

Datasheet: MCA275A647

BATCH NUMBER 173948

Description:	MOUSE ANTI RAT CD11b:Alexa Fluor® 647
Specificity:	CD11b
Other names:	CD11, INTEGRIN ALPHA M CHAIN, MAC-1
Format:	ALEXA FLUOR® 647
Product Type:	Monoclonal Antibody
Clone:	OX-42
Isotype:	IgG2a
Quantity:	100 TESTS/1ml

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 - 1/20

Where this antibody 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 antibody for use in their own system using appropriate negative/positive controls.

Target Species	Rat		
Product Form	Purified IgG conjugated to Alexa Fluor® 647- liquid		
Max Ex/Em	Fluorophore	Excitation Max (nm)	Emission Max (nm)
	Alexa Fluor®647	650	665
Preparation	Purified IgG prepared by affinity chromatography on Protein A from tissue culture supernatant		
Buffer Solution	Phosphate buffered saline		
Preservative	0.09% Sodium Azide		
Stabilisers	1% Bovine Serum Albumin		
Approx. Protein	IgG concentration 0.05 mg/ml		

Concentrations

Immunogen Resident rat peritoneal macrophages.

RRID AB_324731

Fusion Partners Spleen cells from immunized BALB/c mice were fused with cells of the NSO/U mouse myeloma cell line.

Specificity **Mouse anti Rat CD11b, clone OX-42** recognizes rat CD11b, also known as [integrin alpha-M](#), the receptor for the iC3b component of complement. CD11b is a 1151 amino acid single pass type 1 transmembrane glycoprotein possessing a single [vWFA](#) domain and multiple [FG-GAP](#) repeats. CD11b is expressed on most macrophages, including resident and activated peritoneal macrophages and Kupffer cells and around 35% of alveolar macrophages. The antibody also labels dendritic cells, granulocytes and [microglia](#) in the brain ([Robinson et al.1986](#)).

Mouse anti Rat CD11b, clone OX-42 is reported to inhibit complement mediated rosettes ([Robinson et al.1986](#)) as well as inhibit myelin binding and uptake ([van der Laan et al.1996](#)).

Flow Cytometry Use 10ul of the suggested working dilution to label 10^6 cells in 100ul.

References

1. Robinson, A.P. *et al.* (1986) Macrophage heterogeneity in the rat as delineated by two monoclonal antibodies MRC OX-41 and MRC OX-42, the latter recognizing complement receptor type 3. [Immunology. 57 \(2\): 239-47.](#)
2. Milligan, C.E. *et al.* (1991) Differential immunochemical markers reveal the normal distribution of brain macrophages and microglia in the developing rat brain. [J Comp Neurol. 314 \(1\): 125-35.](#)
3. Yrjanheikki, J. *et al.* (1999) A tetracycline derivative, minocycline, reduces inflammation and protects against focal cerebral ischemia with a wide therapeutic window. [Proc Natl Acad Sci U S A. 96: 13496-500.](#)
4. Draskovic-Pavlovic, B. *et al.* (1999) Differential effects of anti-rat CD11b monoclonal antibodies on granulocyte adhesiveness. [Immunology. 96: 83-9.](#)
5. Kielian, T. and Hickey, W.F. (2000) Proinflammatory cytokine, chemokine, and cellular adhesion molecule expression during the acute phase of experimental brain abscess development. [Am J Pathol. 157: 647-58.](#)
6. Choi, S.H. *et al.* (2003) Thrombin-induced microglial activation produces degeneration of nigral dopaminergic neurons *in vivo*. [J Neurosci. 23: 5877-86.](#)
7. Bruce-Keller, A.J. *et al.* (2003) Synaptic transport of human immunodeficiency virus-Tat protein causes neurotoxicity and gliosis in rat brain. [J Neurosci. 23: 8417-22.](#)
8. Jin, S.X. *et al.* (2003) p38 mitogen-activated protein kinase is activated after a spinal nerve ligation in spinal cord microglia and dorsal root ganglion neurons and contributes to the generation of neuropathic pain. [J Neurosci. 23: 4017-22.](#)
9. Walczak, P. *et al.* (2004) Do hematopoietic cells exposed to a neurogenic environment mimic properties of endogenous neural precursors? [J Neurosci Res. 76: 244-54.](#)
10. Stidworthy, M.F. *et al.* (2004) Notch1 and Jagged1 are expressed after CNS demyelination, but are not a major rate-determining factor during remyelination. [Brain.](#)

