Datasheet: MCA711SBV760

BATCH NUMBER 100006607

Description:	RAT ANTI MOUSE CD11b:StarBright Violet 760
Specificity:	CD11b
Other names:	INTEGRIN ALPHA M CHAIN, MAC-1
Format:	StarBright Violet 760
Product Type:	Monoclonal Antibody
Clone:	5C6
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

Species Cross Reactivity

Reacts with: Human

N.B. Antibody reactivity and working conditions may vary between species. Cross reactivity is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information.

Product Form

Purified IgG conjugated to StarBright Violet 760 - liquid

Max Ex/Em

Fluorophore	Excitation Max (nm)	Emission Max (nm)
StarBright Violet 760	403	754

Preparation

Purified IgG prepared by ion exchange chromatography

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	Thioglycollate-elicited peritoneal macrophages (TPM)
External Database Links	**UniProt:** P05555 Related reagents **Entrez Gene:** 16409 Itgam Related reagents
Fusion Partners	Spleen cells from AO rats were fused with cells of the Y3 rat myeloma cell line
Specificity	**Rat anti Mouse CD11b antibody, clone 5C6** recognizes CD11b, also known as the integrin alpha M chain. CD11b is implicated in various adhesive interactions of monocytes, macrophages and granulocytes as well as in mediating the uptake of complement-coated particles. Rat anti Mouse CD11b antibody, clone 5C6 immunoprecipitates a heterodimer of ~165 and ~95 kDa. This clone also exhibits various functional properties, reportedly inhibiting adhesion *in vitro* and inflammatory recruitment *in vivo*. Rat anti Mouse CD11b antibody, clone 5C6 also inhibits delayed hypersensitivity, potentiates bacterial infections and inhibits type 1 diabetes.
Flow Cytometry	Use 5ul of the suggested working dilution to label 10^6 cells in 100ul. Best practices suggest a 5 minutes centrifugation at 6,000g prior to sample application.

References

1. Rosen, H. and Gordon, S. (1987) Monoclonal antibody to the murine type 3 complement receptor inhibits adhesion of myelomonocytic cells in vitro and inflammatory cell recruitment in vivo. J Exp Med. 166: 1685-701.
2. Rosen, H. *et al.* (1989) Antibody to the murine type 3 complement receptor inhibits T lymphocyte-dependent recruitment of myelomonocytic cells *in vivo*. J Exp Med. 169: 535-48.
3. Devey, L. *et al.* (2008) Tissue-resident Macrophages protect the Liver From Ischemia Reperfusion Injury via a Heme Oxygenase-1-Dependent mechanism. Mol Ther. 1: 65-72.
4. Khorooshi, R. *et al.* (2008) NF-kappaB-driven STAT2 and CCL2 expression in astrocytes in response to brain injury. J Immunol.181: 7284-91.
5. Hickman, S.E. *et al.* (2008) Microglial dysfunction and defective beta-amyloid clearance pathways in aging Alzheimer's disease mice. J Neurosci. 28 (33): 8354-60.
6. Tysseling, V.M.*et al.* (2011) SDF1 in the dorsal corticospinal tract promotes CXCR4+ cell migration after spinal cord injury. J Neuroinflammation. 8:16.
7. Wu, T. *et al.* (2011) Expression and cellular localization of cyclooxygenases and prostaglandin E synthases in the hemorrhagic brain. J Neuroinflammation. 8:22.
8. Basso, A.S. *et al.* (2008) Reversal of axonal loss and disability in a mouse model of

