

# Beta-glucan peptide

Beta-glucan from *Trametes versicolor* - Dectin-1 ligand

Catalog # t1rl-bgp

For research use only

Version # 13H27-MM

## PRODUCT INFORMATION

### Content:

50 mg beta-glucan peptide

### Storage and stability:

- Beta-glucan peptide is shipped at room temperature. Store at room temperature.
- Upon resuspension, beta-glucan peptide is stable at least 1 month at 4°C.

## DESCRIPTION

Beta-glucan peptide (BGP) is a high molecular weight (~100 kDa) polysaccharide extracted from the fungus *Trametes versicolor*. BGP consists of a highly ramified glucan portion, comprising a beta 1-4 main chain and beta 1-3 side chain, with beta 1-6 side chains covalently linked to a polypeptide portion rich in aspartic, glutamic and other amino acids. BGP activates murine macrophages and HEK-Blue™ Dectin-1 cells. Detection of β-glucans by Dectin-1 receptor leads to the CARD9-dependent activation of NF-κB and MAP kinases<sup>1</sup>.

1. Goodridge HS. *et al.*, 2009. Beta-glucan recognition by the innate immune system. *Immunol Rev.* 230(1):38-50.

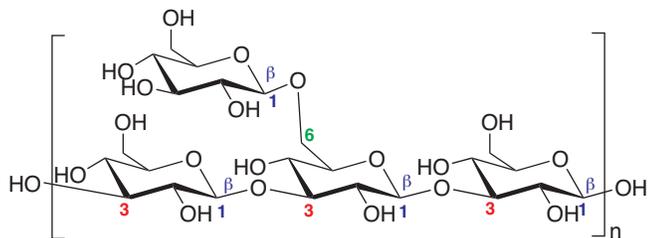
## CHEMICAL PROPERTIES

**Solubility:** Water (5 mg/ml)

**Synonym:** β(1→4, 1→3, 1→6)-glucan peptide

**Appearance:** Brown powder

**Partial Structure:**



## METHODS

### Preparation of beta-glucan peptide stock solution (1 mg/ml)

Stimulation of Dectin-1 can be achieved with 10 - 100 µg/ml of beta-glucan peptide.

- Weigh 10 mg of beta-glucan peptide.
- Add 10 ml of water to the 10 mg of beta-glucan peptide. Vortex to homogenize.

**Note:** Rehydration of beta-glucan peptide results in a dark brown solution.

### Detection of beta-glucan peptide-induced dectin-1 activation

Activation of Dectin-1 by beta-glucan peptide can be determined using Dectin-1 expressing cells, including the murine macrophage RAW-Blue™ cells. These cells express Dectin-1 and a SEAP (secreted embryonic alkaline phosphatase) reporter construct inducible by NF-κB and AP-1. Expression of SEAP can be assessed in the cell supernatant using the SEAP detection medium QUANTI-Blue™.

- Add 20 µl of beta-glucan peptide suspension (suggested concentration range 1 - 100 µg/ml) in a well of a 96-well plate.
- Add 180 µl of RAW-Blue™ cell suspension (~100,000 cells) per well.
- Incubate the plate for 20 - 24 h at 37°C, 5% CO<sub>2</sub>.
- Collect 50 µl of supernatant and add to a well of a 96-well plate containing 150 µl of QUANTI-Blue™ Solution.
- Incubate the plate at 37°C incubator for 1 - 3 h.
- Determine SEAP levels using a spectrophotometer at 620-655 nm.

## RELATED PRODUCTS

Product	Catalog Code
RAW-Blue™ Cells	raw-sp
QUANTI-Blue™ Solution	rep-qbs
<b>Other Dectin-1 ligands:</b>	
HKCA (heat killed <i>C.albicans</i> )	t1rl-hkca
Zymosan (cell wall preparation from <i>S.cerevisiae</i> )	t1rl-zyn
Zymosan depleted (hot alkali treated zymosan)	t1rl-dzn
WGP Dispersible (1,3/1,6-b-glucan from <i>S.cerevisiae</i> )	t1rl-wgp
WGP Soluble (control for WGP Dispersible)	t1rl-wgps

### TECHNICAL SUPPORT

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