Mouse Dectin-1/CLEC7A Alexa Fluor® 488-conjugated Antibody

Monoclonal Rat IgG_{2A} Clone # 218820

Catalog Number: FAB17561G
100 TESTS

DESCRIPTION

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 488 Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm
Formulation	Supplied 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.

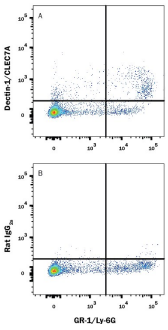
APPLICATIONS

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	5 µL/10^6 cells	See Below

DATA

Flow Cytometry



Detection of Dectin-1/CLEC7A in Mouse Blood Monocytes by Flow Cytometry. Mouse whole blood monocytes were stained with Rat Anti-Mouse Gr-1/Ly-6G APC-conjugated Monoclonal Antibody (Catalog # FAB1037A) and either (A) Rat Anti-Mouse Dectin-1/CLEC7A Alexa Fluor® 488-conjugated Monoclonal Antibody (Catalog # FAB17561G) or (B) Rat IgG_{2A} Alexa Fluor 488 Isotype Control (Catalog # IC006G). View our protocol for Staining Membrane-associated Proteins.

PREPARATION AND STORAGE

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.** ● 12 months from date of receipt, 2 to 8 °C as supplied.

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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 MICL. 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:

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