

Datasheet: MCA2289

Description:	RAT ANTI MOUSE DECTIN-1
Specificity:	DECTIN-1
Format:	Purified
Product Type:	Monoclonal Antibody
Clone:	2A11
Isotype:	IgG2b
Quantity:	0.25 mg

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	▪			1/10 - 1/50
Immunohistology - Frozen (1)	▪			
Immunohistology - Paraffin		▪		
Immunohistology - Resin		▪		
ELISA			▪	
Immunoprecipitation	▪			
Western Blotting			▪	

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.

(1)The epitope recognised by 2A11 is sensitive to H₂O₂ treatment, therefore quenching with 0.3% H₂O₂ should be performed after incubation with the primary antibody. The epitope recognised by this antibody is reported to be sensitive to formaldehyde fixation and tissue processing. Bio-Rad recommends the use of acetone fixation for frozen sections.

Target Species	Mouse
Product Form	Purified IgG - liquid
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
Carrier Free	Yes
Approx. Protein Concentrations	IgG concentration 1.0 mg/ml
Immunogen	Dectin-1 transfected NIH3T3 cells and recombinant soluble Dectin-1.
External Database Links	<p>UniProt: Q6QLQ4 Related reagents</p> <p>Entrez Gene: 56644 Clec7a Related reagents</p>
Synonyms	Bgr, Clecsf12, Dectin1
RRID	AB_324904
Fusion Partners	Spleen cells from immunised Fischer rats were fused with cells of the rat Y3 myeloma cell line
Specificity	<p>Rat anti Mouse Dectin-1 antibody, clone 2A11 recognizes murine beta-glucan receptor, also known as Dectin-1. 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.</p> <p>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.</p> <p>Rat anti Mouse Dectin-1 antibody, clone 2A11 inhibits the binding of zymosan to macrophages via the beta-glucan receptor.</p>
Flow Cytometry	Use 10ul of the suggested working dilution to label 10 ⁶ cells in 100ul
References	<ol style="list-style-type: none"> 1. Brown, G.D. <i>et al.</i> (2002) Dectin-1 is a major beta-glucan receptor on macrophages. J Exp Med. 196 (3): 407-12. 2. Taylor, P.R. <i>et al.</i> (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. 3. Reid, D.M. <i>et al.</i> (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.

4. 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.](#)
5. 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.](#)
6. 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.](#)
7. Gazi, U. *et al.* (2011) Fungal Recognition Enhances Mannose Receptor Shedding through Dectin-1 Engagement. [J Biol Chem. 286: 7822-9.](#)
8. 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.](#)
9. 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: e689.](#)
10. Galès, A. *et al.* (2010) PPARgamma controls dectin-1 expression required for host antifungal defense against *Candida albicans*. [PLoS Pathog. 6: e1000714.](#)
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.](#)

Storage Store at +4°C. DO NOT FREEZE.
This product should be stored undiluted. Should this product contain a precipitate we recommend microcentrifugation before use.

Guarantee 12 months from date of despatch

Health And Safety Information Material Safety Datasheet documentation #10040 available at:
10040: <https://www.bio-rad-antibodies.com/uploads/MSDS/10040.pdf>

Regulatory For research purposes only

Related Products

Recommended Secondary Antibodies

Goat Anti Rat IgG (STAR69...) [FITC](#)
Goat Anti Rat IgG (STAR73...) [RPE](#)

Rabbit Anti Rat IgG (STAR17...)	FITC
Goat Anti Rat IgG (STAR131...)	Alk. Phos., Biotin
Goat Anti Rat IgG (STAR72...)	HRP
Goat Anti Rat IgG (MOUSE ADSORBED) (STAR71...)	DyLight®650, DyLight®800
Rabbit Anti Rat IgG (STAR21...)	HRP
Rabbit Anti Rat IgG (STAR16...)	DyLight®800

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