

Datasheet: MCA711SBUV510 BATCH NUMBER 100006304

| Description: | RAT ANTI MOUSE CD11b:StarBright UltraViolet 510 | | |
|---------------|-------------------------------------------------|--|--|
| Specificity: | CD11b | | |
| Other names: | INTEGRIN ALPHA M CHAIN, MAC-1 | | |
| Format: | StarBright UltraViolet 510 | | |
| Product Type: | Monoclonal Antibody | | |
| Clone: | 5C6 | | |
| lsotype: | lgG2b | | |
| 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 <u>www.bio-rad-antibodies.com/protocols</u> . | | | | |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------|--------------------|--|
| | | 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 UltraViolet 510 - liquid | | | | |
| Max Ex/Em | Fluorophore | Excitation Max (nn |) Emission Max (nm) | | |
| | StarBright UltraViolet 510 | 340 | 513 | | |
| Preparation | Purified IgG prepared | by ion exchange ch | romatography | | |

| 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: <u>P05555</u> <u>Related reagents</u> Entrez Gene: <u>16409</u> Itgam <u>Related reagents</u> |
| 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 <i>in vitro</i> and inflammatory recruitment <i>in vivo</i> . 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 | 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. Rosen, H. <i>et al.</i> (1989) Antibody to the murine type 3 complement receptor inhibits T lymphocyte-dependent recruitment of myelomonocytic cells <i>in vivo</i>. J Exp Med. 169: 535-48. Devey, L. <i>et al.</i> (2008) Tissue-resident Macrophages protect the Liver From Ischemia Reperfusion Injury via a Heme Oxygenase-1-Dependent mechanism. Mol Ther. 1: 65-72. Khorooshi, R. <i>et al.</i> (2008) NF-kappaB-driven STAT2 and CCL2 expression in astrocytes in response to brain injury. J Immunol.181: 7284-91. Hickman, S.E. <i>et al.</i> (2008) Microglial dysfunction and defective beta-amyloid clearance pathways in aging Alzheimer's disease mice. J Neurosci. 28 (33): 8354-60. Tysseling, V.M.<i>et al.</i> (2011) SDF1 in the dorsal corticospinal tract promotes CXCR4+ cell migration after spinal cord injury. J Neuroinflammation. 8:16. Wu, T. <i>et al.</i> (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. <u>J Clin Invest. 118: 1532-43.</u>

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. <u>J Neuroinflammation. 5: 46.</u>

 Terwel, D. *et al.* (2011) Critical Role of Astroglial Apolipoprotein E and Liver X Receptor-{alpha} Expression for Microglial A{beta} Phagocytosis. <u>J Neurosci. 31: 7049-59</u>.
 McDonald, J.U. *et al.* (2011) *In vivo* functional analysis and genetic modification of *in vitro*-derived mouse neutrophils. <u>FASEB J. 25: 1972-82</u>.

12. Heydenreich, N. *et al.* (2012) C1-inhibitor protects from brain ischemia-reperfusion injury by combined antiinflammatory and antithrombotic mechanisms. <u>Stroke. 43 (9):</u> 2457-67.

Sato, A. *et al.* (2012) Interleukin-1 participates in the classical and alternative activation of microglia/macrophages after spinal cord injury. <u>J Neuroinflammation. 9: 65.</u>
 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. <u>Nat Immunol. 9: 857-65.</u>

17. Traka, .M. *et al* (2010) A genetic mouse model of adult-onset, pervasive central nervous system demyelination with robust remyelination. <u>Brain. 133: 3017-29.</u>

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. <u>Ann Neurol. Mar 2. [Epub ahead of print]</u>

22. Mencl, S. *et al.* (2014) FTY720 does not protect from traumatic brain injury in mice despite reducing posttraumatic inflammation. <u>J Neuroimmunol. 274 (1-2): 125-31.</u>

23. Liu, Z. *et al.* (2016) Transforming growth factor- β 1 acts via T β R-I on microglia to protect against MPP(+)-induced dopaminergic neuronal loss. <u>Brain Behav Immun. 51:</u> 131-43.

