

## Technical Data Sheet

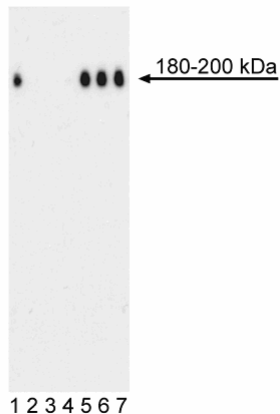
**Purified Mouse anti-CD45 (pS999)****Product Information**

<b>Material Number:</b>	558376
<b>Alternate Name:</b>	leukocyte common antigen (LCA), Ly-5, or T200
<b>Size:</b>	0.1 mg
<b>Concentration:</b>	0.5 mg/ml
<b>Clone:</b>	J143-1270
<b>Immunogen:</b>	Phosphorylated Human CD45 Peptide
<b>Isotype:</b>	Mouse (BALB/c) IgG1, $\kappa$
<b>Reactivity:</b>	QC Testing: Human (western blot) Tested in Development: Mouse (flow cytometry)
<b>Target MW:</b>	180-220 kDa
<b>Storage Buffer:</b>	Aqueous buffered solution containing $\leq 0.09\%$ sodium azide.

**Description**

CD45 is found on all hematopoietic cells except those of the erythrocyte lineage. The N-terminal domain is a large glycosylated extracellular region of variable length (390-542 amino acids) derived by the alternative splicing of at least three exons (4, 5, or 6). This variation accounts for the different isoforms of CD45 (180-220 kDa). The remainder of the molecule includes a short transmembrane region followed by a large highly conserved cytoplasmic domain that contains two tandem protein tyrosine phosphatase (PTPase) domains (D1 and D2). Both domains are required for optimal PTPase activity and show significant homology with other receptor-like and cytoplasmic PTPases, but only D1 has phosphatase activity. CD45 plays a critical role in antigen receptor-induced responses of T and B lymphocytes by regulating the Src-family protein tyrosine kinases that initiate their signaling cascades. It is also involved in the regulation of lymphocyte responses to cytokines and chemokines and some functions of myeloid cells. Multiple phosphorylations occur in a serine-rich sequence in D2, but how they affect CD45's activity has not yet been revealed.

The J143-1270 monoclonal antibody recognizes the phosphorylated serine 999 (pS999) in D2 of human CD45.



**Western blot analysis of CD45 (pS999) in human T leukemia.** Jurkat cell lysate (Cat. No. 611451) was probed with purified mouse anti-CD45 (pS999) monoclonal antibody at 0.063  $\mu\text{g/ml}$  (Lane 1). In the remaining lanes, peptide blocking demonstrates the antibody's specificity for the phosphorylated protein: The antibody (0.063  $\mu\text{g/ml}$ ) was mixed with 10, 1, or 0.1  $\mu\text{g/ml}$  of CD45 (pS999) phosphorylated peptide (lanes 2, 3, and 4, respectively) or with the same concentrations of the equivalent non-phosphorylated peptide (lanes 5, 6, and 7, respectively) before blotting. CD45 (pS999) is identified as a band of 180-220 kDa, except when blocked by the phosphorylated peptide.

**Preparation and Storage**

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

Store undiluted at 4°C.

**Application Notes****Application**

Western blot	Routinely Tested
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## Suggested Companion Products

<u>Catalog Number</u>	<u>Name</u>	<u>Size</u>	<u>Clone</u>
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/pharming/en/protocols](http://www.bdbiosciences.com/pharming/en/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.

## References

Greer SF, Wang Y, Raman C, Justement LB. CD45 function is regulated by an acidic 19-amino acid insert in domain II that serves as a binding and phosphoacceptor site for casein kinase 2. *J Immunol.* 2001; 166:7208-7218.(Biology)

Hermiston ML, Xu Z, Weiss A. CD45: A critical regulator of signaling thresholds in immune cells. *Annu Rev Immunol.* 2003; 21:107-137.(Biology)

Mustelin T, Vang T, Bottini N. Protein tyrosine phosphatases and the immune response. *Nat Rev Immunol.* 2005; 5:43-57.(Biology)