

## Technical Data Sheet

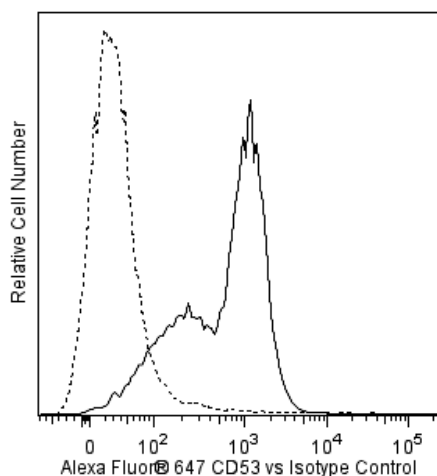
## Alexa Fluor® 647 Rat Anti-Mouse CD53

## Product Information

<b>Material Number:</b>	564931
<b>Alternate Name:</b>	Cd53: Ox-44; Tspan25; Tetraspanin-25
<b>Size:</b>	50 µg
<b>Concentration:</b>	0.2 mg/ml
<b>Clone:</b>	OX-79
<b>Immunogen:</b>	BAB/14 mouse macrophage cell line RAW 264
<b>Isotype:</b>	Rat (AO) IgM, κ
<b>Reactivity:</b>	QC Testing: Mouse
<b>Storage Buffer:</b>	Aqueous buffered solution containing protein stabilizer and ≤0.09% sodium azide.

## Description

The OX-79 antibody reacts with CD53, a 35-45-kDa member of the Transmembrane 4-pass protein superfamily (TM4SF). As in the human, mouse peripheral leukocytes express CD53 mRNA and protein, and erythrocytes and nonhematopoietic cells do not. However, the distribution of CD53 in the mouse and rat thymus differs from that in the human. In the mouse, most CD4+8- and major subsets of CD4- CD8- (double-negative) and CD4- CD8+ thymocytes express CD53, while most cortical CD4+ CD8+ (double-positive) thymocytes are CD53-low or CD53-negative. CD53 expression can be induced in double-positive thymocytes by cross-linking of their T-cell receptors with anti-TCR mAb or peptide-pulsed antigen-presenting cells. There is a strong correlation between positive selection of thymocytes and CD53 expression. Its association with CD2 and a tyrosine phosphatase in rat T lymphocytes and with CD19, CD21, HLA-DR, and other TM4SF proteins in human B lymphocytes suggests that CD53 is involved in leukocyte signal transduction.



**Flow cytometric analysis of CD53 expression on mouse splenocytes.** Mouse splenic leukocytes 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 Mouse IgM, κ Isotype Control (Cat. No. 560892; dashed line histogram) or Alexa Fluor® 647 Rat Anti-Mouse CD53 antibody (Cat. No. 564931; solid line histogram). The fluorescence histogram showing CD53 expression (or Ig isotype control staining) was derived from gated events with the forward and side light-scatter characteristics of viable leukocytes. Flow cytometric analysis was performed using a BD LSRFortessa™ Cell Analyzer 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

## BD Biosciences

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## Suggested Companion Products

Catalog Number	Name	Size	Clone
554656	Stain Buffer (FBS)	500 mL	(none)
554657	Stain Buffer (BSA)	500 mL	(none)
560892	Alexa Fluor® 647 Rat IgM, κ Isotype Control	0.1 mg	R4-22
555899	Lysing Buffer	100 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

## Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. An isotype control should be used at the same concentration as the antibody of interest.
3. 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.
4. 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.
5. Alexa Fluor® is a registered trademark of Molecular Probes, Inc., Eugene, OR.
6. Alexa Fluor® 647 fluorochrome emission is collected at the same instrument settings as for allophycocyanin (APC).
7. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at [www.bdbiosciences.com/colors](http://www.bdbiosciences.com/colors).
8. Please refer to [www.bdbiosciences.com/pharming/protocols](http://www.bdbiosciences.com/pharming/protocols) for technical protocols.

## References

Angelisová P, Hilgert I, Horejsí V. Association of four antigens of the tetraspans family (CD37, CD53, TAPA-1, and R2/C33) with MHC class II glycoproteins. *Immunogenetics*. 1994; 39(4):249-256. (Biology)

Carmo AM, Wright MD. Association of the transmembrane 4 superfamily molecule CD53 with a tyrosine phosphatase activity. *Eur J Immunol*. 1995; 25(7):2090-2095. (Biology)

Puls KL, Hogquist KA, Reilly N, Wright MD. CD53, a thymocyte selection marker whose induction requires a lower affinity TCR-MHC interaction than CD69, but is up-regulated with slower kinetics. *Int Immunol*. 2002; 14(3):249-258. (Biology)

Tomlinson MG, Hanke T, Hughes DA, et al. Characterization of mouse CD53: epitope mapping, cellular distribution and induction by T cell receptor engagement during repertoire selection. *Eur J Immunol*. 1995; 25(8):2201-2205. (Immunogen: Western blot)

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