Revision 5

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CD45 (HI30) Mouse mAb (PE Conjugate)

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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Applications:	Reactivity:	Sensitivity:	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
FC-FP, FC-L	H	Endogenous	Mouse IgG1	#P08575	5788

Product Usage Information

Application	Dilution
Flow Cytometry (Fixed/Permeabilized)	1:20
Flow Cytometry (Live)	1:20

Storage

Supplied in 10 mM NaH2PO4, 150 mM NaCl, 0.09% NaN3, 0.1% gelatin, pH 7.2. This product is stable for 12 months when stored at 4ºC. Do not aliquot the antibody. Protect from light. Do not freeze.

Specificity / Sensitivity

CD45 (HI30) Mouse mAb (PE Conjugate) recognizes endogenous levels of total CD45 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.

Product Description

This Cell Signaling Technology antibody is conjugated to PE 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).
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.

Background References

1. Huntington, N.D. and Tarlinton, D.M. (2004) *Immunol Lett* 94, 167-74.
2. Felberg, J. and Johnson, P. (2000) *Biochem Biophys Res Commun* 271, 292-8.
3. Kashio, N. et al. (1998) *J Biol Chem* 273, 33856-63.
4. Wang, Y. and Johnson, P. (2005) *J Biol Chem* 280, 14318-24.

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 **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster **X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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