Datasheet: MCA1322A488

Description:	RAT ANTI MOUSE CD204:Alexa Fluor® 488
Specificity:	CD204
Other names:	SCAVENGER RECEPTOR TYPE I/II
Format:	ALEXA FLUOR® 488
Product Type:	Monoclonal Antibody
Clone:	2F8
Isotype:	IgG2b
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 - 1/5

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: Pig, Channel catfish

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 Alexa Fluor® 488 - liquid

Max Ex/Em

Fluorophore	Excitation Max (nm)	Emission Max (nm)
Alexa Fluor®488	495	519

Preparation

Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant

Buffer Solution

Phosphate buffered saline

Preservative Stabilisers	0.09% sodium azide (NaN_3) 1% bovine serum albumin
Approx. Protein Concentrations	IgG concentration 0.05 mg/ml
Immunogen	Raw 264 cell line
External Database Links	**UniProt:** P30204 Related reagents **Entrez Gene:** 20288 Msr1 Related reagents
Synonyms	Scvr
RRID	AB_324818
Fusion Partners	Spleen cells from immunized AO rats were fused with cells of the Y3 rat myeloma cell line
Specificity	**Rat anti Mouse CD204 antibody, clone 2F8** recognizes the murine scavenger receptor class A (SR-A), type I and II, also known as CD204. CD204 is expressed by tissue macrophages and functions both as an endocytic receptor for lipoproteins and as an adhesion receptor for macrophages binding to ligand rich tissues e.g. atherosclerotic lesions. Rat anti Mouse CD204 antibody, clone 2F8 inhibits the uptake of acetylated low-density lipoproteins and also inhibits divalent cation independent adhesion (Fraser *et al.* 1993). Rat anti Mouse CD204 antibody, clone 2F8 recognizes an epitope within SRA that is polymorphic in the SRA from C57BL/6 mice. Rat anti Mouse CD204 antibody, clone 2F8 is therefore unsuitable for use with the C57BL/6 mouse strain (Daugherty *et al.* 2000).
Flow Cytometry	Use 10µl of the suggested working dilution to label 10^6 cells in 100µl. The Fc region of monoclonal antibodies may bindy to cells expressing low affinity Fc receptors. This may be reduced by using SeroBlock FcR (BUF041A/BUF041B).
References	1. Fraser, I. *et al.* (1993) Divalent cation-independent macrophage adhesion inhibited by monoclonal antibody to murine scavenger receptor. Nature. 364 (6435): 343-6. 2. de Villiers, W.J. *et al.* (1994) Macrophage-colony-stimulating factor selectively enhances macrophage scavenger receptor expression and function. J Exp Med. 180 (2): 705-9. 3. Hughes, D.A. *et al.* (1994) Murine M phi scavenger receptor: adhesion function and expression. Immunol Lett. 43 (1-2): 7-14. 4. Hughes, D.A. *et al.* (1995) Murine macrophage scavenger receptor: in vivo expression and function as receptor for macrophage adhesion in lymphoid and non-lymphoid organs. Eur J Immunol. 25 (2): 466-73. 5. Daugherty, A. *et al.* (2000) Polymorphism of class A scavenger receptors in C57BL/6 mice. J Lipid Res. 41 (10): 1568-77.

