Technical Data Sheet

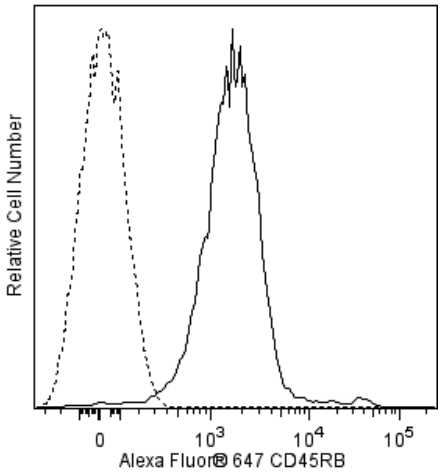
# Alexa Fluor® 647 Rat Anti-Mouse CD45RB

## Product Information

| | |
|---|---|
| **Material Number:** | **562848** |
| **Alternate Name:** | Ptprc; CD45R; CD45; LCA; Leukocyte common antigen; Ly-5; Lyt-4 |
| **Size:** | 0.1 mg |
| **Concentration:** | 0.2 mg/ml |
| **Clone:** | 16A |
| **Immunogen:** | Cloned Mouse TH2 cell lines |
| **Isotype:** | Rat IgG2a, κ |
| **Reactivity:** | QC Testing: Mouse |
| **Storage Buffer:** | Aqueous buffered solution containing ≤0.09% sodium azide. |

## Description

The 16A antibody reacts with an exon B-dependent epitope of CD45 lycoprotein, which is found at high density on peripheral B cells, T cytotoxic/suppressor cells, subset of T helper cells, and most thymocytes and at low density on macrophages and dendritic cells.The level of CD45RB expression appears to decrease as T lymphocytes progress from naive to memory cells. In addition, subpopulations of CD4+ T cells which express high and low levels of D45RB have different ytokine secretion profiles and mediate distinct immunological functions. CD25+ D4+ regulatory T (Treg) lymphocytes which control intestinal inflammation and autoimmunity express low levels of D45RB. CD45 is a member of the Protein Tyrosine Phosphatase (PTP) family: Its intracellular (COOH-terminal) region contains two PTP catalytic domains, and the extracellular region is highly variable due to alternative splicing of exons (designated A, B, and C, respectively), plus differing levels of glycosylation. The CD45 isoforms detected in the mouse are cell type-, maturation-, and activation state-specific. The CD45 isoforms play complex roles in T-cell and B-cell antigen receptor signal transduction.




***Flow cytometric analysis of CD45RB expression on mouse thymocytes.*** *BALB/c mouse thymocytes were preincubated with Purified Rat Anti-Mouse CD16/CD32 antibody (Mouse BD Fc Block™) (Cat. No. 553141/553142). The cells were then stained with either Alexa Fluor® 647 Rat Anti-Mouse CD45RB antibody (Cat. No. 562848; solid line histogram) or Alexa Fluor® 647 Rat IgG2a, κ Isotype Control (Cat. No. 557690; dashed line histogram). The fluorescence histograms were derived from gated events with the forward and side light-scatter characteristics of viable cells. Flow cytometric analysis was performed using a BD™ LSR II Flow Cytometer System.*

## Preparation and Storage

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

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

The antibody was conjugated to Alexa Fluor® 647 under optimum conditions, and unreacted Alexa Fluor® 647 was removed.