24. Tachibana, M. *et al.* (2016) Rescuing effects of RXR agonist bexarotene on aging-related synapse loss depend on neuronal LRP1. <u>Exp Neurol. 277: 1-9.</u>

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. <u>Neuroscience. 317: 65-75.</u>

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. <u>J Neurochem. 136 (5):</u> 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. <u>Neurotox Res. 28 (3): 185-94.</u>

30. Natrajan, M.S. *et al.* (2015) Retinoid X receptor activation reverses age-related deficiencies in myelin debris phagocytosis and remyelination. <u>Brain. 138 (Pt 12): 3581-97.</u>

31. Saura, J. (2007) Microglial cells in astroglial cultures: a cautionary note. J <u>Neuroinflammation. 4: 26.</u>

32. Crépeaux, G. *et al.* (2017) Non-linear dose-response of aluminium hydroxide adjuvant particles: Selective low dose neurotoxicity. <u>Toxicology. 375: 48-57.</u>

33. Nagai, J. *et al.* (2016) Inhibition of CRMP2 phosphorylation repairs CNS by regulating neurotrophic and inhibitory responses. <u>Exp Neurol. 277: 283-95.</u>

34. Garcia-Mesa Y *et al.* (2016) Immortalization of primary microglia: a new platform to study HIV regulation in the central nervous system. <u>J Neurovirol. Nov 21. [Epub ahead of print]</u>

35. Rabl R *et al.* (2017) Early start of progressive motor deficits in Line 61 α -synuclein transgenic mice. <u>BMC Neurosci. 18 (1): 22.</u>

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. <u>Photochem</u> <u>Photobiol. 77 (3): 259-64.</u>

37. Schuhmann, M.K. *et al.* (2017) Blocking of platelet glycoprotein receptor lb reduces "thrombo-inflammation" in mice with acute ischemic stroke. <u>J Neuroinflammation. 14 (1):</u> 18.

38. Laurent, C. *et al.* (2017) Hippocampal T cell infiltration promotes neuroinflammation and cognitive decline in a mouse model of tauopathy. <u>Brain. 140 (Pt 1): 184-200.</u>

39. Lu, Y. *et al.* (2016) Annexin A10 is involved in the development and maintenance of neuropathic pain in mice. <u>Neurosci Lett. 631: 1-6.</u>

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. <u>J Neurochem. 140 (5): 741-754.</u>

41. Pulido-Salgado, M. *et al.* (2017) Myeloid C/EBP β deficiency reshapes microglial gene expression and is protective in experimental autoimmune encephalomyelitis. <u>J</u> <u>Neuroinflammation. 14 (1): 54.</u>

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. <u>CNS Neurol Disord Drug</u> <u>Targets. 16 (3): 356-67.</u>

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. <u>Front Cell Neurosci. 13: 308.</u> 44. Hilla, A.M. *et al.* (2017) Microglia Are Irrelevant for Neuronal Degeneration and Axon Regeneration after Acute Injury. <u>J Neurosci. 37 (25): 6113-24.</u>

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. <u>Cells. 9 (11)Nov 03</u> [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. <u>Nat Commun. 11 (1): 6133.</u>

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. <u>Immunol Res. 2020: 5093493.</u>

48. Potì, F. *et al.* (2020) Impact of S1P Mimetics on Mesenteric Ischemia/Reperfusion Injury. <u>Pharmaceuticals (Basel). 13 (10) 298.</u>

49. Yang, P. *et al.* (2020) Suppression of cGMP-Dependent Photoreceptor Cytotoxicity With Mycophenolate Is Neuroprotective in Murine Models of Retinitis Pigmentosa. <u>Invest</u> <u>Ophthalmol Vis Sci. 61 (10): 25.</u>

50. Hauptmann, J. *et al.* (2020) Interleukin-1 promotes autoimmune neuroinflammation by suppressing endothelial heme oxygenase-1 at the blood-brain barrier. <u>Acta Neuropathol.</u> <u>140 (4): 549-67.</u>

51. Yoshizaki, S. *et al.* (2021) Microglial inflammation after chronic spinal cord injury is enhanced by reactive astrocytes via the fibronectin/ β 1 integrin pathway. <u>J</u> 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. <u>Sci Rep. 11 (1): 1120.</u>

53. Bernier, L.P. *et al.* (2019) Nanoscale Surveillance of the Brain by Microglia via cAMP-Regulated Filopodia. <u>Cell Rep. 27 (10): 2895-2908.e4.</u>

54. Brunialti, E. *et al.* (2021) Inhibition of microglial GBA hampers the microglia-mediated anti-oxidant and protective response in neurons. <u>bioRxiv 2021.01.20.427380 [Preprint]</u>
55. Hou, L. *et al.* (2018) Taurine protects noradrenergic locus coeruleus neurons in a

mouse Parkinson's disease model by inhibiting microglial M1 polarization. <u>Amino Acids.</u> <u>50 (5): 547-556.</u>

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. <u>Glia. 66 (8): 1736-51.</u>
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. <u>Methods Mol Biol. 2034</u>: 207-15.

