

DESCRIPTION

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| Species Reactivity | Mouse |
| Specificity | Detects mouse Dectin-1/CLEC7A in direct ELISAs and Western blots. In Western blots, approximately 10% cross-reactivity with recombinant human (rh) Dectin-1 is observed and no cross-reactivity with recombinant mouse Dectin-2 or rhDLEC is observed. |
| Source | Monoclonal Rat IgG _{2A} Clone # 218820 |
| Purification | Protein A or G purified from hybridoma culture supernatant |
| Immunogen | Mouse myeloma cell line NS0-derived recombinant mouse Dectin-1/CLEC7A Phe69-Leu244 Accession # Q6QLQ4 |
| Conjugate | Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 nm |
| Formulation | Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

| | Recommended Concentration | Sample |
|-----------------------|---------------------------------|-----------------------------------------------|
| Flow Cytometry | 0.25-1 µg/10 ⁶ cells | RAW 264.7 mouse monocyte/macrophage cell line |

PREPARATION AND STORAGE

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|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Shipping | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| Stability & Storage | Protect from light. Do not freeze. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied. |

BACKGROUND

Dectin-1, also known as CLEC7A and the β-glucan receptor, is a 43 kDa type II transmembrane C-type lectin that functions in the innate immune response to fungal pathogens. Although Dectin-1 resembles other CLEC molecules structurally, it binds ligands in a calcium-independent manner (1, 2). Mature mouse Dectin-1 is a 244 amino acid (aa) glycoprotein that consists of a short ITAM-containing cytoplasmic tail, a transmembrane segment, and a stalk and carbohydrate recognition domain (CRD) in the extracellular domain (3). The CRD of mouse Dectin-1 shares 61%, 60%, and 87% aa sequence identity with that of bovine, human, and rat Dectin-1, respectively. It shares 25%-34% aa sequence identity with the CRD of other subgroup members CLEC-1, CLEC-2, CLEC9A, CLEC12B, LOX-1, and M1CL. Mouse Dectin-1 is alternately spliced, generating a variant that lacks the stalk region (4). Mouse Dectin-1 is expressed on monocytes, macrophages, and neutrophils, and on some populations of dendritic cells and T cells (5). It is upregulated on macrophages by GM-CSF, IL-4, or IL-13 and downregulated by dexamethasone, IL-10, or LPS (6). The CRD selectively binds β-glucan polymers, a major component of yeast and mycobacterial cell walls (7). Yeast β-glucan is accessible to Dectin-1 only at sites of cell budding, and Dectin-1 does not recognize the filamentous form of yeast (8). Dectin-1 mediates the phagocytosis of zymosan particles and intact yeast (8-10). It co-localizes with TLR2 in the presence of zymosan, and the two receptors cooperate in ligand recognition and the propagation of proinflammatory signaling (9, 11-13). Dectin-1 interaction with the tetraspanin CD37 increases its stability on the cell membrane and inhibits ligand-induced signaling (14). Genetic knockout of Dectin-1 in mice increases their susceptibility to pathogenic infection (15, 16).

References:

1. Kanazawa, N. (2007) *J. Dermatol. Sci.* **45**:77.
2. Brown, G.D. (2006) *Nat. Rev. Immunol.* **6**:33.
3. Ariizumi, K. *et al.* (2000) *J. Biol. Chem.* **275**:20157.
4. Heinsbroek, S.E.M. *et al.* (2006) *J. Immunol.* **176**:5513.
5. Taylor, P.R. *et al.* (2002) *J. Immunol.* **169**:3876.
6. Willment, J.A. *et al.* (2003) *J. Immunol.* **171**:4569.
7. Palma, A.S. *et al.* (2006) *J. Biol. Chem.* **281**:5771.
8. Gantner, B.N. *et al.* (2005) *EMBO J.* **24**:1277.
9. Gantner, B.N. *et al.* (2003) *J. Exp. Med.* **197**:1107.
10. Kennedy, A.D. *et al.* (2007) *Eur. J. Immunol.* **37**:467.
11. Brown, G.D. *et al.* (2003) *J. Exp. Med.* **197**:1119.
12. Yadav, M. and J.S. Schorey (2006) *Blood* **108**:3168.
13. Suram, S. *et al.* (2006) *J. Biol. Chem.* **281**:5506.
14. Meyer-Wentrup, F. *et al.* (2007) *J. Immunol.* **178**:154.
15. Saijo, S. *et al.* (2007) *Nat. Immunol.* **8**:39.
16. Taylor, P.R. *et al.* (2007) *Nat. Immunol.* **8**:31.

Mouse Dectin-1/CLEC7A Alexa Fluor® 594-conjugated Antibody

Monoclonal Rat IgG_{2A} Clone # 218820

Catalog Number: FAB17561T
100 µg

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