Revision 1

#16935 Store at +4C

# CD45R/B220 (RA3-6B2) Rat mAb (PE-Cy5® Conjugate)

Cell Signaling TECHNOLOGY®

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

| Applications: | Reactivity: | Sensitivity: | Source/Isotype: | UniProt ID: | Entrez-Gene Id: |
|---|---|---|---|---|---|
| FC-FP, FC-L | H M | Endogenous | Rat IgG2a kappa | #P06800 | 19264 |

## Product Usage Information

For optimal flow cytometry results, we recommend 0.125 µg of antibody per test.

| Application | Dilution |
|---|---|
| Flow Cytometry (Fixed/Permeabilized) | 1:160 |
| Flow Cytometry (Live) | 1:160 |

## Storage

Supplied in 10 mM $NaH_2PO_4$, 150 mM NaCl, 0.09% $NaN_3$, 0.1% gelatin, pH 7.2. This product is stable for 6 months when stored at 4ºC. Do not aliquot the antibody. Protect from light. Do not freeze.

## Specificity/Sensitivity

CD45R/B220 (RA3-6B2) Rat mAb (PE-Cy5® Conjugate) recognizes endogenous levels of total CD45R/B220 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 PE-Cy5® and tested in-house for direct flow cytometric analysis in mouse 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 RA3-6B2 clone is raised against an isoform of CD45 known as CD45R/B220. CD45R/B220 is widely used as a marker for B cells, T cell subsets, and NK cell subsets in both human and mouse (5).

## 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.
5. Hermiston, M.L. et al. (2003) *Annu Rev Immunol* 21, 107-37.

## 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

## Trademarks and Patents

## Limited Uses

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