

## Datasheet: MCA1031SBV440

**BATCH NUMBER 64670640**

<b>Description:</b>	RAT ANTI MOUSE CD45:StarBright Violet 440
<b>Specificity:</b>	CD45
<b>Other names:</b>	LCA
<b>Format:</b>	StarBright Violet 440
<b>Product Type:</b>	Monoclonal Antibody
<b>Clone:</b>	YW62.3
<b>Isotype:</b>	IgG2b
<b>Quantity:</b>	100 TESTS/0.5ml

### Product Details

#### Applications

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit [www.bio-rad-antibodies.com/protocols](http://www.bio-rad-antibodies.com/protocols).

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry	▪			Neat

Where this product has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the product for use in their own system using appropriate negative/positive controls.

<b>Target Species</b>	Mouse						
<b>Product Form</b>	Purified IgG conjugated to StarBright Violet 440 - liquid						
<b>Max Ex/Em</b>	<table border="1"> <thead> <tr> <th>Fluorophore</th> <th>Excitation Max (nm)</th> <th>Emission Max (nm)</th> </tr> </thead> <tbody> <tr> <td>StarBright Violet 440</td> <td>383</td> <td>436</td> </tr> </tbody> </table>	Fluorophore	Excitation Max (nm)	Emission Max (nm)	StarBright Violet 440	383	436
Fluorophore	Excitation Max (nm)	Emission Max (nm)					
StarBright Violet 440	383	436					
<b>Preparation</b>	Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant						
<b>Buffer Solution</b>	Phosphate buffered saline						
<b>Preservative Stabilisers</b>	0.09% Sodium Azide (NaN <sub>3</sub> ) 1% Bovine Serum Albumin 0.1% Pluronic F68 0.1% PEG 3350						

0.05% Tween 20

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<b>Approx. Protein Concentrations</b>	For information on the concentration of our StarBright Dye conjugated reagents please visit our <a href="#">FAQ</a> page.
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<b>Immunogen</b>	Mouse spleen cells.
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<b>External Database Links</b>	<b>UniProt:</b> <a href="#">P06800</a> <a href="#">Related reagents</a>  <b>Entrez Gene:</b> <a href="#">19264</a> Ptprc <a href="#">Related reagents</a>
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<b>Synonyms</b>	Ly-5
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<b>Fusion Partners</b>	Spleen cells from immunised DA rats were fused with cells of the rat Y3/Ag1.2.3 myeloma cell line.
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<b>Specificity</b>	<p><b>Rat anti Mouse CD45 antibody, clone YW62.3</b> recognizes the murine CD45 cell surface antigen, a single pass type1 transmembrane glycoprotein also known as protein tyrosine phosphatase receptor type C (PTPRC) and originally termed Leucocyte Common Antigen (LCA). CD45 is a 180-220kDa glycoprotein expressed by all leucocytes.</p> <p>CD45 is encoded by 3 alleles in mice, differentially expressed by various inbred strains. The Ly5 gene was originally described with the gene product LY5.1 expressed in C57bl/6 and Ly5.2 expressed in SJL strains (<a href="#">Komura et al. 1975</a>), this was subsequently expanded to include a third allele encoding Ly5.3 (<a href="#">Shen et al. 1986</a>). Further, in 1987 a reversal of nomenclature was instigated resulting in the allele in C57bl/6 becoming Ly5<sup>b</sup> encoding Ly5.2 and the allele in SJL mice becoming Ly5<sup>a</sup> encoding Ly5.1 (<a href="#">Morse et al. 1987</a>). Further changes were made in 1992 with Ly5.1 becoming CD45.1 (SJL) and Ly5.2 becoming CD45.2 (C57bl/6). Finally, following work demonstrating homology between the CD45 antigen and a receptor linked protein tyrosine phosphatase the CD45<sup>a</sup> gene was renamed Ptprc<sup>a</sup> and CD45<sup>b</sup> renamed Ptprc<sup>b</sup> (<a href="#">Charbonneau et al. 1988</a>; <a href="#">Zebedee et al. 1991</a>).</p> <p>A number of different isoforms of CD45 are expressed on murine leucocytes depending on the pattern of alternative splicing of 3 exons termed A, B and C encoding regions of ~ 50 amino acids located at the N terminal region of the extracellular portion of CD45. The restricted proteins are termed CD45R with a designation depending on the expressed codon product. (<a href="#">Birkeland et al. 1989</a>).</p> <p>Rat anti mouse CD45 antibody, clone YW62.3 is reactive with all isoforms of murine CD45.</p> <p>N.B. Some reactivity with human tissue has been observed.</p>
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<b>Flow Cytometry</b>	Use 5µl of the suggested working dilution to label 10 <sup>6</sup> cells in 100µl. Best practices
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suggest a 5 minutes centrifugation at 6,000g prior to sample application.

