

Fc-hDectin-1a

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

Catalog code: fc-hdec1a-2

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

For research use only, not for diagnostic or therapeutic use

Version 24A02-MM

PRODUCT INFORMATION

Contents

- 2 x 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 and stability

- Product is shipped at room temperature. Upon receipt, store at -20°C.
- 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-glucans¹. 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-dependent².

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-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
Dectin-1 ligands	
Curdlan	tlrl-curd
Zymosan Depleted	tlrl-zyd
HKCA (heat killed <i>C. albicans</i>)	tlrl-hkca
Laminarin	tlrl-lam
Pustulan	tlrl-pst
Anti-Dectin-1 antibody	
Anti-hDectin-1-IgG	mabg-hdect-2
Dectin-1 plasmid	
pUNO1-hDectin1a	puno1-hdectin1a

TECHNICAL SUPPORT

InvivoGen USA (Toll-Free): 888-457-5873

InvivoGen USA (International): +1 (858) 457-5873

InvivoGen Europe: +33 (0) 5-62-71-69-39

InvivoGen Asia: +852 3622-3480

E-mail: info@invivogen.com