## Application Notes

**Application**

| | |
|---|---|
| Flow cytometry | Routinely Tested |

## Suggested Companion Products

| Catalog Number | Name | Size | Clone |
|---|---|---|---|
| 554656 | Stain Buffer (FBS) | 500 ml | (none) |
| 553141 | Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™) | 0.1 mg | 2.4G2 |
| 553142 | Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™) | 0.5 mg | 2.4G2 |
| 557690 | Alexa Fluor® 647 Rat IgG2a, κ Isotype Control | 0.1 mg | R35-95 |

**BD Biosciences**

*bdbiosciences.com*

| United States | Canada | Europe | Japan | Asia Pacific | Latin America/Caribbean |
|---|---|---|---|---|---|
| 877.232.8995 | 800.979.9408 | 32.53.720.550 | 0120.8555.90 | 65.6861.0633 | 55.11.5185.9995 |

For country contact information, visit **bdbiosciences.com/contact**

## Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
3. The Alexa Fluor®, Pacific Blue™, and Cascade Blue® dye antibody conjugates in this product are sold under license from Molecular Probes, Inc. for research use only, excluding use in combination with microarrays, or as analyte specific reagents. The Alexa Fluor® dyes (except for Alexa Fluor® 430), Pacific Blue™ dye, and Cascade Blue® dye are covered by pending and issued patents.
4. Alexa Fluor® is a registered trademark of Molecular Probes, Inc., Eugene, OR.
5. Alexa Fluor® 647 fluorochrome emission is collected at the same instrument settings as for allophycocyanin (APC).
6. 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.
7. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
8. An isotype control should be used at the same concentration as the antibody of interest.

## References


Bottomly K, Luqman M, Greenbaum L. A monoclonal antibody to murine CD45R distinguishes CD4 T cell populations that produce different cytokines. *Eur J Immunol.* 1989; 19(4):617-623. (Immunogen: Cell separation, Flow cytometry, Immunoprecipitation)

Dianzani U, Luqman M, Rojo J. Molecular associations on the T cell surface correlate with immunological memory. *Eur J Immunol.* 1990; 20(10):2249-2257. (Clone-specific)

Ernst DN, Weigle WO, Noonan DJ, McQuitty DN, Hobbs MV. The age-associated increase in IFN-γ synthesis by mouse CD8+ T cells correlates with shifts in the frequencies of cell subsets defined by membrane CD44, CD45RB, 3G11, and MEL-14 expression. *J Immunol.* 1993; 151(2):575-587. (Clone-specific: Flow cytometry)

Hathcock KS, Laszlo G, Dickler HB, et al. Expression of variable exon A-, B-, and C-specific CD45 determinants on peripheral and thymic T cell populations. *J Immunol.* 1992; 148(1):19-28. (Clone-specific: Flow cytometry)

Johnson P, Greenbaum L, Bottomly K, Trowbridge IS. Identification of the alternatively spliced exons of murine CD45 (T200) required for reactivity with B220 and other T200-restricted antibodies. *J Exp Med.* 1989; 169(3):1179-1184. (Clone-specific: Flow cytometry)

Powrie F, Correa-Oliveira R, Mauze S, Coffman RL. Regulatory interactions between CD45RBhigh and CD45RBlow CD4+ T cells are important for the balance between protective and pathogenic cell-mediated immunity. *J Exp Med.* 1994; 192(2):589-600. (Clone-specific: Flow cytometry, Fluorescence activated cell sorting)

Read S, Malmstrom V, Powrie F. Cytotoxic T lymphocyte-associated antigen 4 plays an essential role in the function of CD25(+)CD4(+) regulatory cells that control intestinal inflammation. *J Exp Med.* 2000; 192(2):295-302. (Clone-specific: Flow cytometry, Fluorescence activated cell sorting)

Rogers PR, Pilapil S, Hayakawa K, Romain PL, Parker DC. CD45 alternative exon expression in murine and human CD4+ T cell subsets. *J Immunol.* 1992; 148(12):4054-4065. (Clone-specific: Flow cytometry)



**BD Biosciences**

*bdbiosciences.com*

| United States | Canada | Europe | Japan | Asia Pacific | Latin America/Caribbean |
|---|---|---|---|---|---|
| 877.232.8995 | 800.979.9408 | 32.53.720.550 | 0120.8555.90 | 65.6861.0633 | 55.11.5185.9995 |

For country contact information, visit **bdbiosciences.com/contact**