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SM262R 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: 100 Tests

Background: CD11b is implicated in various adhesive interactions of monocytes, macrophages and granulocytes as well as in mediating the uptake of complement coated particles. It is identical to CR3, the receptor for the iC3b fragment of the third complement component. It probably recognizes the RGD peptide in C3b. CD11b is also a receptor for fibrinogen, factor X and ICAM1. It recognizes P1 and P2 peptides of fibrinogen gamma chain. The Mac1 CD11b antigen is present on macrophages, granulocytes, natural killer cells, blood monocytes. CD11b is expressed on 8% spleen cells, 44% bone marrow cells and less than 1% of thymocytes and is commonly used as a microglial marker in nervous tissue.

Uniprot ID: Q63001

NCBI: 10116

Host / Isotype: Mouse / IgG2a

Clone: OX-42

Immunogen: Rat peritoneal macrophages.
Spleen cells from immunised BALB/c mice were fused with cells of the NSO/U mouse myeloma cell line.

Format:
State: Lyophilized purified IgG fraction
Purification: Ion Exchange Chromatography
Buffer System: PBS
Preservatives: 0.09% Sodium Azide
Stabilizers: 1% BSA and 5% Sucrose
Label: PE – R. Phycoerythrin (RPE)
Reconstitution: Restore with 1 ml distilled water.

Applications:
Flow Cytometry: Use 10 µl of neat antibody to label 10^6 cells in 100 µl.
Note: Clone OX-42 has been reported as being suitable for use on paraffin-embedded material following PLP fixation (periodate-lysine-paraformaldehyde).
Functionally, Clone OX-42 inhibits complement mediated rosettes. We recommend the use of SM262LE for use in functional studies.
Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity: This antibody Clone OX-42 recognizes the Rat equivalent of Human CD11b, the receptor for the iC3b component of complement.
The antigen 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 microglial cells in the brain.

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).

Storage:

Prior to and following reconstitution store 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. Robinson AP, White TM, Mason DW. 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. 1986 Feb;57(2):239-47. PubMed PMID: 3512425.
2. Barclay AN. The localization of populations of lymphocytes defined by monoclonal antibodies in rat lymphoid tissues. Immunology. 1981 Apr;42(4):593-600. PubMed PMID: 7016746.
3. Milligan CE, Cunningham TJ, Levitt P. Differential immunochemical markers reveal the normal distribution of brain macrophages and microglia in the developing rat brain. J Comp Neurol. 1991 Dec 1;314(1):125-35. PubMed PMID: 1797868.
4. Whiteland JL, Nicholls SM, Shimeld C, Easty DL, Williams NA, Hill TJ. Immunohistochemical detection of T-cell subsets and other leukocytes in paraffin-embedded rat and mouse tissues with monoclonal antibodies. J Histochem Cytochem. 1995 Mar;43(3):313-20. PubMed PMID: 7868861.
5. Zilka N, Stozicka Z, Kovac A, Pilipcinec E, Bugos O, Novak M. Human misfolded truncated tau protein promotes activation of microglia and leukocyte infiltration in the transgenic rat model of tauopathy. J Neuroimmunol. 2009 Apr 30;209(1-2):16-25. doi: 10.1016/j.jneuroim.2009.01.013. Epub 2009 Feb 20. PubMed PMID: 19232747.
6. Shokouhi BN, Wong BZ, Siddiqui S, Lieberman AR, Campbell G, Tohyama K, et al. Microglial responses around intrinsic CNS neurons are correlated with axonal regeneration. BMC Neurosci. 2010 Feb 5;11:13. doi: 10.1186/1471-2202-11-13. PubMed PMID: 20137064.
7. Calvo M, Zhu N, Tsantoulas C, Ma Z, Grist J, Loeb JA, et al. Neuregulin-ErbB signaling promotes microglial proliferation and chemotaxis contributing to microgliosis and pain after peripheral nerve injury. J Neurosci. 2010 Apr 14;30(15):5437-50. doi: 10.1523/JNEUROSCI.5169-09.2010. PubMed PMID: 20392965.
8. Jean YH, Chen WF, Sung CS, Duh CY, Huang SY, Lin CS, et al. Capnellene, a natural marine compound derived from soft coral, attenuates chronic constriction injury-induced neuropathic pain in rats. Br J Pharmacol. 2009 Oct;158(3):713-25. doi: 10.1111/j.1476-5381.2009.00323.x. Epub 2009 Aug 5. PubMed PMID: 19663884.
9. Morales-Garcia JA, Redondo M, Alonso-Gil S, Gil C, Perez C, Martinez A, et al. Phosphodiesterase 7 inhibition preserves dopaminergic neurons in cellular and rodent models of Parkinson disease. PLoS One. 2011 Feb 24;6(2):e17240. doi: 10.1371/journal.pone.0017240. PubMed PMID: 21390306.
10. Spencer-Segal JL, Waters EM, Bath KG, Chao MV, McEwen BS, Milner TA. Distribution of phosphorylated TrkB receptor in the mouse hippocampal formation depends on sex and estrous cycle stage. J Neurosci. 2011 May 4;31(18):6780-90. doi: 10.1523/JNEUROSCI.0910-11.2011. PubMed PMID: 21543608.
11. Chew SS, Johnson CS, Green CR, Danesh-Meyer HV. Response of retinal Connexin43 to optic nerve injury. Invest Ophthalmol Vis Sci. 2011 Jun 1;52(6):3620-9.