[127: 1928-41.](#)

11. Foote, A.K. and Blakemore, W.F. (2005) Inflammation stimulates remyelination in areas of chronic demyelination. [Brain. 128: 528-39.](#)
12. Jha, P. *et al.* (2006) The complement system plays a critical role in the development of experimental autoimmune anterior uveitis. [Invest Ophthalmol Vis Sci. 47: 1030-8.](#)
13. Clark, A.K. *et al.* (2007) Inhibition of spinal microglial cathepsin S for the reversal of neuropathic pain. [Proc Natl Acad Sci U S A. 104: 10655-60.](#)
14. Fendrick, S.E. *et al.* (2007) Formation of multinucleated giant cells and microglial degeneration in rats expressing a mutant Cu/Zn superoxide dismutase gene. [J Neuroinflammation. 4: 9.](#)
15. Ji, B. *et al.* (2008) Imaging of peripheral benzodiazepine receptor expression as biomarkers of detrimental versus beneficial glial responses in mouse models of Alzheimer's and other CNS pathologies. [J Neurosci. 28: 12255-67.](#)
16. Jean, Y.H. *et al.* (2009) Capnellene, a natural marine compound derived from soft coral, attenuates chronic constriction injury-induced neuropathic pain in rats [Br J Pharmacol. 158: 713-25.](#)
17. Leonardo, C.C. *et al.* (2009) Inhibition of gelatinase activity reduces neural injury in an *ex vivo* model of hypoxia-ischemia. [Neuroscience. 160: 755-66.](#)
18. Jin, Y. *et al.* (2009) Mast cells are early responders after hypoxia-ischemia in immature rat brain. [Stroke. 40: 3107-12.](#)
19. Baca Jones, C.C. (2009) Rat cytomegalovirus infection depletes MHC II in bone marrow derived dendritic cells. [Virology. 388: 78-90.](#)
20. Schlichter, L.C. *et al.* (2010) The Ca²⁺ activated SK3 channel is expressed in microglia in the rat striatum and contributes to microglia-mediated neurotoxicity *in vitro*. [J Neuroinflammation. 7: 4.](#)
21. Pickard, M.R. and Chari, D.M. (2010) Robust uptake of magnetic nanoparticles (MNPs) by central nervous system (CNS) microglia: Implications for particle uptake in mixed neural cell populations. [Int J Mol Sci. 11: 967-81.](#)
22. Medders, K.E. *et al.* (2010) Activation of p38 MAPK is required in monocytic and neuronal cells for HIV glycoprotein 120-induced neurotoxicity. [J Immunol. 185: 4883-95.](#)
23. Li, K. *et al.* (2010) Systemic minocycline differentially influences changes in spinal microglial markers following formalin-induced nociception. [J Neuroimmunol. 221: 25-31.](#)
24. Su, D. *et al.* (2010) Lidocaine attenuates proinflammatory cytokine production induced by extracellular adenosine triphosphate in cultured rat microglia. [Anesth Analg. 111: 768-74.](#)
25. Jokic, N. *et al.* (2010) The human G93A-SOD1 mutation in a pre-symptomatic rat model of amyotrophic lateral sclerosis increases the vulnerability to a mild spinal cord compression. [BMC Genomics. 11: 633.](#)
26. Zhou, D. *et al.* (2010) Involvement of spinal microglial P2X7 receptor in generation of tolerance to morphine analgesia in rats. [J Neurosci. 30: 8042-7.](#)
27. Smith, J.S. *et al.* (2010) Role of Early Surgical Decompression of the Intradural Space After Cervical Spinal Cord Injury in an Animal Model [J Bone Joint Surg Am. 92: 1206-14.](#)
28. Jiang, Y. *et al.* (2010) Effects of brain-derived neurotrophic factor on local inflammation in experimental stroke of rat. [Mediators Inflamm. 2010: 372423.](#)
29. Graber, D.J. *et al.* (2010) Progressive changes in microglia and macrophages in spinal cord and peripheral nerve in the transgenic rat model of amyotrophic lateral sclerosis. [J Neuroinflammation. 7: 8.](#)

