



## Product Information

Product ID P5747

CAS No. 1405-20-5

Chemical Name

Synonym

Formula  $C_{56}H_{100}N_{16}O_{17}S$

Formula Wt.

Melting Point

Purity  $\geq 6500$  iu/mg

Solubility Soluble in water (50 mg/mL, hazy solution).

Store Temp Ambient

Ship Temp Ambient

**Description** Polymyxin B is a mixture of polymyxin B1, B2, B3 and B1-1 sulfates; polymyxin B is a cationic lipid oligopeptide derived from *Bacillus polymyxa* that displays antibacterial activity against all gram-negative bacteria except species of *Proteus*. Polymyxin B kills both proliferative and quiescent cells in vitro. Polymyxin B inhibits cellular respiration by inhibiting type II NADH-quinone oxidoreductase activity. This compound also induces aggregation of lipopolysaccharide (LPS) in bacterial cell membranes, altering membrane potential and causing leakage of cellular components. Polymyxin B has been used to treat septic shock induced by LPS of gram-negative bacteria, preventing LPS-induced caspase activity, Fas expression, Bax/Bcl-2 ratio alteration, and apoptosis.

**Bulk quantities available upon request**

Product ID	Size
P5747	250 mg
P5747	1 g
P5747	5 g

**References** Deris ZZ, Akter J, Sivanesan S, et al. A secondary mode of action of polymyxins against Gram-negative bacteria involves the inhibition of NADH-quinone oxidoreductase activity. *J Antibiot (Tokyo)*. 2013 Oct 30. [Epub ahead of print]. PMID: 24169795.

Zhai B, Lin X. Evaluation of the anticryptococcal activity of the antibiotic polymyxin B in vitro and in vivo. *Int J Antimicrob Agents*. 2013 Mar;41(3):250-4. PMID: 23313397

Domingues MM, Inácio RG, Raimundo JM, et al. Biophysical characterization of polymyxin B interaction with LPS aggregates and membrane model systems. *Biopolymers*. 2012;98(4):338-44. PMID: 23193598.

Martin EL, Ranieri VM. Endotoxin removal by polymyxin B immobilized cartridge inactivates circulating proapoptotic factors. *Contrib Nephrol*. 2010;167:65-76. PMID: 20519900.

**Caution:** This product is intended for laboratory and research use only. It is not for human or drug use.