

Datasheet: MCA2289T

Description:	RAT ANTI MOUSE DECTIN-1
Specificity:	DECTIN-1
Other names:	CD369
Format:	Purified
Product Type:	Monoclonal Antibody
Clone:	2A11
Isotype:	IgG2b
Quantity:	25 µg

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 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.

(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 (NaN ₃)
---------------------------------	--

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	UniProt: Q6QLQ4 Related reagents Entrez Gene: 56644 Clec7a Related reagents
--------------------------------	--

Synonyms	Bgr, Clecsf12, Dectin1
-----------------	------------------------

RRID	AB_1100479
-------------	------------

Fusion Partners	Spleen cells from immunized 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 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.</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 macropahges 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 10µl of the suggested working dilution to label 10 ⁶ cells in 100µl
-----------------------	--

References	<ol style="list-style-type: none">1. 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): 3876-82.2. 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.
-------------------	--

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-4Ralpha-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) PPARgamma 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. Deerhake, 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

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:
<https://www.bio-rad-antibodies.com/SDS/MCA2289T>
10040

Regulatory For research purposes only

Related Products

Recommended Secondary Antibodies

Rabbit Anti Rat IgG (STAR16...)	DyLight®800
Rabbit Anti Rat IgG (STAR17...)	FITC
Goat Anti Rat IgG (STAR72...)	HRP
Goat Anti Rat IgG (STAR69...)	FITC
Goat Anti Rat IgG (STAR73...)	RPE
Rabbit Anti Rat IgG (STAR21...)	HRP
Goat Anti Rat IgG (MOUSE ADSORBED) (STAR71...)	DyLight®550 , DyLight®650 , DyLight®800
Goat Anti Rat IgG (STAR131...)	Alk. Phos. , Biotin

North & South America Tel: +1 800 265 7376

Fax: +1 919 878 3751

Email: antibody_sales_us@bio-rad.com

Worldwide

Tel: +44 (0)1865 852 700

Fax: +44 (0)1865 852 739

Email: antibody_sales_uk@bio-rad.com

Europe

Tel: +49 (0) 89 8090 95 21

Fax: +49 (0) 89 8090 95 50

Email: antibody_sales_de@bio-rad.com

To find a batch/lot specific datasheet for this product, please use our online search tool at: [bio-rad-antibodies.com/datasheets](https://www.bio-rad-antibodies.com/datasheets)

'M414027:221130'

Printed on 27 Aug 2024

© 2024 Bio-Rad Laboratories Inc | [Legal](#) | [Imprint](#)