6. Kaur, H. *et al.* (2003) Identification of a scavenger receptor homologue on nonspecific cytotoxic cells and evidence for binding to oligodeoxyguanosine. Fish Shellfish Immunol. 15: 169-81.
7. Kaur, H. *et al.* (2004) Single-base oligodeoxyguanosine-binding proteins on nonspecific cytotoxic cells: identification of a new class of pattern-recognition receptors. Scand J Immunol. 60: 238-48.
8. Allred, K.F. *et al.* (2006) Estrogen receptor-alpha mediates gender differences in atherosclerosis induced by HIV protease inhibitors. J Biol Chem. 281:1419-25.
9. Anatelli, F. *et al.* (2006) Macrophage-targeted photosensitizer conjugate delivered by intratumoral injection. Mol Pharm. 3: 654-64.
10. Luechtenborg, B. *et al.* (2008) Function of scavenger receptor class A type I/II is not important for smooth muscle foam cell formation. Eur J Cell Biol. 87: 91-9.
11. Nielsen, B.S. *et al.* (2008) Matrix metalloproteinase 13 is induced in fibroblasts in polyomavirus middle T antigen-driven mammary carcinoma without influencing tumor progression. PLoS One. 3 (8): e2959.
12. Aid, S. *et al.* (2008) Neuroinflammatory response to lipopolysaccharide is exacerbated in mice genetically deficient in cyclooxygenase-2. J Neuroinflammation. 5: 17.
13. Neyen, C. *et al.* (2009) Macrophage scavenger receptor A mediates adhesion to apolipoproteins A-I and E. Biochemistry. 48 (50): 11858-71.
14. Moldenhauer, L.M. *et al.* (2010) GM-CSF is an essential regulator of T cell activation competence in uterine dendritic cells during early pregnancy in mice. J Immunol. 185 (11): 7085-96.
15. Cainarca, S. *et al.* (2010) A photoprotein in mouse embryonic stem cells measures Ca2+ mobilization in cells and in animals. PLoS One. 5: e8882.
16. Dewals, B.G. *et al.* (2010) IL-4Ralpha-independent expression of mannose receptor and Ym1 by macrophages depends on their IL-10 responsiveness. PLoS Negl Trop Dis. 4(5):e689.
17. Swain, S.D. *et al.* (2011) *Pneumocystis* infection in an immunocompetent host can promote collateral sensitization to respiratory antigens. Infect Immun. 79 (5): 1905-14.
18. Hald, A. *et al.* (2011) MMP9 is protective against lethal inflammatory mass lesions in the mouse colon. Dis Model Mech. 4: 212-27.
19. Nikolic, D. *et al.* (2011) SR-A ligand and M-CSF dynamically regulate SR-A expression and function in primary macrophages via p38 MAPK activation. BMC Immunol. 12: 37.
20. Sever-Chroneos, Z. *et al.* (2011) Surfactant Protein A (SP-A)-mediated Clearance of *Staphylococcus aureus* Involves Binding of SP-A to the Staphylococcal Adhesin Eap and the Macrophage Receptors SP-A Receptor 210 and Scavenger Receptor Class A. J Biol Chem. 286: 4854-70.
21. Zaynagetdinov, R *et al.* (2011) A critical role for macrophages in promotion of urethane-induced lung carcinogenesis. J Immunol. 187 (11): 5703-11.
22. Yang, C.N. *et al.* (2011) Mechanism mediating oligomeric Aβ clearance by naïve primary microglia. Neurobiol Dis. 42 (3): 221-30.
23. Horlad, H. *et al.* (2013) Corosolic acid impairs tumor development and lung metastasis by inhibiting the immunosuppressive activity of myeloid-derived suppressor cells. Mol Nutr Food Res. 57 (6): 1046-54.
24. Koronyo Y *et al.* (2015) Therapeutic effects of glatiramer acetate and grafted CD115+ monocytes in a mouse model of Alzheimer's disease. Brain. 138 (Pt 8): 2399-422.
25. Tao, J. *et al.* (2015) ClC-3 deficiency prevents atherosclerotic lesion development in