## References

1. Watt, S.M. *et al.* (1987) Cell-surface markers on haemopoietic precursors. Reagents for the isolation and analysis of progenitor cell subpopulations. [Mol Cell Probes. 1 \(4\): 297-326.](#)
2. Kondo, Y. *et al.* (2007) Osteopetrotic (op/op) mice have reduced microglia, no A $\beta$  deposition, and no changes in dopaminergic neurons. [J Neuroinflammation. 4: 31.](#)
3. Wang, S. *et al.* (2008) Drak2 contributes to West Nile virus entry into the brain and lethal encephalitis. [J Immunol. 181: 2084-91.](#)
4. Chan, D.A. *et al.* (2009) Tumor vasculature is regulated by PHD2-mediated angiogenesis and bone marrow-derived cell recruitment. [Cancer Cell. 15: 527-38.](#)
5. Lee, S. *et al.* (2010) CX3CR1 deficiency alters microglial activation and reduces beta-amyloid deposition in two Alzheimer's disease mouse models. [Am J Pathol. 177: 2549-62.](#)
6. Dénes, A. *et al.* (2010) Chronic systemic infection exacerbates ischemic brain damage via a CCL5 (regulated on activation, normal T-cell expressed and secreted)-mediated proinflammatory response in mice. [J Neurosci. 30: 10086-95.](#)
7. Yoshizaki, A. *et al.* (2010) Cell adhesion molecules regulate fibrotic process via Th1/Th2/Th17 cell balance in a bleomycin-induced scleroderma model. [J Immunol. 185: 2502-15.](#)
8. Yang, J. *et al.* (2010) Evaluation of bone marrow- and brain-derived neural stem cells in therapy of central nervous system autoimmunity. [Am J Pathol. 177: 1989-2001.](#)
9. Yang, R. *et al.* (2010) Successful treatment of experimental glomerulonephritis with IdeS and EndoS, IgG-degrading streptococcal enzymes. [Nephrol Dial Transplant. 25: 2479-86.](#)
10. Reed-Geaghan, E.G. *et al.* (2010) Deletion of CD14 attenuates Alzheimer's disease pathology by influencing the brain's inflammatory milieu. [J Neurosci. 30: 15369-73.](#)
11. Paz, H. *et al.* (2010) The homeobox gene Hhex regulates the earliest stages of definitive hematopoiesis. [Blood. 116: 1254-62.](#)
12. Lee, D.C. *et al.* (2010) LPS- induced inflammation exacerbates phospho-tau pathology in rTg4510 mice. [J Neuroinflammation. 7: 56.](#)
13. Lebson, L. *et al.* (2010) Trafficking CD11b-positive blood cells deliver therapeutic genes to the brain of amyloid-depositing transgenic mice. [J Neurosci. 30: 9651-8.](#)
14. Long, G.G. *et al.* (2010) Hematopoietic Proliferative Lesions in the Spleen of rasH2 Transgenic Mice Treated with MNU. [Toxicol Pathol. 38: 1026-36.](#)
15. Drake, C. *et al.* (2011) Brain inflammation is induced by co-morbidities and risk factors for stroke. [Brain Behav Immun. 25: 1113-22.](#)
16. Jawhara, S. *et al.* (2012) Integrin  $\alpha\text{X}\beta_2$  is a leukocyte receptor for *Candida albicans* and is essential for protection against fungal infections. [J Immunol. 189 \(5\): 2468-77.](#)
17. Mills, J.H. *et al.* (2012) A2A adenosine receptor signaling in lymphocytes and the central nervous system regulates inflammation during experimental autoimmune encephalomyelitis. [J Immunol. 188 \(11\): 5713-22.](#)
18. Zirger, J.M. *et al.* (2012) Immune-mediated loss of transgene expression from virally transduced brain cells is irreversible, mediated by IFN $\gamma$ , perforin, and TNF $\alpha$ , and due to the elimination of transduced cells. [Mol Ther. 20 \(4\): 808-19.](#)
19. Yamauchi, S. *et al.* (2012) Myosin II-dependent exclusion of CD45 from the site of Fc $\gamma$  receptor activation during phagocytosis. [FEBS Lett. 586: 3229-35.](#)