progressive multiple sclerosis. J Clin Invest. 118: 1532-43.
9. Clausen, B.H. *et al.* (2008) Interleukin-1beta and tumor necrosis factor-alpha are expressed by different subsets of microglia and macrophages after ischemic stroke in mice. J Neuroinflammation. 5: 46.
10. Terwel, D. *et al.* (2011) Critical Role of Astroglial Apolipoprotein E and Liver X Receptor-{alpha} Expression for Microglial A{beta} Phagocytosis. J Neurosci. 31: 7049-59.
11. McDonald, J.U. *et al.* (2011) *In vivo* functional analysis and genetic modification of *in vitro*-derived mouse neutrophils. FASEB J. 25: 1972-82.
12. Heydenreich, N. *et al.* (2012) C1-inhibitor protects from brain ischemia-reperfusion injury by combined antiinflammatory and antithrombotic mechanisms. Stroke. 43 (9): 2457-67.
13. Sato, A. *et al.* (2012) Interleukin-1 participates in the classical and alternative activation of microglia/macrophages after spinal cord injury. J Neuroinflammation. 9: 65.
14. Carenini, S. *et al.* (2001) The role of macrophages in demyelinating peripheral nervous system of mice heterozygously deficient in p0. J Cell Biol. 152: 301-8.
15. Lu, J. *et al.* (2010) Ursolic acid attenuates D-galactose-induced inflammatory response in mouse prefrontal cortex through inhibiting AGEs/RAGE/NF-κB pathway activation. Cereb Cortex. 20: 2540-8.
16. Halle, A. *et al.* (2008) The NALP3 inflammasome is involved in the innate immune response to amyloid-beta. Nat Immunol. 9: 857-65.
17. Traka, .M. *et al* (2010) A genetic mouse model of adult-onset, pervasive central nervous system demyelination with robust remyelination. Brain. 133: 3017-29.
18. Yamanaka M *et al.* (2012) PPARγ/RXRα-induced and CD36-mediated microglial amyloid-β phagocytosis results in cognitive improvement in amyloid precursor protein/presenilin 1 mice. J Neurosci. 32 (48): 17321-31.
19. Babcock, A.A. *et al.* (2015) Cytokine-producing microglia have an altered beta-amyloid load in aged APP/PS1 Tg mice. Brain Behav Immun. 48: 86-101.
20. Bisht K *et al.* (2016) Dark microglia: A new phenotype predominantly associated with pathological states. Glia. Feb 5. [Epub ahead of print]
21. Shinohara M *et al.* (2016) APOE2 eases cognitive decline during aging: clinical and preclinical evaluations. Ann Neurol. Mar 2. [Epub ahead of print]
22. Mencl, S. *et al.* (2014) FTY720 does not protect from traumatic brain injury in mice despite reducing posttraumatic inflammation. J Neuroimmunol. 274 (1-2): 125-31.
23. Liu, Z. *et al.* (2016) Transforming growth factor-β1 acts via TβR-I on microglia to protect against MPP(+)-induced dopaminergic neuronal loss. Brain Behav Immun. 51: 131-43.
24. Tachibana, M. *et al.* (2016) Rescuing effects of RXR agonist bexarotene on aging-related synapse loss depend on neuronal LRP1. Exp Neurol. 277: 1-9.
25. Kami, K. *et al.* (2016) Histone acetylation in microglia contributes to exercise-induced hypoalgesia in neuropathic pain model mice. J Pain. Feb 1. pii: S1526-5900(16)00502-2. [Epub ahead of print]
26. Sun, H. *et al.* (2016) Aquaporin-4 mediates communication between astrocyte and microglia: Implications of neuroinflammation in experimental Parkinson's disease. Neuroscience. 317: 65-75.
27. Ye, M. *et al.* (2016) Neuroprotective effects of bee venom phospholipase A2 in the 3xTg AD mouse model of Alzheimer's disease. J Neuroinflammation. 13 (1): 10.
28. Hristova M *et al.* (2016) Inhibition of Signal Transducer and Activator of Transcription 3

