

# Fc-mDectin-1a

Soluble murine Dectin-1a fused to an IgG1 Fc domain

Catalog code: fc-mdec1a-2

<http://www.invivogen.com/fc-mdectin-1a>

For research use only, not for diagnostic or therapeutic use

Version 23L06-MM

## PRODUCT INFORMATION

### Contents

- 2 x 50 µg lyophilized Fc-mDectin-1a
- 1.5 ml endotoxin-free water

### Formulation

0.2 µm filtered solution in phosphate buffer with glycine, saccharose and stabilizing agents

### Storage and stability

- Product is shipped at room temperature. Upon receipt, store at -20 °C.
- Reconstituted Fc-mDectin-1a is stable for 1 month when stored at 4 °C and 1 year when stored at -20 °C. Avoid repeated freeze-thaw cycles.

### Quality control

- This product has been validated for neutralization.
- The absence of bacterial contamination (e.g. lipoproteins and endotoxins) is confirmed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.

## DESCRIPTION

Fc-mDectin-1a is a soluble murine Dectin-1 receptor constructed by fusing the C-terminal extracellular domain of mouse Dectin-1a (aa 67-244) to the C-terminus of an engineered human IgG1 Fc domain with a 10 amino acid linker. Fc-mDectin-1a has an apparent molecular weight of ~55 kDa on SDS-PAGE. Fc-mDectin-1a is expressed in CHO cells and purified by protein G affinity chromatography.

## BACKGROUND

Dectin-1 is a pattern-recognition receptor that plays an important role in antifungal innate immunity. Dectin-1, which is expressed on phagocytes, is a specific receptor for  $\beta$ -glucans<sup>1</sup>.  $\beta$ -glucans are glucose polymers found in cell walls of fungi, including yeast *S. cerevisiae* and *C. albicans*. Dectin-1 binds and internalizes  $\beta$ -glucans and mediates the production of reactive oxygen species (ROS), activation of NF- $\kappa$ B and subsequent secretion of proinflammatory cytokines. Zymosan, a cell wall preparation of *S. cerevisiae* composed primarily of  $\beta$ -glucan, mannan, mannoprotein and chitin, induces immune responses that are both Dectin-1 and TLR-2-dependent<sup>2</sup>.

1. Brown GD. *et al.*, 2003. Dectin-1 mediates the biological effects of beta-glucans. *J Exp Med.* 197: 1119- 24. 2. Gantner BN. *et al.*, 2003. Collaborative induction of inflammatory responses by dectin-1 and Toll-like receptor 2. *J Exp Med.* 197: 1107- 17.

## METHOD

### Preparation of stock solution (100 µg/ml)

- Add 500 µl of endotoxin-free water (provided) to the 50 µg of Fc-mDectin-1a.
- Mix by pipetting. Do not vortex.

## APPLICATIONS

Fc-mDectin-1a can be used for receptor binding assays and to neutralize mouse Dectin-1-induced cellular activation. The optimal working concentration of Fc-mDectin-1a must be determined empirically for a given set of experimental conditions.

### Receptor binding assays

Typically, 1 ng-1 µg/ml Fc-mDectin-1a is incubated with 0.1-5 µg of an immobilized Dectin-1 ligand. The receptor-ligand binding is detected using a labeled secondary anti-IgG antibody.

### Neutralization studies

We recommend to incubate various concentrations of Fc-mDectin-1a with murine Dectin-1a expressing cells, prior to the addition of a Dectin-1 ligand (typically 1-100 µg/ml). The neutralizing activity of Fc-mDectin-1a is determined by assessing Dectin-1-induced cell activation.

## RELATED PRODUCTS

Product	Catalog Code
<b>Dectin-1 ligands</b>	
Curdlan	tlrl-curd
Zymosan Depleted	tlrl-zyd
HKCA (heat killed <i>C. albicans</i> )	tlrl-hkca
<b>Dectin-1 expressing cells</b>	
RAW-Blue™ cells	raw-sp
<b>Dectin-1 plasmid</b>	
pUNO1-mDectin1	puno1-mdectin1

## TECHNICAL SUPPORT

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