

DESCRIPTION

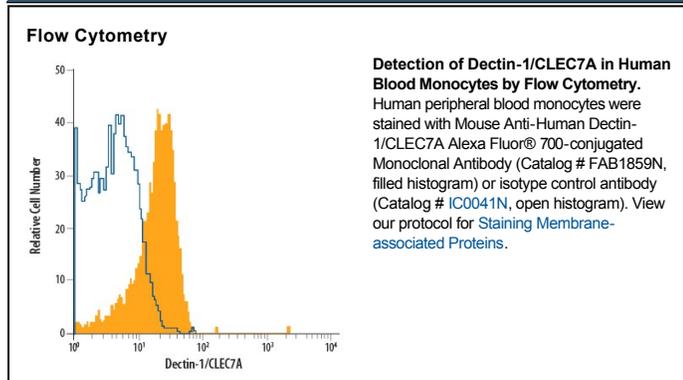
Species Reactivity	Human
Specificity	Detects human Dectin-1/CLEC7A in direct ELISAs. In direct ELISAs, less than 10% cross-reactivity with recombinant human (rh) DLEC and no cross-reactivity with recombinant mouse Dectin-1 or rhDectin-2 is observed.
Source	Monoclonal Mouse IgG _{2B} Clone # 259931
Purification	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 700 Excitation Wavelength: 675-700 nm Emission Wavelength: 723 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



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.

References:

1. Kanazawa, N. (2007) *J. Dermatol. Sci.* **45**:77.
2. Brown, G.D. (2006) *Nat. Rev. Immunol.* **6**:33.
3. Hernanz-Falcon, P. *et al.* (2001) *Immunogenetics* **53**:288.
4. Yokota, K. *et al.* (2001) *Gene* **272**:51.
5. Willment, J.A. *et al.* (2001) *J. Biol. Chem.* **276**:43818.
6. Willment, J.A. *et al.* (2005) *Eur. J. Immunol.* **35**:1539.
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.

PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.