

Technical Data Sheet

Purified Mouse Anti-Human p56-Lck w/ Control**Product Information**

Material Number:	551048
Size:	150 µg
Reactivity:	QC Testing: Human Reported: Mouse
Component:	51-1495GR
Description:	Purified Mouse Anti-Human p56-Lck
Size:	50 µg (3 ea)
Concentration:	0.25 mg/ml
Clone Name:	MOL 171
Immunogen:	Human N-terminal Lck
Isotype:	Mouse (BALB/c) IgG1, κ
Storage Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.
Component:	51-16526N
Description:	Jurkat Cell Lysate
Size:	50 µg (1 ea)
Concentration:	1.0 mg/ml
Storage Buffer:	SDS-PAGE buffer (62mM Tris pH 6.8, 2% SDS, 0.9% b-mercaptoethanol, 0.003% bromophenol blue, 5% glycerol)

Description

The T-cell receptor (TCR) is a multi-chain transmembrane receptor responsible for antigen recognition on the T-cell surface. T cells also express several other integral membrane proteins, including CD4 and CD8, which play significant roles in the functional responses of the TCR to antigen presentation. Following antigen or ligand binding to the TCR, a series of interrelated membrane and cytoplasmic activation or signaling events rapidly occurs. These events include tyrosine phosphorylation of membrane and cytoplasmic proteins, plasma membrane inositol phospholipid hydrolysis, increases in cytoplasmic calcium concentrations, and increases in protein kinase C activity. The earliest measurable biochemical changes are the appearance of newly phosphorylated tyrosine residues on a variety of cytoplasmic and membrane proteins. Phosphorylation of tyrosine residues is mediated by protein tyrosine kinases (PTKs). Several different PTKs have been implicated in early phosphorylation events of T cell activation, including lck. p56-lck is a member of the Src family, and its functional domains can be divided into two regions based on sequence comparison with p60-src. The N-terminal half, which is highly divergent, contains the membrane bound/substrate interactive domain. The C-terminal half, which has more conserved homology, contains the kinase domain. Lck is normally expressed exclusively in cells of lymphoid lineage, primarily T cells, and natural killer cells. Lck is generally expressed at detectable levels in T-cell lines, including CTLL-2 (ATCC TIB-214) and Jurkat. Lower levels of lck expression have been detected in B cells. Aberrant expression of lck has been described in human colon and lung carcinoma cell lines. Lck plays a role T-cell signal transduction through its physical association with the cytoplasmic tails of CD4 and CD8 expressed in helper and cytolytic T-cells, respectively. The importance of lck in T cell activation is supported by genetic studies. For example, mice with lck null mutations lack T cell development. Additionally, mice expressing only mutant CD4 that is unable to bind to lck, lack the ability to activate T cells through the TCR. MOL 171 reacts with human lck proteins (56-60 kDa). It cross-reacts with mouse lck proteins. A 25 amino acid synthetic peptide corresponding to the N-terminal region of the human lck sequence was used as immunogen.

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

Store undiluted at -20°C.

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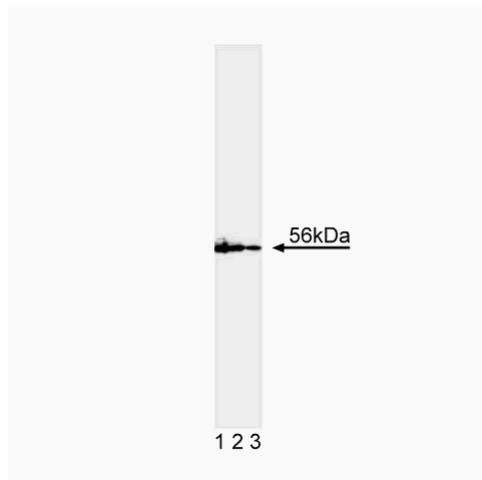
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Western blot analysis of Lck. Lysate from Jurkat cells was probed with anti-Lck (clone MOL 171, Cat. No. 51-1495GR) at concentrations of 2.0 (lane 1), 1.0 (lane 2), and 0.5 µg/ml (lane 3). Lck is identified as a band of 56 kDa.

