

WGP Dispersible

1,3/1,6- β -glucan from *S. cerevisiae*; Dectin-1 ligand

Catalog code: tlr1-wgp

<https://www.invivogen.com/wgp>

For research use only

Version 22L13-AK

PRODUCT INFORMATION

Contents

- 50 mg WGP Dispersible

Storage

- WGP Dispersible is shipped at room temperature. Upon receipt, store at room temperature (15-25°C).
- Upon resuspension, WGP Dispersible is stable at least 1 month at 4°C.

Quality control

- Biological activity has been validated using cellular assays.
- The absence of bacterial contamination (e.g. lipoproteins and endotoxins) has been confirmed using HEK-Blue™ TLR2 cells and HEK-Blue™ TLR4 cells.

PRODUCT DESCRIPTION

Whole glucan particles (WGP) are β -glucans notable for their ability to modulate the immune response. InvivoGen provides WGP in two forms, WGP Dispersible (WGP® Dispersible), and WGP Soluble (WGP® Soluble).

WGP Dispersible is a particulate *Saccharomyces cerevisiae* β -glucan preparation. WGP Dispersible induces Dectin-1-dependent responses, including phagocytosis and induction of TNF- α , IL-6 and ROS (reactive oxygen species) by macrophages and dendritic cells.

InvivoGen provides a control, [WGP Soluble](#), that binds Dectin-1b without activating it. Furthermore, WGP Soluble significantly blocks the binding of WGP Dispersible to macrophages and its immunostimulatory effect¹. Similarly to WGP Dispersible, WGP Soluble activates Dectin-1a, but no TLR receptors².

WGP® Dispersible and WGP® Soluble are registered trademarks of Biothera - Wellmune®.

BACKGROUND

β -Glucans are carbohydrates consisting of a backbone of glucose residues. These polysaccharides are major cell wall structural components in fungi, including the yeasts *Saccharomyces cerevisiae* and *Candida albicans*. They are also found in plants and some bacteria. They are not synthesized by animals and thus are recognized by the innate immune system as pathogen-associated molecular patterns (PAMPs). This recognition is mediated by pattern recognition receptors (PRRs) and, among them, Dectin-1 has emerged as the primary receptor².

1. Goodridge HS. *et al.*, 2011. Activation of the innate immune receptor Dectin-1 upon formation of a 'phagocytic synapse'. *Nature*. 472(7344):471-5. 2. Tsoni SV & Brown GD. 2008. β -Glucans and dectin-1. *Ann N Y Acad Sci*. 1143:45-60.

TECHNICAL SUPPORT

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PRODUCT PROPERTIES

Synonyms: 1,3/1,6- β -Glucan

Specificity: Dectin-1 agonist

Working concentration: 1 - 200 μ g/ml

Appearance: Beige to light brown powder

METHODS

Preparation of WGP Dispersible suspension (1 mg/ml)

Stimulation of Dectin-1 can be achieved with 1 - 200 mg/ml of WGP Dispersible.

- Weigh 10 mg of WGP Dispersible.

- Add 10 ml of endotoxin-free water and vortex to homogenize.

- Serial dilutions can be prepared using the appropriate amount of water.

WGP Dispersible induced NF- κ B activation

WGP Dispersible can be used to activate Dectin-1 in murine macrophages [RAW-Blue™ cells](#). These cells endogenously express Dectin-1. Additionally, they feature an NF- κ B-inducible SEAP (secreted embryonic alkaline phosphatase) reporter gene.

InvivoGen also offers [HEK-Blue™ Dectin-1 cells](#) to study the response of the (human and/or murine) Dectin-1a and -1b signaling pathway.

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

1. Stimulate [RAW-Blue™ cells](#) or [HEK-Blue™ Dectin-1 cells](#) (5×10^5 cells/ml) with 10 - 200 mg/ml WGP Dispersible.
2. Incubate cells and WGP Dispersible for 6 - 24 h at 37°C, 5% CO₂.
3. Collect 20 μ l of supernatant and add to a well of a 96-well plate containing 180 μ l of [QUANTI-Blue™ Solution](#).
4. Incubate the plate at 37°C for 1-3 h.
5. Determine SEAP levels using a spectrophotometer at 620-655 nm.

RELATED PRODUCTS

Product	Catalog Code
WGP Soluble	tlr1-wgps
HEK-Blue™ hDectin-1a Cells	hkb-hdect1a
HEK-Blue™ hDectin-1b Cells	hkb-hdect1b
HEK-Blue™ mDectin-1b Cells	hkb-mdect1b
RAW-Blue™ Cells	raw-sp
QUANTI-Blue™ Solution	rep-qbs
HEK-Blue™ Detection	hb-det2
Other Dectin-1 ligands:	
Curdlan	tlr1-curd
HKCA (heat killed <i>C.albicans</i>)	tlr1-hkca
Laminarin	tlr1-lam
Zyimosan	tlr1-zyn