20. Abramowski, D. *et al.* (2012) Transgenic Expression of Intraneuronal A $\beta$ 42 But Not A $\beta$ 40 Leads to Cellular A $\beta$  Lesions, Degeneration, and Functional Impairment without Typical Alzheimer's Disease Pathology. [J Neurosci. 32: 1273-83.](#)
21. Chu, C.J. *et al.* (2013) Assessment and *in vivo* scoring of murine experimental autoimmune uveoretinitis using optical coherence tomography. [PLoS One. 8 \(5\): e63002.](#)
22. Murinello, S. *et al.* (2014) Fc $\gamma$  receptor upregulation is associated with immune complex inflammation in the mouse retina and early age-related macular degeneration. [Invest Ophthalmol Vis Sci. 55 \(1\): 247-58.](#)
23. Yazid, S. *et al.* (2015) Annexin-A1 restricts Th17 cells and attenuates the severity of autoimmune disease. [J Autoimmun. 58: 1-11.](#)
24. Benson, C. *et al.* (2015) Voluntary wheel running delays disease onset and reduces pain hypersensitivity in early experimental autoimmune encephalomyelitis (EAE). [Exp Neurol. 271: 279-90.](#)
25. Carbajal, K.S. *et al.* (2015) Th Cell Diversity in Experimental Autoimmune Encephalomyelitis and Multiple Sclerosis. [J Immunol. 195 \(6\): 2552-9.](#)
26. Kan, M.J. *et al.* (2015) Arginine deprivation and immune suppression in a mouse model of Alzheimer's disease. [J Neurosci. 35 \(15\): 5969-82.](#)
27. Marcos, E. *et al.* (2016) Dengue encephalitis-associated immunopathology in the mouse model: Implications for vaccine developers and antigens inducer of cellular immune response. [Immunol Lett. 176: 51-6.](#)
28. Haile, W.B. *et al.* (2016) The Janus kinase inhibitor ruxolitinib reduces HIV replication in human macrophages and ameliorates HIV encephalitis in a murine model. [Neurobiol Dis. 92 \(Pt B\): 137-43.](#)
29. Park, S.A. *et al.* (2016) Deficiency in either COX-1 or COX-2 genes does not affect amyloid beta protein burden in amyloid precursor protein transgenic mice. [Biochem Biophys Res Commun. 478 \(1\): 286-92.](#)
30. Srivastava, A.K. *et al.* (2016) Co-transplantation of syngeneic mesenchymal stem cells improves survival of allogeneic glial-restricted precursors in mouse brain. [Exp Neurol. 275 Pt 1: 154-61.](#)
31. Zhu, C. *et al.* (2020) Antinociceptive effect of intrathecal injection of miR-9-5p modified mouse bone marrow mesenchymal stem cells on a mouse model of bone cancer pain. [J Neuroinflammation. 17 \(1\): 85.](#)
32. Hargreaves, A. *et al.* (2021) Tumors modulate fenestrated vascular beds and host endocrine status. [J Appl Toxicol. 41 \(12\): 1952-65.](#)
33. Filograna, R. *et al.* (2021) Mitochondrial dysfunction in adult midbrain dopamine neurons triggers an early immune response. [PLoS Genet. 17 \(9\): e1009822.](#)
34. Hargreaves, A. *et al.* (2022) Tumours modulate the systemic vascular response to anti-angiogenic therapy. [J Appl Toxicol. 42 \(8\): 1371-84.](#)
35. Chen, Y.H. *et al.* (2020) Functionally distinct IFN- $\gamma$ (+) IL-17A(+) Th cells in experimental autoimmune uveitis: T-cell heterogeneity, migration, and steroid response. [Eur J Immunol. 50 \(12\): 1941-51.](#)
36. Lepland, A. *et al.* (2024) Therapeutic Tumor Macrophage Reprogramming in Breast Cancer Through a Peptide-Drug Conjugate [bioRxiv: 12 Aug \[Epub ahead of print\].](#)

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**Storage**

Store at +4°C. DO NOT FREEZE.

This product should be stored undiluted.

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<b>Guarantee</b>	12 months from date of despatch
<b>Acknowledgements</b>	This product is covered by U.S. Patent No. 10,150,841 and related U.S. and foreign counterparts.
<b>Health And Safety Information</b>	Material Safety Datasheet documentation #20471 available at: <a href="https://www.bio-rad-antibodies.com/SDS/MCA1031SBV440">https://www.bio-rad-antibodies.com/SDS/MCA1031SBV440</a>
<b>Regulatory</b>	For research purposes only

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### Recommended Useful Reagents

[MOUSE SEROBLOCK FcR \(BUF041A\)](#)

[MOUSE SEROBLOCK FcR \(BUF041B\)](#)

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