Curdlan
Beta-1,3-glucan from Alcaligenes faecalis; Dectin-1 ligand
Catalog code: tlr1-curd
https://www.invivogen.com/curdlan
For research use only
Version 18K15-MM

PRODUCT INFORMATION
Contents
- 1 g Curdlan

Storage and stability
- Curdlan is shipped at room temperature. Store at room temperature (15-25 °C).
- Upon resuspension, curdlan is stable for 1 month at 4 °C.

Quality control
- The Dectin-1 activity of curdlan has been tested using cellular assays.
- The presence of bacterial contamination (e.g. lipoproteins and endotoxins) has been assessed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells. Curdlan induces TLR2 and TLR4 activity when used at concentrations higher than 100 ng/ml.

DESCRIPTION
Curdlan is a high molecular weight linear polymer consisting of β-(1->3)-linked glucose residues. Curdlan is produced as a water-insoluble polysaccharide by the soil bacterium, Alcaligenes faecalis. Curdlan is recognized by the membrane bound Dectin-1 receptor leading to the CARD9-dependent activation of NF-κB and MAP kinases. Furthermore, Dectin-1 signaling activates the NFAT transcription factor. Recent data suggest that Curdlan is also recognized by the cytosolic NLRP3 inflammasome complex which cooperates with Dectin-1 resulting in a robust activation of IL-1β-mediated inflammatory response.


CHEMICAL PROPERTIES
CAS number: 54724-00-4
Synonym: β-1,3-Glucan hydrate
Molecular Formula: (-C₆H₁₀O₅-)ₙ
Appearance: Off-white to slightly brown powder

METHODS
Preparation of curdlan suspension (1 mg/ml)
Stimulation of Dectin-1 can be achieved with 10-100 µg/ml of curdlan.
- Weigh 10 mg of curdlan in a round-bottom tube.
- Add 10 ml of water to the 10 mg of curdlan. Vortex to homogenize.
- Dispense water in a single expulsion to avoid the formation of clumps.

Detection of curdlan-induced Dectin-1 activation
Curdlan can be used to activate Dectin-1 in cells expressing this receptor, such as the HEK-Blue™ hDectin-1a cells. These HEK293 cells were transfected with the human Dectin-1a 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 visit: https://www.invivogen.com/hek-blue-hdect1a.

1. Add 20 µl of curdlan (0.1-100 µg/ml) in a well of a 96-well plate.
2. Add 180 µl of HEK-Blue™ hDectin-1a cells (5 x 10⁵ cells) per well.
3. Incubate cells and laminarin for 16-24 h at 37 °C, 5% CO₂.
4. Determine of Dectin-1a activation by assessing SEAP expression using a SEAP detection medium, such as QUANTI-Blue™.

PRODUCTS

<table>
<thead>
<tr>
<th>Product</th>
<th>Catalog Code</th>
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<tbody>
<tr>
<td>HEK-Blue™ hDectin-1a cells</td>
<td>hkb-hdect1a</td>
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<tr>
<td>HKCA (heat killed C.albicans)</td>
<td>tlr1-hkca</td>
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<tr>
<td>QUANTI-Blue™</td>
<td>rep-qbl</td>
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<tr>
<td>WGP Dispersible (1,3,1,6-b-glucan from S.cerevisiae)</td>
<td>tlr1-wgp</td>
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<tr>
<td>WGP Soluble (control for WGP Dispersible)</td>
<td>tlr1-wgps</td>
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<tr>
<td>Zymosan depleted (hot alkali treated zymosan)</td>
<td>tlr1-zyd</td>
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<tr>
<td>Zymosan (cell wall preparation from S.cerevisiae)</td>
<td>tlr1-zyn</td>
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