

# Polymyxin B

An inhibitor of LPS-induced activation of TLR4

Catalog # tlr1-pmb

For research use only

Version # 09E27-MM

## PRODUCT INFORMATION

### Content:

- 100 mg Polymyxin B (Sulfate)

### Storage and stability:

- Polymyxin B is shipped at room temperature. Store at 4°C. Product as powder form is stable 6 months at 4°C.
- Upon resuspension, Polymyxin B should be stored at 4°C. Resuspended product is stable for 1 month at 4°C.

## DESCRIPTION

Polymyxin B (PMB) is a cyclic cationic polypeptide antibiotic produced by the soil bacterium *Paenibacillus polymixa*. PMB blocks the biological effects of Gram negative lipopolysaccharide (LPS) through binding to lipid A, the toxic component of LPS, which is negatively charged<sup>1,2</sup>. The neutralizing effect of PMB on LPS is dose-related and specific for LPS<sup>3</sup>. Polymyxin B is widely used to eliminate the effects of endotoxin contamination, both *in vitro* and *in vivo*.

## CHEMICAL CHARACTERISTICS

Cas number: 1405-20-5

Formula: C<sub>56</sub>H<sub>100</sub>N<sub>16</sub>O<sub>17</sub>S

Molecular weight: 1301.56

Appearance: white to yellow color

Solubility: Water (50 mg/ml)

## METHODS

### Preparation of stock solution (50 mg/ml)

Inhibition of LPS-induced activation of TLR4 can be achieved with 10-100 µg/ml Polymyxin B.

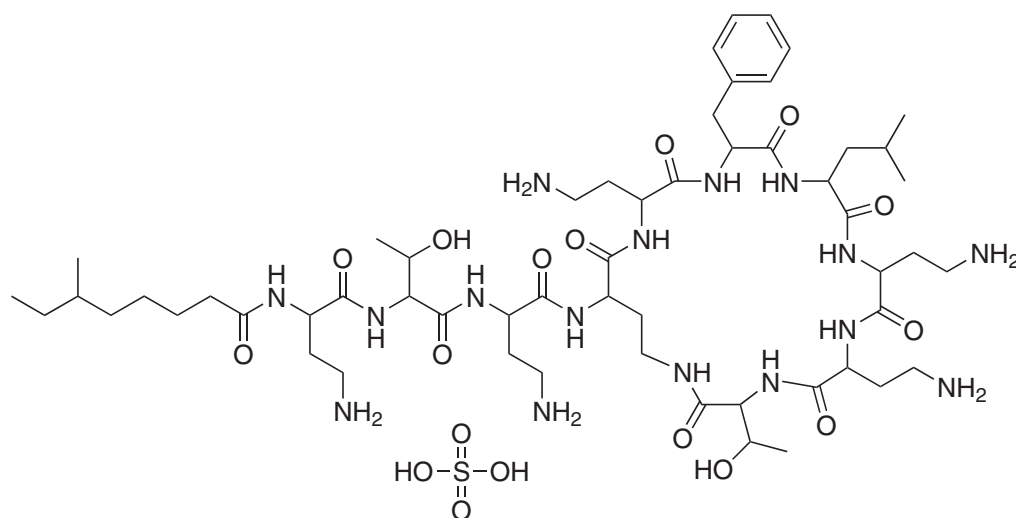
- Add 2 ml water and vortex for 30 seconds or until complete solubilization.
- Filter sterilize and store at 4°C.

### Polymyxin B inhibition (in vitro use)

- Transfect your cell line with an NF-κB reporter plasmid (see related products, pNiFty). If your cell line does not naturally express TLR4/MD2 (and CD14) genes, cotransfect with TLR4/MD2(-CD14) expressing plasmids, such as pDUO-TLR4/MD2 or pUNO-TLR4 and pDUO-MD2/CD14.
- Twenty-four to forty-eight hours after transfection, stimulate cells with 10 ng-1 µg/ml LPS and 10-100 µg/ml PMB for 6 to 24 hours.
- Determine LPS inhibition by PMB on TLR4 by assessing reporter gene expression using the appropriate detection system.

## References

1. Palmer JD, Rifkind D. 1974. Neutralization of the hemodynamic effects of endotoxin by polymyxin B. Surg Gynecol Obstet. 138(5):755-9.
2. Lindemann RA. 1988. Bacterial activation of human natural killer cells: role of cell surface lipopolysaccharide. Infect Immun. 56 (5): 1301-1308.
3. Duff GW, Atkins E. 1982. The inhibitory effect of polymyxin B on endotoxin-induced endogenous pyrogen production. J Immunol Methods. 52(3):333-40.



## TECHNICAL SUPPORT

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## RELATED PRODUCTS

Product	Catalog Code
LPS-EB Ultrapure	tlrl-pelps
pUNO-hTLR4A	puno-htlr4a
pUNO-mTLR4	puno-mtlr4
pDUO2-hMD2/CD14	pduo2-hmd2cd14
pDUO2-mMD2/CD14	pduo2-mmd2cd14
293/hTLR4A-MD2-CD14	293-htlr4amd2cd14
pNiFty-Luc (Amp <sup>R</sup> )	pnifty-luc
pNiFty-SEAP (Amp <sup>R</sup> )	pnifty-seap

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