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LCK Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7712A

Product Information

Application	IHC-P, IF, FC, WB, E
Primary Accession	P06239
Other Accession	P06240
Reactivity	Human, Rat, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB3088
Calculated MW	58001
Antigen Region	23-52

Additional Information

Gene ID	3932
Other Names	Tyrosine-protein kinase Lck, 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
Target/Specificity	This LCK antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 23-52 amino acids from the N-terminal region of human LCK.
Dilution	IHC-P~~1:100~500 IF~~1:10~50 FC~~1:10~50 WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	LCK Antibody (N-term) 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.

Background

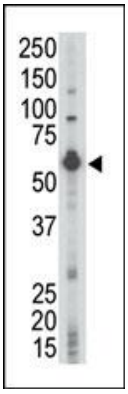
LSK, which belongs to the SRC subfamily of Tyr protein kinases, may participate in antigen-induced T-cell activation. It binds to phosphatidylinositol 3'-kinase (PI3K) from T lymphocytes through its SH3 domain and to the tyrosine phosphorylated form of KHDRBS1/p70 through its SH2 domain. LSK is bound to the cytoplasmic domain of either CD4 or CD8. This protein is involved in leukemias by a chromosomal translocation t(1;7)(p34;q34) which involves LCK and T-cell receptor beta chain (TCRB) genes.

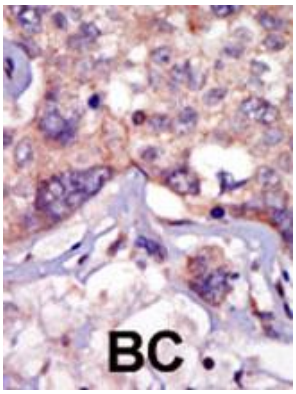
References

Harris, R.A., et al., Proteomics 2(2):212-223 (2002). Strausberg, R.L., et al., Proc. Natl. Acad. Sci. U.S.A. 99(26):16899-16903 (2002). Boncristiano, M., et al., Eur. J. Immunol. 30(9):2632-2638 (2000). Tong, L., et al., J. Biol. Chem. 273(32):20238-20242 (1998). Yamaguchi, H., et al., Nature 384(6608):484-489 (1996).

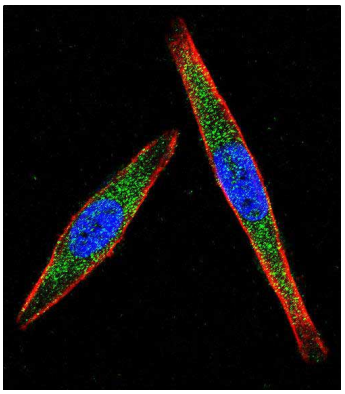
Images

Western blot analysis of anti-LCK Pab (Cat. #AP7712a) in mouse thymus tissue lysate. LCK (arrow) was detected using purified Pab. Secondary HRP-anti-rabbit was used for signal visualization with chemiluminescence.

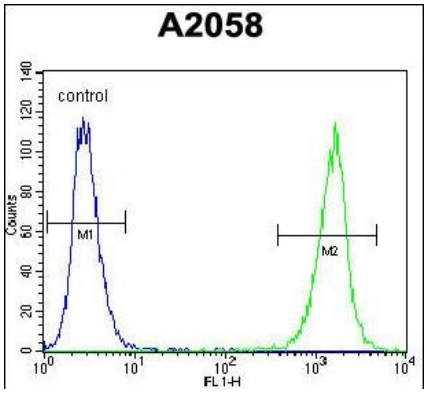




Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.



Confocal immunofluorescent analysis of LCK Antibody (N-term)(Cat#AP7712a) with A2058 cell followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green).Actin filaments have been labeled with Alexa Fluor 555 phalloidin (red).DAPI was used to stain the cell nuclear (blue).



LCK Antibody (N-term) (Cat. #AP7712a) flow cytometric analysis of A2058 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.