Zymosan Depleted

Hot alkali treated Zymosan; Dectin-1 ligand

Catalog code: tlrl-zyd

https://www.invivogen.com/zymosan-depleted

For research use only

Version 24E28-MM

PRODUCT INFORMATION

Contents

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

Storage and stability

- Zymosan Depleted is shipped at room temperature and should be stored at -20°C.
- Resuspended product is stable for 1 year at -20°C when properly stored. Avoid repeated freeze-thaw cycles.

Quality control:

- The biological activity has been validated using HEK-Blue™ hDectin-1b cells.
- The absence of bacterial contamination (e.g. lipoproteins and 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-glucans[3], 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-κB and the subsequent secretion of proinflammatory cytokines.

1. Gantner BN. et al., 2003. Collaborative induction of inflammatory responses by dectin-1 and Toll- likereceptor 2. J Exp Med. 197:1107-17. **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.31:13-8. **3. Brown GD. et al., 2003.** Dectin-1 mediates the biological effects of beta-glucans. J Exp Med. 197:1119-24.

METHODS

Preparation of suspension (5 mg/ml)

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

1. Add 2 ml of sterile endotoxin-free water (provided) to 10 mg Zymosan Depleted.
2. Vortex briefly to homogenize.

Note: Resuspended Zymosan Depleted results in a hazy solution.

Dectin-1 activation induced by Zymosan Depleted

Zymosan Depleted can be used to activate Dectin-1 in cells expressing this receptor, such as the HEK-Blue™ hDectin-1b cells. These HEK293 cells were transfected with the human Dectin-1b gene and other genes from the Dectin-1 signaling pathway. These cells also stably express a secreted embryonic alkaline phosphatase (SEAP) reporter gene.

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

1. Add 20 µl of Zymosan Depleted (10-100 µg/ml final concentration) in a well of a 96-well plate.
2. Add 180 µl of HEK-Blue™ hDectin-1b cells (~50,000 cells) per well.
3. Incubate cells for 16-24 h at 37 °C, 5% CO_2.
4. Determine of Dectin-1a activation by assessing SEAP expression using a SEAP detection medium, such as QUANTI-Blue™ Solution.

RELATED PRODUCTS

Product	Description	Cat. Code
Curdlan	Dectin-1 agonist	tlrl-curd
HEK-Blue™ hDectin-1b cells	Reporter cells	hkb-hdect1b
QUANTI-Blue™ Solution	SEAP detection medium	rep-qbs
Zymosan	TLR2 & Dectin-1 agonist	tlrl-zyn

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