(STAT3) reduces neonatal hypoxic-ischaemic brain damage. J Neurochem. 136 (5): 981-994.
29. Kaindlstorfer, C. *et al.* (2015) Failure of Neuroprotection Despite Microglial Suppression by Delayed-Start Myeloperoxidase Inhibition in a Model of Advanced Multiple System Atrophy: Clinical Implications. Neurotox Res. 28 (3): 185-94.
30. Natrajan, M.S. *et al.* (2015) Retinoid X receptor activation reverses age-related deficiencies in myelin debris phagocytosis and remyelination. Brain. 138 (Pt 12): 3581-97.
31. Saura, J. (2007) Microglial cells in astroglial cultures: a cautionary note. J Neuroinflammation. 4: 26.
32. Crépeaux, G. *et al.* (2017) Non-linear dose-response of aluminium hydroxide adjuvant particles: Selective low dose neurotoxicity. Toxicology. 375: 48-57.
33. Nagai, J. *et al.* (2016) Inhibition of CRMP2 phosphorylation repairs CNS by regulating neurotrophic and inhibitory responses. Exp Neurol. 277: 283-95.
34. Garcia-Mesa Y *et al.* (2016) Immortalization of primary microglia: a new platform to study HIV regulation in the central nervous system. J Neurovirol. Nov 21. [Epub ahead of print]
35. Rabl R *et al.* (2017) Early start of progressive motor deficits in Line 61 α-synuclein transgenic mice. BMC Neurosci. 18 (1): 22.
36. Mittal, A. *et al.* (2003) CD11b+ cells are the major source of oxidative stress in UV radiation-irradiated skin: possible role in photoaging and photocarcinogenesis. Photochem Photobiol. 77 (3): 259-64.
37. Schuhmann, M.K. *et al.* (2017) Blocking of platelet glycoprotein receptor Ib reduces "thrombo-inflammation" in mice with acute ischemic stroke. J Neuroinflammation. 14 (1): 18.
38. Laurent, C. *et al.* (2017) Hippocampal T cell infiltration promotes neuroinflammation and cognitive decline in a mouse model of tauopathy. Brain. 140 (Pt 1): 184-200.
39. Lu, Y. *et al.* (2016) Annexin A10 is involved in the development and maintenance of neuropathic pain in mice. Neurosci Lett. 631: 1-6.
40. Thomsen, M.S. *et al.* (2017) Synthesis and deposition of basement membrane proteins by primary brain capillary endothelial cells in a murine model of the blood-brain barrier. J Neurochem. 140 (5): 741-754.
41. Pulido-Salgado, M. *et al.* (2017) Myeloid C/EBPβ deficiency reshapes microglial gene expression and is protective in experimental autoimmune encephalomyelitis. J Neuroinflammation. 14 (1): 54.
42. Paizs, M. *et al.* (2017) Axotomy Leads to Reduced Calcium Increase and Earlier Termination of CCL2 Release in Spinal Motoneurons with Upregulated Parvalbumin Followed by Decreased Neighboring Microglial Activation. CNS Neurol Disord Drug Targets. 16 (3): 356-67.
43. Myhre, C.L. *et al.* (2019) Microglia Express Insulin-Like Growth Factor-1 in the Hippocampus of Aged $APP_{swe}/PS1_{\Delta E9}$ Transgenic Mice. Front Cell Neurosci. 13: 308.
44. Hilla, A.M. *et al.* (2017) Microglia Are Irrelevant for Neuronal Degeneration and Axon Regeneration after Acute Injury. J Neurosci. 37 (25): 6113-24.
45. Ellman, D.G. *et al.* (2020) Conditional Ablation of Myeloid TNF Improves Functional Outcome and Decreases Lesion Size after Spinal Cord Injury in Mice. Cells. 9 (11)Nov 03 [Epub ahead of print].
46. Madore, C. *et al.* (2020) Essential omega-3 fatty acids tune microglial phagocytosis of synaptic elements in the mouse developing brain. Nat Commun. 11 (1): 6133.

