OriGene Technologies, Inc.
9620 Medical Center Drive, Ste 200
Rockville, MD 20850
UNITED STATES
Phone: +1-888-267-4436
Fax: +1-301-340-8606
techsupport@origene.com

OriGene Technologies GmbH
Schillerstr. 5
32052 Herford
GERMANY
Phone: +49-5221-34606-0
Fax: +49-5221-34606-11
info-de@origene.com

SM014RT Monoclonal Antibody to CD11b - PE

Alternate names: CD11 antigen-like family member B, CR-3 alpha chain, CR3A, Cell surface glycoprotein MAC-1 subunit alpha, ITGAM, Integrin alpha-M, Leukocyte adhesion receptor MO1, MAC1, Neutrophil adherence receptor

Quantity: 25 Tests

Background: CD11b (integrin aM subunit) is a 165 kDa type I transmembrane glycoprotein that non-covalently associates with integrin b2 subunit (CD18); expression of the CD11b chain on the cell surface requires the presence of the CD18 antigen. CD11b/CD18 integrin (Mac-1, CR3) is highly expressed on NK cells, neutrophils, monocytes and less on macrophages. The expression of CD11b increases during monocyte maturation and expression levels vary on tissue macrophages.
CD11b/CD18 integrin is implicated in various adhesive interactions of monocytes, macrophages and granulocytes, facilitating their diapedesis, as well as it mediates the uptake of complement coated particles, serving as a receptor for the iC3b fragment of the third complement component.
Peritoneal macrophages are reported to express higher levels of CD11b than splenic macrophages.

Uniprot ID: P05555

NCBI: 10090

Host / Isotype: Rat / IgG2b

Recommended Isotype Controls: SM19R

Clone: M1/70.15

Immunogen: T cell enriched splenocytes from B10 mice.
Spleen cells from an immunised DA rat were fused with cells of the mouse NS1/1.Ag4.1 myeloma cell line.

Format: **State:** Lyophilized purified IgG fraction.
Purification: Affinity Chromatography on Protein G
Buffer System: PBS, pH 7.4 containing 0.09% Sodium Azide, 1% BSA, 5% Sucrose
Label: PE – R. Phycoerythrin (RPE)
Reconstitution: Restore with distilled water.

Applications: Flow Cytometry: Use 10 µl of neat-1/10 diluted antibody to label 10e6 cells in 100µl. The Fc region of monoclonal antibodies may bind non-specifically to cells expressing low affinity Fc receptors.
Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity:

This antibody recognises the murine CD11b cell surface antigen (also known as the alpha M integrin chain or MAC-1).
Clone M1/70.15 has been reported to block iC3b binding to its receptor. SM014A is recommended for this purpose.
Clone M1/70.15 has been reported to as being suitable for use on PLP fixed paraffin embedded tissue but has not been tested for use on formalin fixed tissue.
Species: Human, Mouse and Rabbit.
Other species not tested.

Storage:

Prior to and following reconstitution store the antibody undiluted at 2-8°C.
DO NOT FREEZE!
This product is photosensitive and should be protected from light.
Shelf life: one year from despatch.

General Readings:

1. Beller, D.I. et al. (1982) Anti-Mac-1 selectively inhibits the mouse and human type three
complement receptor. J Exp Med. 156 (4): 1000-9.
2. FernándezSuárez, D. (2014) The monoacylglycerol lipase inhibitor JZL184 is neuroprotective
and alters glial cell phenotype in the chronic MPTP mouse model Neurobiol Aging. 35: 2603-16.
3. Welt, F.G. et al. (2000) Neutrophil, not macrophage, infiltration precedes neointimal thickening in balloon-injured arteries. Arterioscler Thromb Vasc Biol. 20 (12): 2553-8.
4. Terrando, N. et al. (2010) The impact of IL-1 modulation on the development of lipopolysaccharide-induced cognitive dysfunction. Crit Care. 14 (3): R88.
5. Redensek, A. et al. (2011) Expression and detrimental role of hematopoietic prostaglandin D synthase in spinal cord contusion injury. Glia. 59: 603-14.
6. Brochard, V. et al (2009) Infiltration of CD4+ lymphocytes into the brain contributes to neurodegeneration in a mouse model of Parkinson disease. J Clin Invest. 119: 182-92.
7. Chinnery, H.R. et al. (2010) Novel characterization of monocyte-derived cell populations in the meninges and choroid plexus and their rates of replenishment in bone marrow chimeric mice.
J Neuropathol Exp Neurol. 69: 896-909.
8. Ferger, A.I. et al (2010) Effects of mitochondrial dysfunction on the immunological properties of microglia. J Neuroinflammation. 7: 45.
9. Gales, A. et al (2010) PPARgamma controls dectin-1 expression required for host antifungal defense against Candida albicans. PLoS Pathog. 6 : e1000714.
10. Geier, H. and Celli, J. (2011) Phagocytic Receptors Dictate Phagosomal Escape and Intracellular Proliferation of Francisella tularensis. Infect Immun. 79: 2204-14.
11. Ghasemlou, N. et al. (2010) Mitogen-activated protein kinase-activated protein kinase 2
(MK2) contributes to secondary damage after spinal cord injury. J Neurosci. 30: 13750-9.
12. Huang, Q.Q. et al (2008) Role of H2-calponin in regulating macrophage motility and phagocytosis.
J Biol Chem. 283: 25887-99.

