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## CD45 (HI30) Mouse mAb (APC-Cy7<sup>®</sup> Conjugate)

For Research Use Only. Not for Use in Diagnostic Procedures.

<b>Applications:</b> FC-L	<b>Reactivity:</b> H	<b>Sensitivity:</b> Endogenous	<b>Source/Isotype:</b> Mouse IgG1	<b>UniProt ID:</b> #P08575	<b>Entrez-Gene Id:</b> 5788
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<b>Product Usage Information</b>	<b>Application</b> Flow Cytometry (Live)	<b>Dilution</b> 1:20
<b>Storage</b>	Supplied in 10 mM NaH <sub>2</sub> PO <sub>4</sub> , 150 mM NaCl, 0.09% NaN <sub>3</sub> , 0.1% gelatin, pH7.2. This product is stable for 6 months when stored at 4°C. Do not aliquot the antibody. Protect from light. Do not freeze.	
<b>Specificity/Sensitivity</b>	CD45 (HI30) Mouse mAb (APC-Cy7 <sup>®</sup> Conjugate) recognizes endogenous levels of total CD45 protein. This antibody detects an epitope within the extracellular domain.	
<b>Source / Purification</b>	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.	
<b>Description</b>	This Cell Signaling Technology antibody is conjugated to APC-Cy7 <sup>®</sup> and tested in-house for direct flow cytometric analysis in human cells.	
<b>Background</b>	<p>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).</p> <p>The HI30 antibody is widely used as a marker for human CD45 expression on all leukocytes, including T cells, B cells, monocytes, macrophages, and NK cells.</p>	
<b>Background References</b>	<ol style="list-style-type: none"> <li>Huntington, N.D. and Tarlington, D.M. (2004) <i>Immunol Lett</i> 94, 167-74.</li> <li>Felberg, J. and Johnson, P. (2000) <i>Biochem Biophys Res Commun</i> 271, 292-8.</li> <li>Kashio, N. et al. (1998) <i>J Biol Chem</i> 273, 33856-63.</li> <li>Wang, Y. and Johnson, P. (2005) <i>J Biol Chem</i> 280, 14318-24.</li> </ol>	
<b>Species Reactivity</b>	Species reactivity is determined by testing in at least one approved application (e.g., western blot).	
<b>Applications Key</b>	<b>FC-L:</b> Flow Cytometry (Live)	
<b>Cross-Reactivity Key</b>	<b>H:</b> Human	
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