Technical Data Sheet

Purified Mouse anti-LAT (pY171)

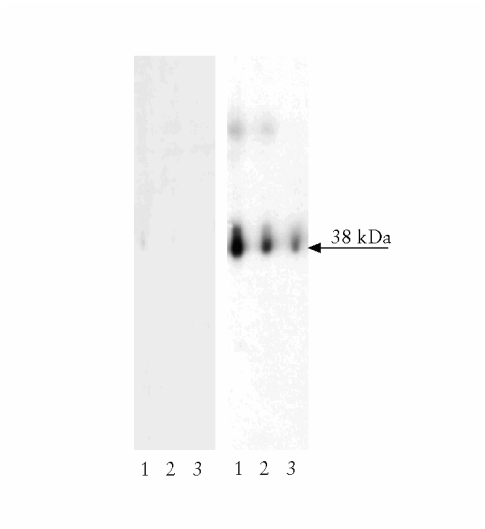
Product Information

Material Number:	**558392**
Size:	0.1 mg
Concentration:	0.5 mg/ml
Clone:	I58-1169
Immunogen:	Phosphorylated Human LAT
Isotype:	Mouse (BALB/c) IgG1, κ
Reactivity:	QC Testing: Human
Target MW:	38 kDa
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

Engagement of the T cell receptor (TCR) induces signal transduction pathways that enhance gene transcription and cellular proliferation and differentiation. TCR ligation results in the recruitment and activation of multiple protein tyrosine kinases (PTKs), including lck, fyn, and ZAP70. Adaptor proteins, such as Grb2 and SLP-76, relay the signal to downstream effector molecules. LAT (linker for activation of T cells) is a substrate of the activated ZAP70 and functions to bridge the activated TCR and its associated PTKs with tyrosine kinase substrates. LAT is expressed as 36- and 38-kDa forms that result from post-translational modification, and as a 42-kDa form that results from alternative splicing. LAT is an integral membrane protein that is phosphorylated at five tyrosine sites upon TCR ligation. Following phosphorylation, LAT binds a number of important signaling molecules, including Grb2, Vav, PLCγ1, and the p85 subunit of PI3K. Multiple studies have shown that functional LAT is required for T lymphocyte activation and thymocyte development.

The I58-1169 monoclonal antibody recognizes the phosphorylated tyrosine 171 (pY171) of LAT, which is one of the phosphotyrosine sites required for binding phosphoinositide 3-kinase, Grb2, and Gads.



Western blot analysis of LAT (pY171) on stimulated human T lymphocytes. *Human Jurkat (T cell leukemia; ATCC TIB-152™) cells were either left untreated (Left Panel) or were activated with Purified NA/LE Mouse anti-Human CD3 (cat No. 555329) and Purified NA/LE Mouse anti-Human CD28 (Cat No. 555725)(Right Panel) and were then lysed. The lysates were then probed with Purified Mouse anti-LAT (pY171) (Cat. No. 558392) at concentrations of 2.0, 1.0, and 0.5 µg/ml (Lanes 1, 2, and 3, respectively). LAT (pY171) is identified as a band of 38 kDa in the treated cells.*

Preparation and Storage

Store undiluted at 4°C.

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

Application Notes

Application

Western blot	Routinely Tested
Immunohistochemistry-formalin (antigen retrieval required)	Not Recommended

BD Biosciences

bdbiosciences.com

United States	Canada	Europe	Japan	Asia Pacific	Latin America/Caribbean
877.232.8995	800.979.9408	32.53.720.550	0120.8555.90	65.6861.0633	55.11.5185.9995

For country contact information, visit **bdbiosciences.com/contact**

Suggested Companion Products

Catalog Number	Name	Size	Clone
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)
555329	Purified NA/LE Mouse Anti-Human CD3	0.5 mg	UCHT1
555725	Purified NA/LE Mouse Anti-Human CD28	0.5 mg	CD28.2

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. Sodium azide is a reversible inhibitor of oxidative metabolism; therefore, antibody preparations containing this preservative agent must not be used in cell cultures nor injected into animals. Sodium azide may be removed by washing stained cells or plate-bound antibody or dialyzing soluble antibody in sodium azide-free buffer. Since endotoxin may also affect the results of functional studies, we recommend the NA/LE (No Azide/Low Endotoxin) antibody format, if available, for in vitro and in vivo use.

References

Cho S, Velikovsky CA, Swaminathan CP, Houtman JCD, Samelson LE, Mariuzza RA. Structural basis for differential recognition of tyrosine-phosphorylated sites in the linker for activation of T cells (LAT) by the adaptor Gads. *EMBO J.* 2004; 23:1441-1451. (Biology)

Janssen E, Zhang W. Adaptor proteins in lymphocyte activation. *Curr Opin Immunol.* 2003; 15:269-276. (Biology)

Lin J, Weiss A. Identification of the minimal tyrosine residues required for linker for activation of T cell function. *J Biol Chem.* 2001; 276(31):29588-29595. (Biology)

Paz PE, Wang S, Clarke H, Lu X, Stokoe D, Abo A. Mapping the ZAP-70 phosphorylation sites on LAT (linker for activation of T cells) required for recruitment and activation of signalling proteins in T cells. *Biochem J.* 2001; 356:461-471. (Biology)

Samelson LE. Signal transduction mediated by the T cell antigen receptor: The role of adapter proteins. *Annu Rev Immunol.* 2002; 20:371-394. (Biology)

Zhu M, Janssen E, Zhang W. Minimal requirement of tyrosine residues of linker for activation of T cells in TCR signaling and thymocyte development. *J Immunol.* 2003; 170:325-333. (Biology)

BD Biosciences

bdbiosciences.com

United States	Canada	Europe	Japan	Asia Pacific	Latin America/Caribbean
877.232.8995	800.979.9408	32.53.720.550	0120.8555.90	65.6861.0633	55.11.5185.9995

For country contact information, visit **bdbiosciences.com/contact**