doi: 10.1167/iovs.10-6318. PubMed PMID: 21310901.
12. Huh SH, Chung YC, Piao Y, Jin MY, Son HJ, Yoon NS, et al. Ethyl pyruvate rescues nigrostriatal dopaminergic neurons by regulating glial activation in a mouse model of Parkinson's disease. J Immunol. 2011 Jul 15;187(2):960-9. doi: 10.4049/jimmunol.1100009. Epub 2011 Jun 17. PubMed PMID: 21685323.
13. Jeong HK, Ji KM, Kim B, Kim J, Jou I, Joe EH. Inflammatory responses are not sufficient to cause delayed neuronal death in ATP-induced acute brain injury. PLoS One. 2010 Oct 29;5(10):e13756. doi: 10.1371/journal.pone.0013756. PubMed PMID: 21060796.
14. Liew HK, Pang CY, Hsu CW, Wang MJ, Li TY, Peng HF, et al. Systemic administration of urocortin after intracerebral hemorrhage reduces neurological deficits and neuroinflammation in rats. J Neuroinflammation. 2012 Jan 19;9:13. doi: 10.1186/1742-2094-9-13. PubMed PMID: 22257737.
15. Szmydynger-Chodobska, J. et al. (2011) Multiple sites of vasopressin synthesis in the injured brain. J Cereb Blood Flow Metab. 31: 47-51.
16. Tchoukalova YD, Fitch M, Rogers PM, Covington JD, Henagan TM, Ye J, et al. 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. 2012 Jan;61(1):137-44. doi: 10.2337/db10-1768. Epub 2011 Nov 28. PubMed PMID: 22124466.
17. Xu Q, Fitzsimmons B, Steinauer J, O'Neill A, Newton AC, Hua XY, et al. Spinal phosphinositide 3-kinase-Akt-mammalian target of rapamycin signaling cascades in inflammation-induced hyperalgesia. J Neurosci. 2011 Feb 9;31(6):2113-24. doi: 10.1523/JNEUROSCI.2139-10.2011. PubMed PMID: 21307248.
18. Lovett-Barr MR, Satriotomo I, Muir GD, Wilkerson JE, Hoffman MS, Vinit S, et al. Repetitive intermittent hypoxia induces respiratory and somatic motor recovery after chronic cervical spinal injury. J Neurosci. 2012 Mar 14;32(11):3591-600. doi: 10.1523/JNEUROSCI.2908-11.2012. PubMed PMID: 22423083.
19. Lavisse S, Guillermier M, Hérard AS, Petit F, Delahaye M, Van Camp N, et al. Reactive astrocytes overexpress TSPO and are detected by TSPO positron emission tomography imaging. J Neurosci. 2012 Aug 8;32(32):10809-18. doi: 10.1523/JNEUROSCI.1487-12.2012. PubMed PMID: 22875916.
20. Ortega FJ, Jolkkonen J, Mahy N, Rodríguez MJ. Glibenclamide enhances neurogenesis and improves long-term functional recovery after transient focal cerebral ischemia. J Cereb Blood Flow Metab. 2013 Mar;33(3):356-64. doi: 10.1038/jcbfm.2012.166. Epub 2012 Nov 14. PubMed PMID: 23149556.
21. Zhao H, Chan SJ, Ng YK, Wong PT. Brain 3-Mercaptopyruvate Sulfurtransferase (3MST): Cellular Localization and Downregulation after Acute Stroke. PLoS One. 2013 Jun 21;8(6):e67322. Print 2013. PubMed PMID: 23805308.
22. Huang, S. et al. (2015) Expression of Peroxiredoxin 1 After Traumatic Spinal Cord Injury in Rats. Cell Mol Neurobiol. May 24. [Epub ahead of print]
23. Wang, A. Y. et al. (2015) Searching for a rat model of chronic tympanic membrane perforation: Healing delayed by mitomycin C/dexamethasone but not paper implantation or iterative myringotomy International Journal of Pediatric Otorhinolaryngology. 26 May [Epub ahead of print]