Datasheet: MCA1031SBB615

BATCH NUMBER 100006820

Description:	RAT ANTI MOUSE CD45:StarBright Blue 615
Specificity:	CD45
Other names:	LCA
Format:	StarBright Blue 615
Product Type:	Monoclonal Antibody
Clone:	YW62.3
Isotype:	IgG2b
Quantity:	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.

	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.

Target Species

Mouse

Product Form

Purified IgG conjugated to StarBright Blue 615 - liquid

Max Ex/Em

Fluorophore	Excitation Max (nm)	Emission Max (nm)
StarBright Blue 615	475	612

Preparation

Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant

Buffer Solution

Phosphate buffered saline

Preservative Stabilisers

0.09% sodium azide (NaN_3)
1% bovine serum albumin.
0.1% Pluronic F68
0.1% PEG 3350.

	0.05% Tween 20
Immunogen	Mouse spleen cells.
External Database Links	**UniProt:** P06800 Related reagents **Entrez Gene:** 19264 Ptprc Related reagents
Synonyms	Ly-5
Fusion Partners	Spleen cells from immunised DA rats were fused with cells of the rat Y3/Ag1.2.3 myeloma cell line.

Specificity

Rat anti Mouse CD45 antibody, clone YW62.3 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.

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 (Komura *et al.* 1975), this was subsequently expanded to include a third allele encoding Ly5.3 (Shen *et al.* 1986). Further, in 1987 a reversal of nomenclature was instigated resulting in the allele in C57bl/6 becoming $Ly5^b$ encoding Ly5.2 and the allele in SJL mice becoming $Ly5^a$ encoding Ly5.1 (Morse *et al.* 1987). 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 $CD45^a$ gene was renamed $Ptprc^a$ and $CD45^b$ renamed $Ptprc^b$ (Charbonneau *et al.* 1988; Zebedee *et al.* 1991).

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. (Birkeland *et al.* 1989).

Rat anti mouse CD45 antibody, clone YW62.3 is reactive with all isoforms of murine CD45.

N.B. Some reactivity with human tissue has been observed.

Flow Cytometry

Use 5µl of the suggested working dilution to label 10^6 cells in 100µl. Best practices 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 Abeta 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 $\alpha X\beta_Z$ 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 IFNγ, perforin, and TNFα, 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 Fcγ receptor activation during phagocytosis. FEBS Lett. 586: 3229-35.
20. Abramowski, D. *et al.* (2012) Transgenic Expression of Intraneuronal Aβ42 But Not Aβ40 Leads to Cellular Aβ 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) Fcγ 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-γ(+) 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 bioRχiv: 12 Aug [Epub ahead of print].

Storage	Store at +4°C. DO NOT FREEZE. This product should be stored undiluted.
Guarantee	12 months from date of despatch
Acknowledgements	This product is covered by U.S. Patent No. 10,150,841 and related U.S. and foreign counterparts

Health And Safety Information	Material Safety Datasheet documentation #20471 available at: https://www.bio-rad-antibodies.com/SDS/MCA1031SBB615
Regulatory	For research purposes only

Related Products

Recommended Useful Reagents

MOUSE SEROBLOCK FcR (BUF041A)
MOUSE SEROBLOCK FcR (BUF041B)

Product inquiries: www.bio-rad-antibodies.com/technical-support

To find a batch/lot specific datasheet for this product, please use our online search tool at: bio-rad-antibodies.com/datasheets

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