Human Dectin-1/CLEC7A
Alexa Fluor® 647-conjugated Antibody

Monoclonal Mouse IgG_{2B} Clone # 259931

Catalog Number: FAB1859R

100 µg

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Dectin-1/CLEC7A in direct ELISAs. In directs ELISAs, less than 10% cross-reactivity with recombinant human (rh) DLEC and no cross-reactivity with recombinant mouse Dectin-1 or rhDectin-2 is observed.
Source	Monoclonal Mouse IgG_{2B} Clone # 259931
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Dectin-1/CLEC7A Thr66-Met201 Accession # NP_072092
Conjugate	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 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	Human whole blood monocytes

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.

BACKGROUND

Dectin-1, also known as CLEC7A and the β-glucan receptor, is a 33 kDa type II transmembrane C-type lectin that participates in the innate immune response to fungal pathogens. Although Dectin-1 structurally resembles other CLEC molecules, it binds its ligands in a calcium-independent manner (1, 2). Mature human Dectin-1 consists of a short N-terminal ITAM-containing cytoplasmic tail, a transmembrane segment, and a C-terminal stalk with a carbohydrate recognition domain (CRD) in the extracellular domain (3, 4). Alternate splicing generates one major splice form that lacks the stalk region (3-5). This isoform is expressed on the surface of monocytes, macrophages, myeloid DC, neutrophils, eosinophils, B cells, and $CD4^+$ T cells (6). The CRD selectively binds β-glucan polymers, a major component of yeast and mycobacterial cell walls (5-7). Yeast β-glucan is accessible to Dectin-1 only during the process of cell budding. Dectin-1 does not recognize the filamentous form of yeast (8). Dectin-1 mediates the phagocytosis of zymosan particles and intact yeast (8-10). In the membrane, Dectin-1 colocalizes 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 also interacts with tetraspanin CD37. This increases its stability on the cell membrane and inhibits ligand-induced signaling (14). Dectin-1 knockout mice show increased susceptibility to pathogenic infection (15-16). The CRD of human Dectin-1 shares 77%, 60%, and 60% amino acid (aa) sequence identity with that of bovine, mouse and rat Dectin-1, respectively. It shares 29%-39% aa sequence identity with the CRD of other subgroup members, including CLEC-1, CLEC-2, CLEC9A, CLEC12B, LOX-1, and MICL.

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