30. Jeong, H.K. *et al.* (2010) Inflammatory responses are not sufficient to cause delayed neuronal death in ATP-induced acute brain injury. [PLoS One. 5: e13756.](#)
31. Wu, J. *et al.* (2010) Interaction of NG2(+) glial progenitors and microglia/macrophages from the injured spinal cord. [Glia. 58: 410-22.](#)
32. Guo, W. *et al.* (2010) Long lasting pain hypersensitivity following ligation of the tendon of the masseter muscle in rats: a model of myogenic orofacial pain. [Mol Pain. 6: 40.](#)
33. Shokouhi, B.N. *et al.* (2010) Microglial responses around intrinsic CNS neurons are correlated with axonal regeneration. [BMC Neurosci. 11: 13.](#)
34. Calvo, M. *et al.* (2010) Neuregulin-ErbB signaling promotes microglial proliferation and chemotaxis contributing to microgliosis and pain after peripheral nerve injury. [J Neurosci. 30 \(15\): 5437-50.](#)
35. Chew, S.S. *et al.* (2011) Response of retinal Connexin43 to optic nerve injury. [Invest Ophthalmol Vis Sci. 52: 3620-9.](#)
36. Spencer-Segal, J.L. *et al.* (2011) Distribution of Phosphorylated TrkB Receptor in the Mouse Hippocampal Formation Depends on Sex and Estrous Cycle Stage. [J Neurosci. 31: 6780-90.](#)
37. Converse, A.K. *et al.* (2011) 11C-(R)-PK11195 PET imaging of microglial activation and response to minocycline in zymosan-treated rats. [J Nucl Med. 52: 257-62.](#)
38. Feng, Y. *et al.* (2011) Gene expression profiling of vasoregression in the retina--involvement of microglial cells. [PLoS One. 6\(2\): e16865.](#)
39. Szmydynger-Chodobska, J. *et al.* (2011) Multiple sites of vasopressin synthesis in the injured brain. [J Cereb Blood Flow Metab. 31: 47-51.](#)
40. Toda, S. *et al.* (2011) A local anesthetic, ropivacaine, suppresses activated microglia via a nerve growth factor-dependent mechanism and astrocytes via a nerve growth factor-independent mechanism in neuropathic pain. [Mol Pain. 7: 2.](#)
41. Xu, Q. *et al.* (2011) Spinal phosphoinositide 3-kinase-Akt-mammalian target of rapamycin signaling cascades in inflammation-induced hyperalgesia. [J Neurosci. 31: 2113-24.](#)
42. Morales-Garcia, J.A. *et al.* (2011) Phosphodiesterase 7 inhibition preserves dopaminergic neurons in cellular and rodent models of Parkinson disease. [PLoS One. 6\(2\):e17240.](#)
43. Signarovitz, A.L. *et al.* (2012) Mucosal immunization with live attenuated *Francisella novicida* U112ΔiglB protects against pulmonary *F. tularensis* SCHU S4 in the Fischer 344 rat model. [PLoS One. 7: e47639.](#)
44. Ortega, F.J. *et al.* (2012) Glibenclamide enhances neurogenesis and improves long-term functional recovery after transient focal cerebral ischemia. [J Cereb Blood Flow Metab. 33: 356-64.](#)
45. Lavis, S. *et al.* (2012) Reactive astrocytes overexpress TSPO and are detected by TSPO positron emission tomography imaging. [J Neurosci. 32: 10809-18.](#)
46. Schonberg, D.L. *et al.* (2012) Ferritin stimulates oligodendrocyte genesis in the adult spinal cord and can be transferred from macrophages to NG2 cells *in vivo*. [J Neurosci. 32: 5374-84.](#)
47. d'Avila, J.C. *et al.* (2012) Microglial activation induced by brain trauma is suppressed by post-injury treatment with a PARP inhibitor. [J Neuroinflammation. 9: 31.](#)
48. Lovett-Barr, M.R. *et al.* (2012) Repetitive intermittent hypoxia induces respiratory and somatic motor recovery after chronic cervical spinal injury. [J Neurosci. 32 \(11\): 3591-600.](#)
49. Tchoukalova, Y.D. *et al.* (2012) *In vivo* adipogenesis in rats measured by cell kinetics