Application Notes

Application

Western blot	Routinely Tested
Immunoprecipitation	Reported

Recommended Assay Procedure:

Applications include western blot analysis (0.5-2.0 µg/ml). Other applications not routinely tested at BD Biosciences Pharmingen include immunoprecipitation (2.0-5.0 µg/ml). Lck is typically detected as one or multiple bands ranging between 56-60 kDa. Jurkat control lysate [50 µg (1 µg/µl)] is provided as a western blot positive control (Cat. No. 51-16526N; store lysate at -20°C). Additional control lysate (Cat. No. 611451) is sold separately. U937 human histiocytic lymphoma cells (ATCC CRL-1593) are suggested as a negative control. For western blot analysis, 5 µg total cell protein per lane is recommended for SDS/PAGE mini-gels. Non-specific bands may be detected if too much protein is loaded onto the gel.

Suggested Companion Products

Catalog Number	Name	Size	Clone
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)
611451	Jurkat Cell Lysate	500 µg	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. Source of all serum proteins is from USDA inspected abattoirs located in the United States.

References

Abraham N, Veillette A. The lymphocyte-specific tyrosine protein kinase p56lck. *Cancer Res.* 1991; 9(4):455-463.(Biology)

Abbas AK, Lichtman AH, Pober JS. Molecular basis of T cell antigen recognition and activation. In: Abbas AK, Lichtman AH, Pober JS. *Cellular and Molecular Biology*. Philadelphia: WB Saunders Co; 1991:136-165.(Biology)

Moroi Y, Koga Y, Nakamura K, Ohtsu M, Kimura G, Nomoto K. Accumulation of p60 lck in HTLV-I-transformed T cell lines detected by an anti-Lck monoclonal antibody, MOL 171. *Jpn J Cancer Res.* 1991; 82:909-915.(Immunogen: Western blot)

Nakashima I, Pu M-Y, Hamaguchi M, et al. Pathway of signal delivery to murine thymocytes triggered by co-crosslinking CD3 and Thy-1 for cellular DNA fragmentation and growth inhibition. *J Immunol.* 1993; 151(7):3511-3520.(Clone-specific: Immunoprecipitation, Western blot)

Perlmutter RM, Marth JD, Lewis DB, Peet R, Ziegler SF, Wilson CB. Structure and expression of lck transcripts in human lymphoid cells. *J Cell Biochem.* 1988; 38(2):117-126.(Biology)

Quill H, Riley MP, Cho EA, Casnellie JE, Reed JC, Torigoe T. Anergic Th1 cells express altered levels of the protein tyrosine kinases p56lck and p59fyn. *J Immunol.* 1992; 149(9):2887-2893.(Biology)

Sancho J, Peter ME, Franco R, et al. Coupling of GTP-binding to the T cell receptor (TCR) zeta-chain with TCR-mediated signal transduction. *J Immunol.* 1993; 150(8):3230-3242.(Biology)

Taichman R, Merida I, Torigoe T, Gaulton GN, Reed JC. Evidence that protein tyrosine kinase p56-Lck regulates the activity of phosphatidylinositol-3'-kinase in interleukin-2-dependent T-cells. *J Biol Chem.* 1993; 268(7):20031-20036.(Biology)

Torigoe T, O'Connor R, Fagard R, Fischer S, Santoli D, Reed JC. Interleukin 4 inhibits IL-2-induced proliferation of a human T-leukemia cell line without interfering with p56-LCK kinase activation. *Cytokine.* 1992; 4(5):369-376.(Biology)

Veillette A, Foss FM, Sausville EA, Bolen JB, Rosen N. Expression of the lck tyrosine kinase gene in human colon carcinoma and other non-lymphoid human tumor cell lines. *Oncogene Res.* 1987; 1(4):357-374.(Biology)