13. Hudcovic, T. et al (2009) Monocolonization with Bacteroides ovatus protects immunodeficient SCID mice from mortality in chronic intestinal inflammation caused by
long-lasting dextran sodium sulfate treatment. Physiol Res. 58: 101-10.
14. Kanu, N. et al. (2010) The ATM cofactor ATMIN protects against oxidative stress and accumulation of DNA damage in the aging brain. J Biol Chem. 285: 38534-42.
15. Kapturczak, M.H. et al (2004) Heme oxygenase-1 modulates early inflammatory responses: evidence from the heme oxygenase-1-deficient mouse. Am J Pathol. 165: 1045-53.
16. Kroner, A. et al (2010) Ectopic T-cell specificity and absence of perforin and granzyme B alleviate neural damage in oligodendrocyte mutant mice. Am J Pathol. 176: 549-55.
17. L'Episcopo, F. et al. (2010) Combining nitric oxide release with anti-inflammatory activity preserves nigrostriatal dopaminergic innervation and prevents motor impairment in a 1-methyl- 4-phenyl-1,2,3,6-tetrahydropyridine model of Parkinson's disease. J Neuroinflammation. 7: 83.
18. Samanta, J. et al. (2010) Noggin protects against ischemic brain injury in rodents. Stroke.41: 357-62.
19. Yang, X. et al (2010) The role of the JAK2-STAT3 pathway in pro-inflammatory responses of
EMF-stimulated N9 microglial cells. J Neuroinflammation. 7: 54.
20. Kondo, Y. et al. (2011) Macrophages counteract demyelination in a mouse model of globoid cell leukodystrophy. J Neurosci. 31: 3610-24.
21. Macrez, R. et al. (2016) Neuroendothelial NMDA receptors as therapeutic targets in experimental autoimmune encephalomyelitis. Brain. Jul 19. pii: aww172. [Epub ahead of print]
22. Amantea, D. et al. (2016) Neuroprotective Properties of a Macrolide Antibiotic in a Mouse Model of Middle Cerebral Artery Occlusion: Characterization of the Immunomodulatory Effects and Validation of the Efficacy of Intravenous Administration. Assay Drug Dev Technol. Jul 8. [Epub ahead of print]
23. Werneburg, S. et al. (2016) Polysialylation and lipopolysaccharide-induced shedding of E-selectin ligand-1 and neuropilin-2 by microglia and THP-1 macrophages. Glia. 64 (8): 1314-30.
24. Certo, M. et al. (2015) Activation of RXR/PPARγ underlies neuroprotection by bexarotene in ischemic stroke. Pharmacol Res. 102: 298-307.
25. Chen, Z.Z. et al. (2016) Memantine mediates neuroprotection via regulating neurovascular
unit in a mouse model of focal cerebral ischemia. Life Sci. 150: 8-14.
26. Rich, M.C. et al. (2016) Site-targeted complement inhibition by a complement receptor
2-conjugated inhibitor (mTT30) ameliorates post-injury neuropathology in mouse brains.
Neurosci Lett. 617: 188-94.
27. McCarthy, R.C. et al. (2016) Characterization of a novel adult murine immortalized microglial cell line and its activation by amyloid-beta. J Neuroinflammation. 13: 21.
28. Jones, R.S. et al. (2015) Inhibition of JAK2 attenuates the increase in inflammatory

markers in microglia from APP/PS1 mice. Neurobiol Aging. 36 (10): 2716-24.
29. Amantea, D. et al. (2016) Azithromycin protects mice against ischemic stroke injury by promoting macrophage transition towards M2 phenotype. Exp Neurol. 275 Pt 1: 116-25.
30. Bains, M. & Roberts, J.L. (2016) Estrogen protects against dopamine neuron toxicity in primary mesencephalic cultures through an indirect P13K/Akt mediated astrocyte pathway.
Neurosci Lett. 610: 79-85.
31. Ji, J. et al. (2015) Iptakalim protects against ischemic injury by improving neurovascular unit function in the mouse brain. Clin Exp Pharmacol Physiol. 42 (7): 766-71.
32. Kim, B.W. et al. (2015) αAsarone attenuates microgliamediated neuroinflammation by inhibiting NF kappa B activation and mitigates MPTP-induced behavioral deficits in a mouse model of Parkinson's disease. Neuropharmacology. 97: 46-57.

Pictures:

Staining of total mouse peritoneal exudate cells demonstrating labelling of Macrophages with Rat anti Mouse CD11b-RPE