- in adipocytes and plastic-adherent stroma-vascular cells in response to high-fat diet and thiazolidinedione. [Diabetes. 61: 137-44.](#)
50. Zhang, Z.J. *et al.* (2012) Chemokine CCL2 and its receptor CCR2 in the medullary dorsal horn are involved in trigeminal neuropathic pain. [J Neuroinflammation. 9: 136.](#)
51. Liew, H.K. *et al.* (2012) Systemic administration of urocortin after intracerebral hemorrhage reduces neurological deficits and neuroinflammation in rats. [J Neuroinflammation. 9: 13.](#)
52. de Sousa, É *et al.* (2013) Developmental and functional expression of miRNA-stability related genes in the nervous system. [PLoS One. 8 \(5\): e56908.](#)
53. Zhao, H. *et al.* (2013) Brain 3-Mercaptopyruvate Sulfurtransferase (3MST): Cellular Localization and Downregulation after Acute Stroke. [PLoS One. 8\(6\):e67322.](#)
54. Huang, S. *et al.* (2015) Expression of Peroxiredoxin 1 After Traumatic Spinal Cord Injury in Rats. [Cell Mol Neurobiol. 35 \(8\): 1217-26.](#)
55. Hernangómez M *et al.* (2016) CD200R1 agonist attenuates glial activation, inflammatory reactions, and hypersensitivity immediately after its intrathecal application in a rat neuropathic pain model. [J Neuroinflammation. 13 \(1\): 43.](#)
56. Szmydynger-Chodobska, J. *et al.* (2016) The Involvement of Pial Microvessels in Leukocyte Invasion after Mild Traumatic Brain Injury. [PLoS One. 11 \(12\): e0167677.](#)
57. Liu, Z. *et al.* (2016) Leukocyte Infiltration Triggers Seizure Recurrence in a Rat Model of Temporal Lobe Epilepsy. [Inflammation. 39 \(3\): 1090-8.](#)
58. Chen, X. *et al.* (2017) TGF- β 1 Neuroprotection via Inhibition of Microglial Activation in a Rat Model of Parkinson's Disease. [J Neuroimmune Pharmacol. 12 \(3\): 433-46.](#)
59. Popielek-Barczyk, K. *et al.* (2017) Biphalin, a Dimeric Enkephalin, Alleviates LPS-Induced Activation in Rat Primary Microglial Cultures in Opioid Receptor-Dependent and Receptor-Independent Manners. [Neural Plast. 2017: 3829472.](#)
60. Huang RY *et al.* (2017) Rapid and Delayed Effects of Pulsed Radiofrequency on Neuropathic Pain: Electrophysiological, Molecular, and Behavioral Evidence Supporting Long-Term Depression. [Pain Physician. 20 \(2\): E269-E283.](#)
61. Chong, S.A. *et al.* (2018) Intrinsic Inflammation Is a Potential Anti-Epileptogenic Target in the Organotypic Hippocampal Slice Model. [Neurotherapeutics. 15 \(2\): 470-88.](#)
62. Terayama, R. *et al.* (2018) A₃ adenosine receptor agonist attenuates neuropathic pain by suppressing activation of microglia and convergence of nociceptive inputs in the spinal dorsal horn. [Exp Brain Res. 236 \(12\): 3203-13.](#)
63. Sanches, E.F. *et al.* (2018) Brain Metabolism Alterations Induced by Pregnancy Swimming Decreases Neurological Impairments Following Neonatal Hypoxia-Ischemia in Very Immature Rats. [Front Neurol. 9: 480.](#)
64. Collins, J.J.P. *et al.* (2018) Impaired Angiogenic Supportive Capacity and Altered Gene Expression Profile of Resident CD146⁺ Mesenchymal Stromal Cells Isolated from Hyperoxia-Injured Neonatal Rat Lungs. [Stem Cells Dev. 27 \(16\): 1109-24.](#)
65. Wang, Z.C. *et al.* (2018) Involvement of NF- κ B and the CX3CR1 Signaling Network in Mechanical Allodynia Induced by Tetanic Sciatic Stimulation. [Neurosci Bull. 34 \(1\): 64-73.](#)
66. Bourke, G. *et al.* (2018) Effects of early nerve repair on experimental brachial plexus injury in neonatal rats. [J Hand Surg Eur Vol. 43 \(3\): 275-81.](#)
67. Yuan, Z. *et al.* (2019) The anti-inflammatory effect of minocycline on endotoxin-induced uveitis and retinal inflammation in rats. [Mol Vis. 25: 359-72.](#)
68. Hansson, E. & Skiöldebrand, E. (2019) Anti-inflammatory effects induced by ultralow concentrations of bupivacaine in combination with ultralow concentrations of sildenafil

