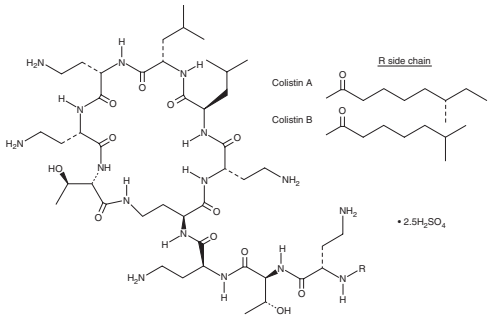
PRODUCT INFORMATION

Colistin (sulfate)

Item No. 17584



Formal Name:	Colistin, sulfate salt (2:5)
Synonym:	Polymyxin E Complex
MF:	$[C_{52}H_{98}N_{16}O_{13}]_2 \bullet 5H_2SO_4$
FW:	2,801.3
Purity:	≥95%
Supplied as:	A crystalline solid
Storage:	Room temperature
Stability:	≥2 years

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Colistin (sulfate) is supplied as a crystalline solid. Aqueous solutions of colistin (sulfate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of colistin (sulfate) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Colistin is a complex antibiotic containing greater than 30 components, with the cyclic polypeptide antibiotics polymyxins E_1 (colistin A) and E2 (colistin B) as the major components.[1,2] It was originally isolated from *B. polymyxa*.[1] Colistin inhibits the growth of the Gram-negative bacteria *E. coli*, *P. aeruginosa*, *P. fluorescens*, and *S. enterica* (MICs = 0.04-2.08 µg/ml) and Gram-positive *L. ivanovii* and *L. monocytogenes* (MICs = 2.5-10 µg/ml) but is not active against Gram-positive *L. lactis*, *P. polymyxa*, *P. acidilactici*, or *S. aureus* at concentrations up to 5 µg/ml.[3] It also inhibits the growth of clinical isolates of both susceptible and multidrug-resistant *P. aeruginosa* (MICs = 1-2 mg/l).[4] Colistin binds selectively to LPS from susceptible strains of *K. pneumoniae* compared to resistant strains (K_is = 0.56 and 2.83 µM, respectively), which may contribute to its mechanism of action against Gram-negative bacteria.[5] *In vivo*, colistin slows the growth of *P. aeruginosa* and *A. baumannii* in a neutropenic mouse model of thigh infection.[6]

References

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3. Naghmouchi, K., Hammami, R., Fliss, I., *et al.* Colistin A and colistin B among inhibitory substances of *Paenibacillus polymyxa* JB05-01-1. *Arch. Microbiol.* **194(5)**, 363-370 (2012).
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5. Velkov, T., Deris, Z.Z., Huang, J.X., *et al.* Surface changes and polymyxin interactions with a resistant strain of *Klebsiella pneumoniae*. *Innate Immun.* **20(4)**, 350-363 (2014).
6. Cheah, S.-E., Wang, J., Nguyen, V.T.T., *et al.* New pharmacokinetic/pharmacodynamic studies of systemically administered colistin against *Pseudomonas aeruginosa* and *Acinetobacter baumannii* in mouse thigh and lung infection models: Smaller response in lung infection. *J. Antimicrob. Chemother.* **70(12)**, 3291-3297 (2015).

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