

# Anti-mDectin-1a-IgG

Neutralizing monoclonal antibody against mouse Dectin-1a

Catalog # mabg-mdecta

For research use only, not for diagnostic or therapeutic use

Version # 14L01-MM

## PRODUCT INFORMATION

### Content

100 µg purified anti-mDectin-1a-IgG, provided azide-free and lyophilized

**Clone:** R1-4E4

**Isotype:** Rat IgG2b

**Formulation:** 0.2 µm filtered solution in 68 mM phosphate buffer with 91 mM glycine, 5% w/v saccharose and stabilizing agents

### Antibody resuspension

Add 1 ml of sterile water to obtain a concentration of 0.1 mg/ml

### Storage

- Product is shipped at room temperature. Store lyophilized antibody at -20°C. Product is stable for 6 months.

- Reconstituted antibody is stable 1 month when stored at 4°C and 6 months when aliquoted and stored at -20°C. Avoid repeated freeze-thaw cycles.

### Quality control

- The absence of bacterial contamination (e.g. endotoxins and peptidoglycans) is controlled using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.

- The antibody is validated for neutralization and flow cytometry using HEK-Blue™ Dectin cells.

## BACKGROUND

Dectin-1 is a member of the C-type lectin receptor (CLR) family and plays an important role in antifungal innate immunity. Dectin-1 is expressed on phagocytic cells, including macrophages and neutrophils. The Dectin-1 receptor is expressed as two predominant isoforms A and B<sup>1</sup>. Dectin-1 is a specific receptor for β-glucans<sup>2</sup>. β-Glucans are glucose polymers found in the cell walls of fungi, including the yeasts *Saccharomyces cerevisiae* and *Candida albicans*. Upon binding to its ligand, Dectin-1 triggers phagocytosis and signaling through the kinase Syk and the adaptors CARD9-Bcl10-Malt1 leading to the production of reactive oxygen species (ROS), the activation of NF-κB and the subsequent production of pro-inflammatory cytokines<sup>3, 4</sup>. Dectin-1 signaling has been shown to collaborate with Toll-like receptor 2 (TLR2) signaling to enhance the responses triggered by each receptor<sup>4,5</sup>.

**1. Herre J. et al., 2004.** The role of dectin-1 in antifungal immunity. *Crit Rev Immunol.* 24(3):193-204. **2. Brown GD. et al., 2003.** Dectin-1 mediates the biological effects of beta-glucans. *J Exp Med.* 197: 1119- 24. **3. Gross O. et al., 2006.** Card9 controls a non-TLR signaling pathway for innate anti-fungal immunity. *Nature.* 442:651- 6. **4. Dennehy KM. & Brown GD., 2007.** The role of the beta-glucan receptor Dectin-1 in control of fungal infection. *J Leukoc Biol.*82(2):253-8. **5. Gantner BN. et al., 2003.** Collaborative induction of inflammatory responses by dectin-1 and Toll- like receptor 2. *J Exp Med.* 197:1107- 17.

### TECHNICAL SUPPORT

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## DESCRIPTION

Anti-mDectin-1a-IgG is a monoclonal rat IgG2b antibody against mouse Dectin-1a (mDectin-1). Anti-mDectin-1a-IgG recognizes specifically the isoform A of mDectin-1. Anti-mDectin-1a-IgG does not recognize the isoform B of mDectin-1. This antibody was screened for flow cytometry and neutralization activity. Anti-mDectin-1a-IgG is produced in hybridomas and purified by affinity chromatography with protein G / agarose.

## APPLICATION

Anti-mDectin-1a-IgG is a neutralizing antibody, it blocks mDectin-1a-induced cellular activation. Anti-mDectin-1a-IgG can also be used for flow cytometry.

### Applications tested

1. Anti-mDectin-1a-IgG has been tested in neutralizing experiments performed in HEK293 cells that were transfected with the mDectin-1 gene and other genes from the Dectin-1 signaling pathway. These cells also stably express a secreted embryonic alkaline phosphatase (SEAP) reporter gene.

Transfected cells were incubated with 100 ng - 10 µg/ml anti-mDectin-1a-IgG for 1 hour prior to the addition of the Dectin-1 ligand HKCA (10<sup>8</sup> cells/ml).

Following an overnight incubation, neutralization of Dectin-1 signaling by anti-mDectin-1a-IgG was determined by assessing SEAP production using QUANTI-Blue™, a SEAP detection medium. QUANTI-Blue™ turns blue following Dectin-1a stimulation but remains pink if neutralization occurs.

2. For flow cytometry, anti-mDectin-1a-IgG has been tested at 500 - 2000 ng/10<sup>6</sup> cells with PE goat anti-rat IgG2b secondary antibody for indirect immunofluorescence staining.

## RELATED PRODUCTS

Product	Catalog Code
QUANTI-Blue™	rep-qbl
pUNO1-mDectin1a	puno-mdectin1a
pNiFty2-SEAP	pnifty2-seap
<b>Dectin-1 Agonists</b>	
Curdlan AL	tlrl-cura
HKCA (Heat killed <i>C. albicans</i> )	tlrl-hkca
HKSC (Heat killed <i>S. cerevisiae</i> )	tlrl-hksc
WGP Dispersable (Whole Glucan particles)	tlrl-wgp
Zymosan Depleted	tlrl-dzn