- (Viagra) and vitamin D3 on inflammatory reactive brain astrocytes. [PLoS One. 14 \(10\): e0223648.](#)
69. Muratori, L. *et al.* (2019) New basic insights on the potential of a chitosan-based medical device for improving functional recovery after radical prostatectomy. [BJU Int. 124 \(6\): 1063-76.](#)
70. Hahm, S.C. *et al.* (2019) Transcutaneous Electrical Nerve Stimulation Reduces Knee Osteoarthritic Pain by Inhibiting Spinal Glial Cells in Rats. [Phys Ther. 99 \(9\): 1211-23.](#)
71. Hellenbrand, D.J. *et al.* (2019) Sustained interleukin-10 delivery reduces inflammation and improves motor function after spinal cord injury. [J Neuroinflammation. 16 \(1\): 93.](#)
72. Sugama, S. *et al.* (2019) Stress-induced microglial activation occurs through β -adrenergic receptor: noradrenaline as a key neurotransmitter in microglial activation. [J Neuroinflammation. 16 \(1\): 266.](#)
73. Anqi, X. *et al.* (2019) Neuroprotective potential of GDF11 in experimental intracerebral hemorrhage in elderly rats. [J Clin Neurosci. 63: 182-8.](#)
74. Klemm, P. *et al.* (2019) Hypothermia protects retinal ganglion cells against hypoxia-induced cell death in a retina organ culture model. [Clin Exp Ophthalmol. 47 \(8\): 1043-54.](#)
75. Allendorf, D.H. *et al.* (2020) Activated microglia desialylate their surface, stimulating complement receptor 3-mediated phagocytosis of neurons. [Glia. 68 \(5\): 989-998.](#)
76. Cohrs, G. *et al.* (2020) Expression Patterns of Hypoxia-Inducible Factors, Proinflammatory, and Neuroprotective Cytokines in Neuroepithelial Tissues of Lumbar Spinal Lipomas-A Pilot Study. [World Neurosurg. 141: e633-e644.](#)
77. Lin, J. *et al.* (2020) Protective effect of Soluble Epoxide Hydrolase Inhibition in Retinal Vasculopathy associated with Polycystic Kidney Disease. [Theranostics. 10 \(17\): 7857-71.](#)
78. Memedovski, Z. *et al.* (2020) Classical and Alternative Activation of Rat Microglia Treated with Ultrapure *Porphyromonas gingivalis* Lipopolysaccharide *In Vitro.* [Toxins \(Basel\). 12\(5\): 333.](#)
79. Espinosa-Garcia, C. *et al.* (2020) Progesterone Attenuates Stress-Induced NLRP3 Inflammasome Activation and Enhances Autophagy following Ischemic Brain Injury. [Int J Mol Sci. 21 \(11\): 3740.](#)
80. Tanaka, J. *et al.* (2020) Generation of CSF1-Independent Ramified Microglia-Like Cells from Leptomeninges *In Vitro.* [Cells. 10 \(1\): 24.](#)
81. van Vliet, E.A. (2020) Long-lasting blood-brain barrier dysfunction and neuroinflammation after traumatic brain injury [Neurobiol Dis 11:13.](#)
82. Mecha, M. *et al.* (2020) Involvement of Wnt7a in the role of M2c microglia in neural stem cell oligodendrogenesis. [J Neuroinflammation. 17 \(1\): 88.](#)
83. Chun, S. *et al.* (2021) The Peripheral Role of CCL2 in the Anti-Nociceptive Effect of Sigma-1 Receptor Antagonist BD1047 on Inflammatory Hyperalgesia in Rats. [Int J Mol Sci. 22\(21\):11730.](#)
84. Elabi, O.F. *et al.* (2021) L-dopa-Dependent Effects of GLP-1R Agonists on the Survival of Dopaminergic Cells Transplanted into a Rat Model of Parkinson Disease. [Int J Mol Sci. 22\(22\):12346.](#)
85. Zhang, J. *et al.* (2021) Significant higher-level C-C motif chemokine ligand 2/3 and chemotactic power in cerebral white matter than grey matter in rat and human. [Eur J Neurosci. 54 \(1\): 4088-100.](#)
86. Sato, T. *et al.* (2021) Distribution of alpha-synuclein in the rat cranial sensory ganglia, and oro-cervical regions. [Ann Anat. 238: 151776.](#)
87. Winkler, A. *et al.* (2021) Blood-brain barrier resealing in neuromyelitis optica occurs

