

#72177  
Store at +4C**CD45RA (HI100) Mouse mAb (violetFluor™  
450 Conjugate)****Orders:** 877-616-CELL (2355)  
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**For Research Use Only. Not for Use in Diagnostic Procedures.**

|                                     |                         |                                   |   |                               |                                |
|-------------------------------------|-------------------------|-----------------------------------|---|-------------------------------|--------------------------------|
| <b>Applications:</b><br>FC-FP, FC-L | <b>Reactivity:</b><br>H | <b>Sensitivity:</b><br>Endogenous | <b>Source/Isotype:</b><br>Mouse IgG2b kappa | <b>UniProt ID:</b><br>#P08575 | <b>Entrez-Gene Id:</b><br>5788 |
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**Product Usage  
Information****Application**Flow Cytometry (Fixed/Permeabilized)  
Flow Cytometry (Live)**Dilution**1:20  
1:20**Storage**Supplied in 10 mM NaH<sub>2</sub>PO<sub>4</sub>, 150 mM NaCl, 0.09% NaN<sub>3</sub>, 0.1% gelatin, pH 7.2. This product is stable for 12 months when stored at 4°C. Do not aliquot the antibody. Protect from light. Do not freeze.**Specificity/Sensitivity**

CD45RA (HI100) Mouse mAb (violetFluor™ 450 Conjugate) recognizes endogenous levels of total CD45RA protein. This antibody detects an epitope within the extracellular domain.

**Source / Purification**

This monoclonal antibody was purified from tissue culture supernatant via affinity chromatography. The purified antibody was conjugated under optimal conditions, with unreacted dye removed from the preparation.

**Description**

This Cell Signaling Technology antibody is conjugated to violetFluor™ 450 and tested in-house for direct flow cytometric analysis in human cells.

**Background**

The protein phosphatase (PTP) receptor CD45 is a type I transmembrane protein comprised of a pair of intracellular tyrosine phosphatase domains and a variable extracellular domain generated by alternative splicing (1). The catalytic activity of CD45 is a function of the first phosphatase domain (D1) while the second phosphatase domain (D2) may interact with and stabilize the first domain, or recruit/bind substrates (2,3). CD45 interacts directly with antigen receptor complex proteins or activates Src family kinases involved in the regulation of T- and B-cell antigen receptor signaling (1). Specifically, CD45 dephosphorylates Src-family kinases Lck and Fyn at their conserved negative regulatory carboxy-terminal tyrosine residues and upregulates kinase activity. Conversely, studies indicate that CD45 can also inhibit Lck and Fyn by dephosphorylating their positive regulatory autophosphorylation site. CD45 appears to be both a positive and a negative regulator that conducts signals depending on specific stimuli and cell type (1). Human leukocytes including lymphocytes, eosinophils, monocytes, basophils, and neutrophils express CD45, while erythrocytes and platelets are negative for CD45 expression (4).

Several isoforms of CD45 are generated through alternative splicing in a cell type-specific and activation state-specific manner. The HI100 antibody is widely used as a leukocyte marker for naïve and activated T cells. Naïve T cells are positive for CD45RA, where activated T cells are negative for CD45RA (5).

**Background References**

- Huntington, N.D. and Tarlinton, D.M. (2004) *Immunol Lett* 94, 167-74.
- Felberg, J. and Johnson, P. (2000) *Biochem Biophys Res Commun* 271, 292-8.
- Kashio, N. et al. (1998) *J Biol Chem* 273, 33856-63.
- Wang, Y. and Johnson, P. (2005) *J Biol Chem* 280, 14318-24.
- Cosenza-Nashat, M.A. et al. (2006) *Brain Pathol* 16, 256-65.

**Species Reactivity**

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

**Applications Key****FC-FP:** Flow Cytometry (Fixed/Permeabilized) **FC-L:** Flow Cytometry (Live)**Cross-Reactivity Key****H:** Human**Trademarks and Patents**

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