47. Wi, R. *et al.* (2020) Functional Crosstalk between CB and TRPV1 Receptors Protects Nigrostriatal Dopaminergic Neurons in the MPTP Model of Parkinson's Disease. J Immunol Res. 2020: 5093493.
48. Potì, F. *et al.* (2020) Impact of S1P Mimetics on Mesenteric Ischemia/Reperfusion Injury. Pharmaceuticals (Basel). 13 (10) 298.
49. Yang, P. *et al.* (2020) Suppression of cGMP-Dependent Photoreceptor Cytotoxicity With Mycophenolate Is Neuroprotective in Murine Models of Retinitis Pigmentosa. Invest Ophthalmol Vis Sci. 61 (10): 25.
50. Hauptmann, J. *et al.* (2020) Interleukin-1 promotes autoimmune neuroinflammation by suppressing endothelial heme oxygenase-1 at the blood-brain barrier. Acta Neuropathol. 140 (4): 549-67.
51. Yoshizaki, S. *et al.* (2021) Microglial inflammation after chronic spinal cord injury is enhanced by reactive astrocytes via the fibronectin/β1 integrin pathway. J Neuroinflammation. 18 (1): 12.
52. Elabi, O. *et al.* (2021) Human α-synuclein overexpression in a mouse model of Parkinson's disease leads to vascular pathology, blood brain barrier leakage and pericyte activation. Sci Rep. 11 (1): 1120.
53. Bernier, L.P. *et al.* (2019) Nanoscale Surveillance of the Brain by Microglia via cAMP-Regulated Filopodia. Cell Rep. 27 (10): 2895-2908.e4.
54. Brunialti, E. *et al.* (2021) Inhibition of microglial GBA hampers the microglia-mediated anti-oxidant and protective response in neurons. bioRxiv 2021.01.20.427380 [Preprint]
55. Hou, L. *et al.* (2018) Taurine protects noradrenergic locus coeruleus neurons in a mouse Parkinson's disease model by inhibiting microglial M1 polarization. Amino Acids. 50 (5): 547-556.
56. Cope, E.C. *et al.* (2018) Microglia Play an Active Role in Obesity-Associated Cognitive Decline. J Neurosci. 38 (41): 8889-904.
57. Mouton-Liger, F. *et al.* (2018) Parkin deficiency modulates NLRP3 inflammasome activation by attenuating an A20-dependent negative feedback loop. Glia. 66 (8): 1736-51.
58. Di Benedetto, G. *et al.* (2019) Beneficial effects of curtailing immune susceptibility in an Alzheimer's disease model. J Neuroinflammation. 16 (1): 166.
59. Gomez-Nicola, D. *et al.* (2019) Measuring Microglial Turnover in the Adult Brain. Methods Mol Biol. 2034: 207-15.
60. Zheng, J. *et al.* (2018) Evaluation of metastatic niches in distant organs after surgical removal of tumor-bearing lymph nodes. BMC Cancer. 18 (1): 608.
61. Soto, M. *et al.* (2018) Gut microbiota modulate neurobehavior through changes in brain insulin sensitivity and metabolism. Mol Psychiatry. 23 (12): 2287-2301.
62. Song, S. *et al.* (2019) Noradrenergic dysfunction accelerates LPS-elicited inflammation-related ascending sequential neurodegeneration and deficits in non-motor/motor functions. Brain Behav Immun. 81: 374-87.
63. Da Ros, F. *et al.* (2017) Targeting Interleukin-1β Protects from Aortic Aneurysms Induced by Disrupted Transforming Growth Factor β Signaling. Immunity. 47 (5): 959-973.e9.
64. Tunesi, M. *et al.* (2019) Hydrogel-based delivery of Tat-fused protein Hsp70 protects dopaminergic cells in vitro and in a mouse model of Parkinson’s disease NPG Asia Materials. 11: 28.
65. Mañucat-Tan, N. *et al.* (2021) Hypochlorite-induced aggregation of fibrinogen underlies a novel antioxidant role in blood plasma. Redox Biol. 40: 101847.

66. Brunialti, E. *et al.* (2021) Inhibition of microglial β-glucocerebrosidase hampers the microglia-mediated antioxidant and protective response in neurons. J Neuroinflammation. 18 (1): 220.
67. Liu, Z. *et al.* (2019) IL-17A exacerbates neuroinflammation and neurodegeneration by activating microglia in rodent models of Parkinson's disease. Brain Behav Immun. 81: 630-45.
68. Roberts, J.M. *et al.* (2018) Bilateral carotid artery stenosis causes unexpected early changes in brain extracellular matrix and blood-brain barrier integrity in mice. PLoS One. 13 (4): e0195765.
69. Ji, N. *et al.* (2022) VSIG4 Attenuates NLRP3 and Ameliorates Neuroinflammation via JAK2-STAT3-A20 Pathway after Intracerebral Hemorrhage in Mice. Neurotox Res. 40 (1): 78-88.
70. Spitzel, M. *et al.* (2022) Dysregulation of Immune Response Mediators and Pain-Related Ion Channels Is Associated with Pain-like Behavior in the GLA KO Mouse Model of Fabry Disease. Cells. 11 (11): 1730.

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/MCA711SBV760 20471
Regulatory	For research purposes only

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Recommended Useful Reagents

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MOUSE SEROBLOCK FcR (BUF041B)

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Worldwide Tel: +44 (0)1865 852 700 Fax: +44 (0)1865 852 739 Email: antibody_sales_uk@bio-rad.com
Europe Tel: +49 (0) 89 8090 95 21 Fax: +49 (0) 89 8090 95 50 Email: antibody_sales_de@bio-rad.com

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