- independently of astrocyte regeneration. [J Clin Invest. 131\(5\):e141694.](#)
88. Schnichels, S. *et al.* (2021) Cyclosporine A Protects Retinal Explants against Hypoxia. [Int J Mol Sci. 22 \(19\):10196.](#)
89. Valenzuela, R. *et al.* (2021) An ACE2/Mas-related receptor MrgE axis in dopaminergic neuron mitochondria. [Redox Biol. 46: 102078.](#)
90. Giuliano, C. *et al.* (2021) Neuroprotective and Symptomatic Effects of Cannabidiol in an Animal Model of Parkinson's Disease. [Int J Mol Sci. 22 \(16\): 8920.](#)
91. Hosoi, R. *et al.* (2021) Evaluation of intracellular processes in quinolinic acid-induced brain damage by imaging reactive oxygen species generation and mitochondrial complex I activity. [EJNMMI Res. 11 \(1\): 99.](#)
92. Szeredi, I.D. *et al.* (2021) Prior perineural or neonatal treatment with capsaicin does not alter the development of spinal microgliosis induced by peripheral nerve injury. [Cell Tissue Res. 383 \(2\): 677-92.](#)
93. Kuo, T.T. *et al.* (2021) Post-stroke Delivery of Valproic Acid Promotes Functional Recovery and Differentially Modifies Responses of Peri-Infarct Microglia. [Front Mol Neurosci. 14: 639145.](#)
94. Joya, A. *et al.* (2021) *In vivo* multimodal imaging of adenosine A₁ receptors in neuroinflammation after experimental stroke. [Theranostics. 11 \(1\): 410-25.](#)
95. Lane, E.L. *et al.* (2022) Spontaneous Graft-Induced Dyskinesias Are Independent of 5-HT Neurons and Levodopa Priming in a Model of Parkinson's Disease. [Mov Disord. 37 \(3\): 613-9.](#)
96. Kuter, K.Z. *et al.* (2022) The influence of preconditioning with low dose of LPS on paraquat-induced neurotoxicity, microglia activation and expression of α -synuclein and synphilin-1 in the dopaminergic system. [Pharmacol Rep. 74 \(1\): 67-83.](#)
97. Huang, S. *et al.* (2022) Hydrogen sulfide supplement preserves mitochondrial function of retinal ganglion cell in a rat glaucoma model. [Cell Tissue Res. 389 \(2\): 171-85.](#)
98. Dias, L. *et al.* (2022) A β ₁₋₄₂ peptides blunt the adenosine A_{2A} receptor-mediated control of the interplay between P₂X₇ and P₂Y₁ receptors mediated calcium responses in astrocytes. [Cell Mol Life Sci. 79 \(8\): 457.](#)
99. Andrioli, A. *et al.* (2022) Downregulation of the Astroglial Connexin Expression and Neurodegeneration after Pilocarpine-Induced Status Epilepticus. [Int J Mol Sci. 24 \(1\): 23.](#)
100. Li, H. *et al.* (2023) Cellular Localization and Distribution of TGF- β 1, GDNF and PDGF-BB in the Adult Primate Central Nervous System. [Neurochem Res. 48 \(8\): 2406-23.](#)
101. Li, Li-H. *et al.* (2023) Ovariectomy induces hyperalgesia accompanied by upregulated estrogen receptor α and protein kinase B in the rat spinal cord [Physiol Behav. 271:114342.](#)
102. Telianidis, J. *et al.* (2023) Inhibition of insulin-regulated aminopeptidase confers neuroprotection in a conscious model of ischemic stroke. [Sci Rep. 13 \(1\): 19722.](#)
103. Khayrullina, G. *et al.* (2023) Differential effects of NOX2 and NOX4 inhibition after rodent spinal cord injury. [PLoS One. 18 \(3\): e0281045.](#)
104. Moretti, M. *et al.* (2023) "Combo" Multi-Target Pharmacological Therapy and New Formulations to Reduce Inflammation and Improve Endogenous Remyelination in Traumatic Spinal Cord Injury. [Cells. 12 \(9\): 1331.](#)
105. Ameen, S.S. *et al.* (2023) N-Terminomic Changes in Neurons During Excitotoxicity Reveal Proteolytic Events Associated With Synaptic Dysfunctions and Potential Targets for Neuroprotection. [Mol Cell Proteomics. 22 \(5\): 100543.](#)

