

Datasheet: MCA2289A647T

BATCH NUMBER 166554

Description:	RAT ANTI MOUSE DECTIN-1:Alexa Fluor® 647
Specificity:	DECTIN-1
Other names:	CD369
Format:	ALEXA FLUOR® 647
Product Type:	Monoclonal Antibody
Clone:	2A11
Isotype:	IgG2b
Quantity:	25 TESTS/0.25ml

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 - 1/10

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		
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 G from tissue culture supernatant		
Buffer Solution	Phosphate buffered saline		
Preservative	0.09% sodium azide (NaN ₃)		
Stabilisers	1% bovine serum albumin		
Approx. Protein	IgG concentration 0.05 mg/ml		

Concentrations

Immunogen Dectin-1 transfected NIH3T3 cells and recombinant soluble Dectin-1.

External Database Links

UniProt:

[Q6QLQ4](#)

[Related reagents](#)

Entrez Gene:

[56644](#)

Clec7a

[Related reagents](#)

Synonyms Bgr, Clec7a, Dectin1

RRID AB_2081658

Fusion Partners Spleen cells from immunized Fischer rats were fused with cells of the rat Y3 myeloma cell line

Specificity **Rat anti Mouse dectin-1 antibody, clone 2A11** recognizes murine beta-glucan receptor, also known as dectin-1 or CD369. Dectin-1 is predominantly expressed by cells of the monocyte/macrophage and neutrophil lineages, but also at lower levels by dendritic cells and a subpopulation of T cells.

As a major leucocyte receptor for beta-glucan this molecule may have a key role in the immunomodulatory effects of beta-glucans and in the host response to fungal pathogens. Dectin-1 may stimulate reactive oxygen production in macrophages via the protein tyrosine kinase known as Syk.

Rat anti Mouse Dectin-1 antibody, clone 2A11 inhibits the binding of zymosan to macrophages via the beta-glucan receptor.

Flow Cytometry Use 10µl of the suggested working dilution to label 10⁶ cells in 100µl

References

1. Taylor, P.R. *et al.* (2002) The beta-glucan receptor, dectin-1, is predominantly expressed on the surface of cells of the monocyte/macrophage and neutrophil lineages. [J Immunol. 169 \(7\): 3876-82.](#)
2. Reid, D.M. *et al.* (2004) Expression of the beta-glucan receptor, Dectin-1, on murine leukocytes in situ correlates with its function in pathogen recognition and reveals potential roles in leukocyte interactions. [J Leukoc Biol. 76 \(1\): 86-94.](#)
3. Underhill, D.M. *et al.* (2005) Dectin-1 activates Syk tyrosine kinase in a dynamic subset of macrophages for reactive oxygen production. [Blood. 106 \(7\): 2543-50.](#)
4. Lefevre, L. *et al.* (2010) PPARc Ligands Switched High Fat Diet-Induced Macrophage M2b Polarization toward M2a Thereby Improving Intestinal *Candida* Elimination [PLoS One. 5\(9\):e12828.](#)
5. Fei, M. *et al.* (2011) TNF-alpha from inflammatory dendritic cells (DCs) regulates lung IL-17A/IL-5 levels and neutrophilia versus eosinophilia during persistent fungal infection. [Proc Natl Acad Sci U S A. 108 \(13\): 5360-5.](#)
6. Gazi, U. *et al.* (2011) Fungal Recognition Enhances Mannose Receptor Shedding

