Fyn, Lyn, Hck, Lck and Blk. Lck is expressed predominantly in T cells and is localized to the inner surface of the plasma membrane. Lck is activated after T cell stimulation and is required for T-cell proliferation and IL-2 production. Aberrant expression or activation of Lck kinase has been reported in both lymphoid and nonlymphoid malignancies. In addition, inhibition of Lck has been a target to prevent lymphocyte activation and acute rejection.
Immunogen	Purified recombinant fragment of human Lck expressed in E. Coli.
Formulation	Ascitic fluid containing 0.03% sodium azide.

Additional Information

Gene ID	3932
Other Names	Tyrosine-protein kinase Lck, 2.7.10.2, 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, LCK
Dilution	WB~~1/500 - 1/2000 E~~N/A
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	Lck Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	LCK
Function	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 (PubMed:2470098). Plays a key role in T-cell antigen receptor (TCR)-linked signal transduction pathways (PubMed:2470098). Constitutively associated with the cytoplasmic portions of the CD4 and CD8 surface receptors (PubMed:2470098). 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 (PubMed:2470098). 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 (PubMed:2470098, PubMed:40592325). 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 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. Interacts with FYB2 (PubMed:27335501).
Cellular Location	Cell membrane; Lipid-anchor; Cytoplasmic side Cytoplasm, cytosol. Note=Present in lipid rafts in an inactive form.
Tissue Location	Expressed specifically in lymphoid cells.

References

1. Mingjian Shi, John C. Cooper, Chao-Lan Yu. Mol. Cancer Res., Jan 2006; 4: 39–45 2. Robert F. Stachlewitz, Michelle A. Hart, Brian Bettencourt. J. Pharmacol. Exp. Ther., Oct 2005; 315: 36–41. 3. Ibrahim Y. Hawash, Kamala P. Kesavan, Anthony I. Magee. J. Biol. Chem., Feb 2002; 277: 5683–5691.

Images

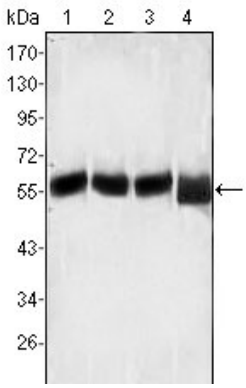
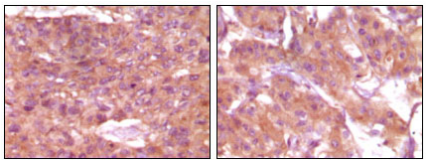


Figure 1: Western blot analysis using LCK mouse mAb against MOLT-4 (1), CCRF-CEM (2), CCRF-HSB-2 (3) and Jurkat (4) cell lysate.

Figure 2: Immunohistochemical analysis of paraffin-embedded human skin carcinoma (left) and breast carcinoma (right), showing cytoplasmic and



membrane localization using SRA mouse mAb with DAB staining.

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