**Scleroglucan**

Beta-glucan from *Sclerotium rolfsii* - Dectin-1 ligand

Catalog # tlrl-scg

For research use only

Version # 13H20-MM

**PRODUCT INFORMATION**

**Content:**
100 mg scleroglucan provided as a lyophilized powder

**Storage and stability:**
- Scleroglucan is shipped at room temperature. Store at room temperature.
- Upon resuspension, scleroglucan is stable at least 1 month at 4°C.

**DESCRIPTION**

Scleroglucan is a high molecular weight (>1000 kDa) polysaccharide produced by fermentation of the filamentous fungus *Sclerotium rolfsii*. Scleroglucan consists of a linear β(1-3) D-glucose backbone with one β(1-6) D-glucose side chain every three main residues. Scleroglucan is recognized by Dectin-1 and strongly activates HEK-Blue™ Dectin-1 and RAW-Blue™ cells. Detection of β-glucans by Dectin-1 receptor leads to the CARD9-dependent activation of NF-κB and MAP kinases.

1. Adams EL. et al., 2008. Differential high-affinity interaction of dectin-1 with natural or synthetic glucans is dependent upon primary structure and is influenced by polymer chain length and side-chain branching. J Pharmacol Exp Ther. 325(1):115-23.

**CHEMICAL PROPERTIES**

**CAS number:** 39464-87-4

**Synonym:** β(1→3,1→6)-glucan

**Appearance:** Off-white to slightly yellow powder

**Partial Structure:**

![Partial Structure Image]

**METHODS**

**Preparation of scleroglucan suspension (1 mg/ml)**

Stimulation of Dectin-1 can be achieved with 1 - 100 μg/ml of scleroglucan.

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

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

**Detection of scleroglucan-induced dectin-1 activation**

Activation of Dectin-1 by scleroglucan 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 scleroglucan suspension (suggested concentration range 0.1 - 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% CO2.
- Collect 50 µl of supernatant and add to a well of a 96-well plate containing 150 µl 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**

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<td>raw-sp</td>
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<td>QUANTI-Blue™</td>
<td>rep-qb1</td>
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<td>Other Dectin-1 ligands:</td>
<td></td>
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<tr>
<td>HKCA (heat killed <em>C.albicans</em>)</td>
<td>thrl-hkea</td>
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<td>HKSC (heat killed <em>S.cerevisiae</em>)</td>
<td>thrl-hksc</td>
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<tr>
<td>Lichenan ((1,3,1,4-β-glucan from <em>C.islandica</em>)</td>
<td>thrl-lich</td>
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<tr>
<td>Zymosan (cell wall preparation from <em>S.cerevisiae</em>)</td>
<td>thrl-zyn</td>
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<td>Zymosan depleted (hot alkali treated zymosan)</td>
<td>thrl-dzn</td>
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<td>WGP Dispersible (1,3,6-β-glucan from <em>S.cerevisiae</em>)</td>
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<td>WGP Soluble (control for WGP Dispersible)</td>
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**TECHNICAL SUPPORT**

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