

# MDP Rhodamine

Muramyl dipeptide labeled with Rhodamine- NOD2 ligand

Catalog # tlr1-rmdp

For research use only

Version # 13F11-MM

## PRODUCT INFORMATION

### Content:

- 500 µg Muramyl dipeptide (MDP) labeled with Rhodamine
- 1.5 ml sterile endotoxin-free water

### Storage :

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

## 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<sup>1,2</sup>. This recognition is highly stereospecific of the L-D isomer, excluding any reaction to the D-D or L-L analogs<sup>2</sup>. NOD2 mutants associated with susceptibility to Crohn's disease have been found to be deficient in their recognition of MDP<sup>1,2</sup>. The potent adjuvant activity of MDP may also be linked to an activation of the CIAS1/NALP3/Cryopyrin inflammasome<sup>3</sup>.

MDP Rhodamine is coupled via a 6-aminohexanoic acid spacer molecule at the C6 position of the muric acid. This spacer linker arm minimizes potential steric hindrance effects.

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. Martinon F. *et al.*, 2004. Identification of bacterial muramyl dipeptide as activator of the NALP3/cryopyrin inflammasome. *Curr Biol.* 14(21):1929-34. 4. Schindler U. & Baichwal VR., 1994. Three NF-κB binding sites in the human E-selectin gene required for maximal tumor necrosis factor alpha-induced expression. *Mol Cell Biol.* 14(9):5820-5831.

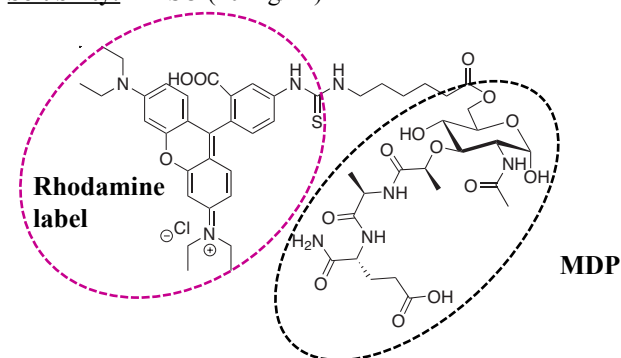
## CHEMICAL PROPERTIES

**Synonym:** MDP-Hex-Rhodamine B

**Formula:** C<sub>54</sub>H<sub>73</sub>ClN<sub>8</sub>O<sub>15</sub>S

**Molecular weight:** 1141.72

**Solubility:** DMSO (10 mg/ml)



### Spectral Properties of Rhodamine B

**Excitation λ max:** 552 nm

**Emission λ max:** 570 nm

## METHODS

### Preparation of MDP Rhodamine stock solution (500 µg/ml)

To obtain a 500 µg/ml stock solution:

1. Add 100 µl DMSO to 500 µg MDP Rhodamine vial
2. Vortex until complete solubilization.
3. Once MDP Rhodamine is solubilized, add 900 µl sterile water (provided). Prepare aliquots and store at -20°C. Protect from light.

## APPLICATIONS

MDP Rhodamine can be used for various applications:

- flow cytometry
- immunocytochemistry and confocal imaging

**Working concentration:** 1 - 10 µg/ml

*Note: Non-specific background fluorescence is observed at high concentrations.*

## RELATED PRODUCTS

Product	Catalog Code
MDP	tlr1-mdp
MDP control (D-D isomer)	tlr1-mdpc
MDP FITC	tlr1-fmdp
pUNO-hNOD2a (human gene)	puno-hnod2a
pUNO-mNOD2a (mouse gene)	puno-mnod2a

### TECHNICAL SUPPORT

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