ApoE$^{-/-}$ mice. J Mol Cell Cardiol. 87: 237-247.
26. Prins, J.R. *et al.* (2015) Unstable Foxp3+ regulatory T cells and altered dendritic cells are associated with lipopolysaccharide-induced fetal loss in pregnant interleukin 10-deficient mice. Biol Reprod. 93 (4): 95.
27. Almholt, K. *et al.* (2015) Spontaneous lung and lymph node metastasis in transgenic breast cancer is independent of the urokinase receptor uPAR. Clin Exp Metastasis. 32 (6): 543-54.
28. Verheijden S *et al.* (2015) Identification of a chronic non-neurodegenerative microglia activation state in a mouse model of peroxisomal β-oxidation deficiency. Glia. 63 (9): 1606-20.
29. Tsay, H.J. *et al.* (2016) Identifying N-linked glycan moiety and motifs in the cysteine-rich domain critical for N-glycosylation and intracellular trafficking of SR-AI and MARCO. J Biomed Sci. 23: 27.
30. Fujiwara, Y. *et al.* (2016) Onionin A, a sulfur-containing compound isolated from onions, impairs tumor development and lung metastasis by inhibiting the protumoral and immunosuppressive functions of myeloid cells. Mol Nutr Food Res. 60 (11): 2467-80.
31. Kokubu, Y. *et al.* (2016) Induction of protumoral CD11c(high) macrophages by glioma cancer stem cells through GM-CSF. Genes Cells. 21 (3): 241-51.
32. Sapkota, M. *et al.* (2016) Malondialdehyde-Acetaldehyde-Adducted Surfactant Protein Alters Macrophage Functions Through Scavenger Receptor A. Alcohol Clin Exp Res. 40 (12): 2563-2572.
33. Rentsendorj, A. *et al.* (2018) A novel role for osteopontin in macrophage-mediated amyloid-β clearance in Alzheimer's models. Brain Behav Immun. 67: 163-180.
34. Haupt, F. *et al.* (2019) Retinal myeloid cells regulate tip cell selection and vascular branching morphogenesis via Notch ligand Delta-like 1. Sci Rep. 9 (1): 9798.
35. Yamamoto, M. *et al.* (2019) Evaluation of neurobehavioral impairment in methylmercury-treated KK-Ay mice by dynamic weight-bearing test. J Appl Toxicol. 39 (2): 221-30.
36. Cortes, E. *et al.* (2019) GPER is a mechanoregulator of pancreatic stellate cells and the tumor microenvironment. EMBO Rep. 20 (1): e46556.
37. Tian, L.X. *et al.* (2020) Cytochrome P450 1A1 enhances inflammatory responses and impedes phagocytosis of bacteria in macrophages during sepsis. Cell Commun Signal. 18 (1): 70.
38. Li, S. *et al.* (2020) Activated Bone Marrow-Derived Macrophages Eradicate Alzheimer's-Related Aβ(42) Oligomers and Protect Synapses. Front Immunol. 11: 49.
39. Becerril-García, M.A. *et al.* (2020) Langerhans Cells From Mice at Birth Express Endocytic- and Pattern Recognition-Receptors, Migrate to Draining Lymph Nodes Ferrying Antigen and Activate Neonatal T Cells in vivo. Front Immunol. 11: 744.
40. Koronyo-Hamaoui, M. *et al.* (2020) Peripherally derived angiotensin converting enzyme-enhanced macrophages alleviate Alzheimer-related disease. Brain. 143 (1): 336-58.
41. Shiau, D.J. *et al.* (2020) Hepatocellular carcinoma-derived high mobility group box 1 triggers M2 macrophage polarization via a TLR2/NOX2/autophagy axis. Sci Rep. 10 (1): 13582.
42. Wang, Y. *et al.* (2021) Scavenger receptor A1 participates in uptake of ***Leptospira interrogans*** serovar Autumnalis strain 56606v and inflammation in mouse macrophages. Emerg Microbes Infect. : 1-39.

43. Mañucat-Tan, N. *et al.* (2021) Hypochlorite-induced aggregation of fibrinogen underlies a novel antioxidant role in blood plasma. Redox Biol. 40: 101847.
44. Jia, J. *et al.* (2022) Ferritin triggers neutrophil extracellular trap-mediated cytokine storm through Msr1 contributing to adult-onset Still's disease pathogenesis. Nat Commun. 13 (1): 6804.
45. Zhang, H. *et al.* (2024) Ferritin-mediated neutrophil extracellular traps formation and cytokine storm via macrophage scavenger receptor in sepsis-associated lung injury. Cell Commun Signal. 22 (1): 97.
46. Zuroff, L.R. *et al.* (2020) Effects of IL-34 on Macrophage Immunological Profile in Response to Alzheimer's-Related Aβ(42) Assemblies. Front Immunol. 11: 1449.
47. Qian, J. *et al.* (2023) SRA inhibition improves antitumor potency of antigen-targeted chaperone vaccine. Front Immunol. 14: 1118781.

Further Reading	1. Gordon, S. (1995) The macrophage. Bioessays. 17 (11): 977-86.
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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Regulatory	For research purposes only

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Recommended Useful Reagents

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

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'M437952:250320'

Printed on 31 Mar 2025