

Zymosan Depleted

Hot alkali treated Zymosan; Dectin-1 ligand

Catalog # tlr1-zyd

<http://www.invivogen.com/zymosan-depleted>

For research use only

Version # 16L05-MM

PRODUCT INFORMATION

Content:

- 10 mg Zymosan Depleted
- 10 ml sterile endotoxin-free water

Storage:

- Zymosan Depleted is shipped at room temperature and should be stored at -20 °C.
- Resuspended Zymosan Depleted may be stored at -20 °C for 1 month.

Quality control:

- The Dectin-1 activity has been tested using HEK-Blue™ hDectin-1b cells.
- The absence of bacterial contamination (e.g. lipoproteins & endotoxins) has been confirmed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.

DESCRIPTION

Zymosan Depleted was obtained by treating zymosan (an insoluble preparation of *Saccharomyces cerevisiae* cell wall) with hot alkali to remove its Toll-like receptor (TLR)-stimulating properties. Hence, Zymosan Depleted activates the C-type lectin receptor Dectin-1 but not TLR2. The use of hot alkali or organic solvents to abrogate the TLR2-dependent response of zymosan whilst preserving the Dectin-1 activity has been described previously^{1,2}.

Dectin-1, a phagocytic receptor expressed on macrophages and dendritic cells, is a specific receptor for β -glucans³, the glucose polymers found in the cell walls of fungi such as *C. albicans* and *S. cerevisiae*. More precisely, this receptor binds and internalizes the β -glucans leading to the production of reactive oxygen species, the activation of NF- κ B and the subsequent secretion of proinflammatory cytokines.

1. Gantner BN. et al., 2003. Collaborative induction of inflammatory responses by dectin-1 and Toll-like receptor 2. *J Exp Med.* 197(9):1107-17. **2. Ikeda Y. et al., 2008.** Dissociation of Toll-like receptor 2-mediated innate immune response to Zymosan by organic solvent-treatment without loss of Dectin-1 reactivity. *Biol Pharm Bull.* 31(1):13-8. **3. Brown GD. et al., 2003.** Dectin-1 mediates the biological effects of beta-glucans. *J Exp Med.* 197(9):1119-24.

METHODS

Preparation of sterile solution (5 mg/ml)

Stimulation of Dectin-1 can be achieved with 10-100 μ g/ml of Zymosan Depleted.

- Add 2 ml of sterile endotoxin-free water to 10 mg of Zymosan Depleted.

- Vortex to homogenize.

Note: The solution remains hazy.

Dectin-1 activation using Zymosan Depleted

Zymosan Depleted can be used to activate Dectin-1 in cells expressing this receptor, such as HEK-Blue™ hDectin-1 cells. These cells stably express the human Dectin-1b gene and genes of the Dectin-1 signaling pathway leading to NF- κ B activation. In addition, they express an NF- κ B-inducible secreted embryonic alkaline phosphatase (SEAP) reporter gene. Levels of SEAP can be easily determined using HEK-Blue™ Detection, a cell culture medium that allows the detection of SEAP as it is secreted by the cells.

For more information visit: www.invivogen.com/hek-blue-hdectin1b

- Add 20 μ l of Zymosan Depleted at 10-100 μ g/ml per well of a 96-well plate.

- Prepare a cell suspension (~280,000 cells per ml) in HEK-Blue™ Detection medium and add 180 μ l of the cell suspension (~50,000 cells) to each Zymosan Depleted-containing well.

- Incubate the plate for 6-24 h at 37 °C, 5% CO₂.

- Determine SEAP levels using a spectrophotometer at 620-655 nm.

RELATED PRODUCTS

Product	Catalog Code
Beta-glucan peptide	tlrl-bgp
Curdlan AL	tlrl-cura
HEK-Blue™ hDectin-1b	hkb-hdect1b
HKCA (Heat-killed <i>C. albicans</i>)	tlrl-hkca
HKSC (Heat-killed <i>S. cerevisiae</i>)	tlrl-hksc
Schizophyllan (β -glucan from <i>S. commune</i>)	tlrl-spg
Zymosan	tlrl-zyn

TECHNICAL SUPPORT

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