

L18-MDP

Synthetic derivative of muramyl dipeptide; NOD2 agonist

Catalog code: tlrl-lmdp
<https://www.invivogen.com/l18-mdp>

For research use only

Version 19A11-MM

PRODUCT INFORMATION

Contents

- 1 mg L18-MDP
- 1.5 ml sterile endotoxin-free water

Storage and stability

- L18-MDP is provided as a lyophilized powder and shipped at room temperature. Upon receipt, store at -20°C.
- Upon resuspension, prepare aliquots of L18-MDP and store at -20°C. Resuspended product is stable for 6 months at -20°C when properly stored. Avoid repeated freeze-thaw cycles.

Quality control

- The biological activity has been validated using HEK-Blue™ NOD2 cells.
- The absence of bacterial contamination (e.g. lipoproteins and endotoxins) has been confirmed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.

DESCRIPTION

Muramyl dipeptide (MDP) is the minimal bioactive peptidoglycan motif common to all bacteria, the essential structure required for adjuvant activity in vaccines. MDP has been shown to be recognized by NOD2, but not TLR2, nor TLR2/1 or TLR2/6 associations^{1,2}. In an attempt to enhance the protective activity against bacterial infection, numerous derivatives of MDP have been synthesized. Among them, L18-MDP, a 6-O-acyl derivative with a stearoyl fatty acid, showed the highest activity³. In HEK293 cells transfected with the NOD2 gene, L18-MDP was 10 times more efficient than MDP to induce NF-κB activation.

1. Girardin SE. *et al.*, 2003. Nod2 is a general sensor of peptidoglycan through muramyl dipeptide (MDP) detection. *J Biol Chem.* 278(11):8869-72. 2. Inohara N. *et al.*, 2003. Host recognition of bacterial muramyl dipeptide mediated through NOD2. Implications for Crohn's disease. *J Biol Chem.* 278(8):5509-12. 3. Matsumoto K. *et al.*, 1981. Stimulation of nonspecific resistance to infection induced by 6-O-acyl muramyl dipeptide analogs in mice. *Infect Immun.* 32(2):748-58.

CHEMICAL PROPERTIES

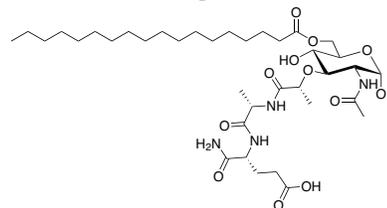
Synonym: 6-O-stearoyl-N-Acetyl-muramyl-L-alanyl-D-isoglutamine

Formula: C₃₇H₆₆N₄O₁₂

Molecular weight: 758.94 g/mol

Working concentration: 1-100 ng/ml

Structure:



METHODS

Preparation of stock solution (1 mg/ml)

- Add 1 ml endotoxin-free water (provided) and vortex until completely dissolved.
- Prepare aliquots and store at -20°C.

NOD2 stimulation with L18-MDP

L18-MDP can be used to activate NOD2 in cells expressing this receptor, such as HEK-Blue™ NOD2 cells. These cells express the human or mouse NOD2 gene and an NF-κB inducible SEAP reporter gene. Levels of SEAP can be determined using HEK-Blue™ Detection, a cell culture medium that allows the detection of SEAP as it is secreted.

For more information visit: <https://www.invivogen.com/hek-blue-nod>.

- Add 20 µl of L18-MDP at 1-100 ng/ml per well of a 96-well plate.
- Prepare a cell suspension as described on the technical data sheet in HEK-Blue™ Detection medium and immediately add 180 µl of the cell suspension to each well containing L18-MDP.
- Incubate the plate for 6-24 h at 37°C, 5% CO₂.
- Determine SEAP levels using a spectrophotometer at 620-655 nm.

RELATED PRODUCTS

Product	Description	Cat.Code
HEK-Blue™ Detection	SEAP detection medium	hb-det2
HEK-Blue™ hNOD2 Cells	Human NOD2 reporter cells	hkb-hnod2
HEK-Blue™ mNOD2 Cells	Murine NOD2 reporter cells	hkb-mnod2
MDP	NOD2 agonist	tlrl-mdp
Murabutide	NOD2 agonist	tlrl-mbt

TECHNICAL SUPPORT

InvivoGen USA (Toll-Free): 888-457-5873
InvivoGen USA (International): +1 (858) 457-5873
InvivoGen Europe: +33 (0) 5-62-71-69-39
InvivoGen Hong Kong: +852 3622-3480
E-mail: info@invivogen.com

 **InvivoGen**
www.invivogen.com