- through Dectin-1 Engagement. [J Biol Chem. 286: 7822-9.](#)
7. McDonald, J.U. *et al.* (2011) *In vivo* functional analysis and genetic modification of *in vitro*-derived mouse neutrophils. [FASEB J. 25 \(6\): 1972-82.](#)
 8. Dewals, B.G. *et al.* (2010) IL-4R α -independent expression of mannose receptor and Ym1 by macrophages depends on their IL-10 responsiveness. [PLoS Negl Trop Dis. 4: e689.](#)
 9. Galès, A. *et al.* (2010) PPAR γ controls dectin-1 expression required for host antifungal defense against *Candida albicans*. [PLoS Pathog. 6: e1000714.](#)
 10. Goodridge, H.S. *et al.* (2009) Differential use of CARD9 by dectin-1 in macrophages and dendritic cells. [J Immunol. 182: 1146-54.](#)
 11. Coates, P.J. *et al.* (2008) Indirect macrophage responses to ionizing radiation: implications for genotype-dependent bystander signaling. [Cancer Res. 68: 450-6.](#)
 12. Dioszeghy, V. *et al.* (2008) 12/15-Lipoxygenase regulates the inflammatory response to bacterial products *in vivo*. [J Immunol. 181: 6514-24.](#)
 13. Hohl, T.M. (2008) Caspofungin modulates inflammatory responses to *Aspergillus fumigatus* through stage-specific effects on fungal beta-glucan exposure. [J Infect Dis. 198: 176-85.](#)
 14. Palma, A.S. *et al.* (2006) Ligands for the beta-glucan receptor, Dectin-1, assigned using "designer" microarrays of oligosaccharide probes (neoglycolipids) generated from glucan polysaccharides. [J Biol Chem. 281: 5771-9.](#)
 15. Sindrilaru, A. *et al.* (2011) An unrestrained proinflammatory M1 macrophage population induced by iron impairs wound healing in humans and mice. [J Clin Invest. 121: 985-97.](#)
 16. Anandasabapathy, N. *et al.* (2011) Flt3L controls the development of radiosensitive dendritic cells in the meninges and choroid plexus of the steady-state mouse brain. [J Exp Med. 208 \(8\): 1695-705.](#)
 17. Takahara, K. *et al.* (2012) Efficient capture of *Candida albicans* and zymosan by SIGNR1 augments TLR2-dependent TNF- α production. [Int Immunol. 24 \(2\): 89-96.](#)
 18. Fransen F *et al.* (2015) BALB/c and C57BL/6 Mice Differ in Polyreactive IgA Abundance, which Impacts the Generation of Antigen-Specific IgA and Microbiota Diversity. [Immunity. 43 \(3\): 527-40.](#)
 19. Urso, K. *et al.* (2016) Anion Exchanger 2 Regulates Dectin-1-Dependent Phagocytosis and Killing of *Candida albicans*. [PLoS One. 11 \(7\): e0158893.](#)
 20. Zhou, J. *et al.* (2016) Therapeutic targeting of myeloid-derived suppressor cells involves a novel mechanism mediated by clusterin. [Sci Rep. 6: 29521.](#)
 21. Pinke, K.H. *et al.* (2016) Mast cells phagocyte *Candida albicans* and produce nitric oxide by mechanisms involving TLR2 and Dectin-1. [Immunobiology. 221 \(2\): 220-7.](#)
 22. Berven, L. *et al.* (2015) Particulate yeast β -glucan is internalized by RAW 264.7 macrophages and reduces the activity of the tumor-associated protease legumain [Bioactive Carbohydrates and Dietary Fibre. 6 \(1\): 15-23.](#)
 23. Walachowski, S. *et al.* (2016) Triggering Dectin-1-Pathway Alone Is Not Sufficient to Induce Cytokine Production by Murine Macrophages. [PLoS One. 11 \(2\): e0148464.](#)
 24. Ferguson, B.J. *et al.* (2015) The *Schistosoma mansoni* T2 ribonuclease omega-1 modulates inflammasome-dependent IL-1 β secretion in macrophages. [Int J Parasitol. 45 \(13\): 809-13.](#)
 25. Masuda, Y. *et al.* (2015) Soluble β -glucan from *Grifola frondosa* induces tumor regression in synergy with TLR9 agonist via dendritic cell-mediated immunity. [J Leukoc](#)

[Biol. 98 \(6\): 1015-25.](#)

26. Baldwin, K.T. *et al.* (2015) Neuroinflammation triggered by β -glucan/dectin-1 signaling enables CNS axon regeneration. [Proc Natl Acad Sci U S A. 112 \(8\): 2581-6.](#)

27. Quayle K *et al.* (2015) The TLR2 agonist in polysaccharide-K is a structurally distinct lipid which acts synergistically with the protein-bound β -glucan. [J Nat Med. 69 \(2\): 198-208.](#)

28. Chang, T.H. *et al.* (2017) Dectin-2 is a primary receptor for NLRP3 inflammasome activation in dendritic cell response to *Histoplasma capsulatum*. [PLoS Pathog. 13 \(7\): e1006485.](#)

29. Seo, B.S. *et al.* (2016) Dectin-1 agonist selectively induces IgG1 class switching by LPS-activated mouse B cells. [Immunol Lett. 178: 114-21.](#)

30. Thompson, A. *et al.* (2019) The protective effect of inflammatory monocytes during systemic *C. albicans* infection is dependent on collaboration between C-type lectin-like receptors. [PLoS Pathog. 15 \(6\): e1007850.](#)

31. Uno, A. *et al.* (2021) A novel β -glucan-oligonucleotide complex selectively delivers siRNA to APCs via Dectin-1. [J Control Release. 338: 792-803.](#)

32. Deerpake, M.E. *et al.* (2021) Dectin-1 limits autoimmune neuroinflammation and promotes myeloid cell-astrocyte crosstalk via Card9-independent expression of Oncostatin M. [Immunity. 54 \(3\): 484-498.e8.](#)

33. Niekamp, P. *et al.* (2021) Sphingomyelin Biosynthesis Is Essential for Phagocytic Signaling during *Mycobacterium tuberculosis*. Host Cell Entry. [mBio. 12 \(1\): e03141-20.](#)

34. Oh, S. *et al.* (2022) Pathogen size alters C-type lectin receptor signaling in dendritic cells to influence CD4 Th9 cell differentiation. [Cell Rep. 38 \(13\): 110567.](#)

35. Masuda, Y. *et al.* (2023) Maitake α -glucan promotes differentiation of monocytic myeloid-derived suppressor cells into M1 macrophages. [Life Sci. 317: 121453.](#)

36. Yamashita, H. *et al.* (2022) Comprehensive expression analysis with cell-type-specific transcriptome in ALS-linked mutant SOD1 mice: Revisiting the active role of glial cells in disease. [Front Cell Neurosci. 16: 1045647.](#)

37. Erkelens, M.N. *et al.* (2020) Intestinal Macrophages Balance Inflammatory Expression Profiles via Vitamin A and Dectin-1-Mediated Signaling. [Front Immunol. 11: 551.](#)

38. Zimara, N. *et al.* (2018) Dectin-1 Positive Dendritic Cells Expand after Infection with Leishmania major Parasites and Represent Promising Targets for Vaccine Development. [Front Immunol. 9: 263.](#)

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

Acknowledgements

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