

# Fc-hDectin-1a

Soluble human dectin-1a fused to an IgG1 Fc domain

Catalog # fc-hdec1a

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

For research use only, not for diagnostic or therapeutic use

Version # 17L04-MM

## PRODUCT INFORMATION

### Content

- 50 µg lyophilized Fc-hDectin-1a
- 1.5 ml endotoxin-free water

### Formulation

0.2 µm filtered solution in phosphate buffered saline (pH 7.4) containing 10% v/v FBS

### Storage

- Product is shipped at room temperature. Store lyophilized Fc-hDectin-1a at -20°C. Product is stable for at least 1 year.
- Reconstituted Fc-hDectin-1a is stable for 1 month when stored at 4°C and for 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) has been confirmed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.

## DESCRIPTION

Fc-hDectin-1a is a soluble human Dectin-1 receptor constructed by fusing the C-terminal extracellular domain of human Dectin-1a (aa 67-247) to the C-terminus of an engineered human IgG1 Fc domain with a 10 amino acid linker. Fc-hDectin-1a has an apparent molecular weight of ~55 kDa on SDS-PAGE. Fc-hDectin-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 β-glucans<sup>1</sup>. β-glucans are glucose polymers found in cell walls of fungi, including yeast *S. cerevisiae* and *C. albicans*. Dectin-1 binds and internalizes β-glucans and mediates the production of reactive oxygen species (ROS), activation of NF-κB and subsequent secretion of proinflammatory cytokines. Zymosan, a cell wall preparation of *S. cerevisiae* composed primarily of β-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- likereceptor 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-hDectin-1a.
- Mix by pipetting. Do not vortex.

## APPLICATIONS

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

### Receptor binding assays

Typically 1 ng-1 µg/ml Fc-hDectin-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-hDectin-1a with human Dectin-1a expressing cells, prior to the addition of a Dectin-1 ligand (typically 1-100 µg/ml). The neutralizing activity of Fc-hDectin-1a is determined by assessing Dectin-1-induced cell activation.

## RELATED PRODUCTS

Product	Catalog Code
<b>Dectin-1 ligands</b>	
Beta-glucan peptide (BGP)	tlrl-bgp
Curdlan	tlrl-curd
Zymosan Depleted	tlrl-zyd
HKCA (heat killed <i>C. albicans</i> )	tlrl-hkca
Laminarin	tlrl-lam
Pustulan	tlrl-pst
Schizophyllan	tlrl-spg
Scleroglucan	tlrl-seg
<b>Anti-Dectin-1 antibody</b>	
Anti-hDectin-1-IgG	mabg-hdect
<b>Dectin-1 plasmid</b>	
pUNO1-hDectin1a	puno1-hdectin1a

## TECHNICAL SUPPORT

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