60. Zheng, J. *et al.* (2018) Evaluation of metastatic niches in distant organs after surgical removal of tumor-bearing lymph nodes. <u>BMC Cancer. 18 (1): 608.</u>

61. Soto, M. *et al.* (2018) Gut microbiota modulate neurobehavior through changes in brain insulin sensitivity and metabolism. <u>Mol Psychiatry. 23 (12): 2287-2301.</u>

62. Song, S. *et al.* (2019) Noradrenergic dysfunction accelerates LPS-elicited inflammation-related ascending sequential neurodegeneration and deficits in non-motor/motor functions. <u>Brain Behav Immun. 81: 374-87.</u>

63. Da Ros, F. *et al.* (2017) Targeting Interleukin-1β Protects from Aortic Aneurysms Induced by Disrupted Transforming Growth Factor β Signaling. <u>Immunity. 47 (5)</u>: <u>959-973.e9</u>.

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 <u>NPG Asia</u> <u>Materials. 11: 28.</u>

| | 65. Mañucat-Tan, N. <i>et al.</i> (2021) Hypochlorite-induced aggregation of fibrinogen underlies | | |
|-------------------|---------------------------------------------------------------------------------------------------------------|--------------------------|--|
| | a novel antioxidant role in blood plasma. Redox Biol. 40: 1018 | | |
| | 66. Brunialti, E. <i>et al.</i> (2021) Inhibition of microglial β-glucocerebrosidase hampers the | | |
| | microglia-mediated antioxidant and protective response in neurons. <u>J Neuroinflammation</u> | | |
| | <u>18 (1): 220.</u> | | |
| | 67. Liu, Z. et al. (2019) IL-17A exacerbates neuroinflammation and neurodegeneration b | | |
| | activating microglia in rodent models of Parkinson's disease. <u>Brain Behav Immun. 81:</u> <u>630-45.</u> | | |
| | 68. Roberts, J.M. <i>et al.</i> (2018) Bilateral carotid artery stenosis causes unexpected early | | |
| | changes in brain extracellular matrix and blood-brain barrier integrity in mice. PLoS One | | |
| | <u>13 (4): e0195765.</u> | | |
| | 69. Ji, N. <i>et al.</i> (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. <i>et al.</i> (2022) Dysregulation of Immune Respons | se Mediators and | |
| | Pain-Related Ion Channels Is Associated with Pain-like Behav | vior in the GLA KO Mouse | |
| | Model of Fabry Disease. <u>Cells. 11 (11): 1730.</u> | | |
| | | | |
| 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 re | lated U.S. and foreign | |
| | counterparts | | |
| Health And Safety | Material Safety Datasheet documentation #20471 available at | • | |
| Information | https://www.bio-rad-antibodies.com/SDS/MCA711SBUV510 | | |
| | 20471 | | |
| | | | |
| Regulatory | For research purposes only | | |
| | | | |
| | | | |

Related Products

Recommended Useful Reagents

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

| North & South | Tel: +1 800 265 7376 | Worldwide | Tel: +44 (0)1865 852 700 | Europe | Tel: +49 (0) 89 8090 95 21 |
|---------------|---------------------------------|-----------|---------------------------------|--------|--------------------------------------|
| America | Fax: +1 919 878 3751 | | Fax: +44 (0)1865 852 739 | | Fax: +49 (0) 89 8090 95 50 |
| | Email: antibody_sales_us@bio-ra | id.com | Email: antibody_sales_uk@bio-ra | d.com | Email: antibody_sales_de@bio-rad.com |

To find a batch/lot specific datasheet for this product, please use our online search tool at: bio-rad-antibodies.com/datasheets 'M394748:220217'

Printed on 02 May 2024

© 2024 Bio-Rad Laboratories Inc | Legal | Imprint