106. Sinha, S. *et al.* (2020) Maternal Spirulina supplementation during pregnancy and lactation partially prevents oxidative stress, glial activation and neuronal damage in protein malnourished F1 progeny. [Neurochem Int. 141: 104877.](#)
107. Huang, C.T. *et al.* (2018) Erythropoietin reduces nerve demyelination, neuropathic pain behavior and microglial MAPKs activation through erythropoietin receptors on Schwann cells in a rat model of peripheral neuropathy. [Glia. 66 \(11\): 2299-315.](#)
108. Routhe, L.J. *et al.* (2020) Astrocytic expression of ZIP14 (SLC39A14) is part of the inflammatory reaction in chronic neurodegeneration with iron overload. [Glia. 68 \(9\): 1810-23.](#)
109. Moriyama, M. *et al.* (2018) S-Equol, a Major Isoflavone from Soybean, Inhibits Nitric Oxide Production in Lipopolysaccharide-Stimulated Rat Astrocytes Partially via the GPR30-Mediated Pathway. [Int J Inflamm. 2018: 8496973.](#)
110. Jeon, M.T. *et al.* (2020) Neurotrophic interactions between neurons and astrocytes following AAV1-Rheb(S16H) transduction in the hippocampus *in vivo*. [Br J Pharmacol. 177 \(3\): 668-686.](#)
111. Li, X. *et al.* (2019) Magnesium sulfate attenuates brain edema by lowering AQP4 expression and inhibits glia-mediated neuroinflammation in a rodent model of eclampsia. [Behav Brain Res. 364: 403-12.](#)
112. Li, Q. *et al.* (2019) Spinal IL-36 γ /IL-36R participates in the maintenance of chronic inflammatory pain through astroglial JNK pathway. [Glia. 67 \(3\): 438-451.](#)
113. Baror, R. *et al.* (2019) Transforming growth factor-beta renders ageing microglia inhibitory to oligodendrocyte generation by CNS progenitors. [Glia. 67 \(7\): 1374-84.](#)
114. Lane, E.L. *et al.* (2022) Spontaneous Graft-Induced Dyskinesias Are Independent of 5-HT Neurons and Levodopa Priming in a Model of Parkinson's Disease. [Mov Disord. 37 \(3\): 613-9.](#)
115. Ekong, M.B. *et al.* (2024) EVALUATION OF PRENATAL CALABASH CHALK GEOPHAGY ON THE DEVELOPING BRAIN OF WISTAR RATS [IBRO Neuroscience Reports. 14 Mar \[Epub ahead of print\].](#)
116. Demartini, C. *et al.* (2022) Modulation of Glia Activation by TRPA1 Antagonism in Preclinical Models of Migraine. [Int J Mol Sci. 23 \(22\):14085](#)
117. Rong, Y. *et al.* (2021) Small extracellular vesicles encapsulating CCL2 from activated astrocytes induce microglial activation and neuronal apoptosis after traumatic spinal cord injury. [J Neuroinflammation. 18 \(1\): 196.](#)
118. Hakami, A. *et al.* (2025) Graft ischemia post cell transplantation to the brain: Glucose deprivation as the primary driver of rapid cell death. [Neurotherapeutics. : e00518.](#)
119. Sarkar, T. *et al.* (2023) Glial Response to Perinatal Multi-Hit Stress: The Triggering Factor for Schizophrenia [Virology & Immunology Journal. 7 \(1\): 1-21.](#)

Storage

This product is shipped at ambient temperature. It is recommended to aliquot and store at -20°C on receipt. When thawed, aliquot the sample as needed. Keep aliquots at 2-8°C for short term use (up to 4 weeks) and store the remaining aliquots at -20°C.

Avoid repeated freezing and thawing as this may denature the antibody. Storage in frost-free freezers is not recommended. This product is photosensitive and should be protected from light.

Guarantee

12 months from date of despatch

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Printed on 21 May 2026

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