

Schizophyllan

Beta-glucan from *Schizophyllum commune*; a Dectin-1 ligand

Catalog # ttrl-spg

For research use only

Version # 16E23-MM

PRODUCT INFORMATION

Content:

100 mg schizophyllan provided as a powder

Storage and stability:

- Schizophyllan is shipped at room temperature. Store at room temperature.
- Upon resuspension, schizophyllan is stable for 1 month at 4°C.

DESCRIPTION

Schizophyllan (SPG) is a gel-forming β -glucan from the fungus *Schizophyllum commune*. SPG is a high molecular weight (450 kDa) (1-3)- β -D-glucan that has a 1,6- β -monoglucosyl branch in every three 1,3- β -glucosyl residues on the main chain. SPG binds to Dectin-1¹ and triggers a signaling cascade leading to NF- κ B activation. Detection of β -glucans by Dectin-1 receptor leads to the CARD9-dependent activation of NF- κ B and MAP kinases².

1. Adachi Y. et al., 2004. Characterization of beta-glucan recognition site on C-type lectin, dectin 1. *Infect Immun.* 72(7):4159-71. **2. Goodridge HS. et al., 2009.** Beta-glucan recognition by the innate immune system. *Immunol Rev.* 230(1):38-50.

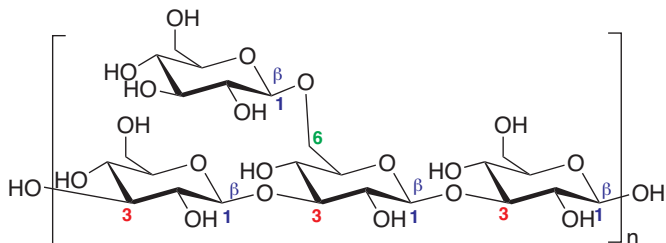
CHEMICAL PROPERTIES

CAS number: 9050-67-3

Synonym: β (1 \rightarrow 6)-glucan, Sizofiran

Appearance: Off-white to slightly yellow powder

Partial Structure:



METHODS

Preparation of schizophyllan suspension (1 mg/ml)

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

- Weigh 10 mg of schizophyllan in a round-bottom tube.
- Add 10 ml of water to the 10 mg of schizophyllan. Vortex to homogenize. Dispense water in a single expulsion to avoid the formation of clumps.

Note: Schizophyllan is insoluble and results in a non-homogeneous suspension with gelatinous precipitates. Avoid the use of conical tubes.

Detection of schizophyllan-induced dectin-1 activation

Activation of Dectin-1 by schizophyllan 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- κ B and AP-1. Expression of SEAP can be assessed in the cell supernatant using the SEAP detection medium QUANTI-Blue™.

- Add 20 μ l of schizophyllan suspension (suggested concentration range 1-100 μ g/ml) in a well of a 96-well plate.
- Add 180 μ l of RAW-Blue™ cell suspension (~100,000 cells) per well.
- Incubate the plate for 20-24 h at 37°C, 5% CO₂.
- Collect 50 μ l of supernatant and add to a well of a 96-well plate containing 150 μ l of QUANTI-Blue™.
- 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™	rep-qb1
Other Dectin-1 ligands:	
HKCA (heat killed <i>C.albicans</i>)	ttrl-hkca
WGP Dispersible (1,3/1,6- β -glucan from <i>S.cerevisiae</i>)	ttrl-wgp
WGP Soluble (control for WGP Dispersible)	ttrl-wgps
Zymosan (cell wall preparation from <i>S.cerevisiae</i>)	ttrl-zyn
Zymosan depleted (hot alkali treated zymosan)	ttrl-dzn

TECHNICAL SUPPORT

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