Polymyxin B3 Sulfate, EvoPure®
PRODUCT DATA SHEET

issue date 01/06/2020

Product Name:	Polymyxin B3 Sulfate, EvoPure®
Product Number:	P040
Molecular Formula:	$C_{55}H_{96}N_{16}O_{13} \cdot xH_2O_4S$ (lot specific)
Molecular Weight:	1189.45 g/mol (Free base)
Form:	Powder
Appearance:	White powder
Source:	*Pseudomonas sp.*
Storage Conditions:	-20°C
Description:	Polymyxin B3 sulfate is an individual fraction found in the antibiotic mixture polymyxin B sulfate. Polymyxin B3 sulfate is differentiated from its counterpart fractions by the presence of an octanoic fatty acid moiety. Results from *in vitro* studies have shown marginal differences in MIC data when comparing the fractions. **Kassamali, et al.** used polymyxin B1, polymyxin B2, polymyxin B3, and polymyxin B1-I to test for synergistic and antagonistic effects against various Gram-negative organisms. Read more here: "Microbiological Assessment of Polymyxin B Components Tested Alone and In Combination" **Lim et al.** used polymyxin B1, B2, B3, and B1-I from TOKU-E to study the stability of each compound in saline, dextrose, and saline/dextrose infusion solutions. "Physicochemical stability study of polymyxin B in various infusion solutions for administration to critically Ill patients."
Mechanism of Action:	Polymyxin B targets and alters permeability lipopolysaccharide (LPS) of gram negative bacteria leading to lysing of the cell. Polymyxin B only needs to interact with LPS, it is not required to enter the cell.
Spectrum:	Polymyxin B sulfate targets the outer membrane of gram negative bacteria especially *Pseudomonas aeruginosa.* Kassamali, et al. found polymyxin B3 to be the most active polymyxin fraction against most organisms in their experiment. Kassamali, et al. also discovered a synergistic effect using polymyxin B3 and B1-I against their tested organisms.

Microbiology Applications

Polymyxin B sulfate is commonly used in clinical *in vitro* microbiological antimicrobial susceptibility tests (panels, discs, and MIC strips) against gram negative microbial isolates. Medical microbiologists use AST results to recommend antibiotic treatment options for infected patients. Representative MIC values include:

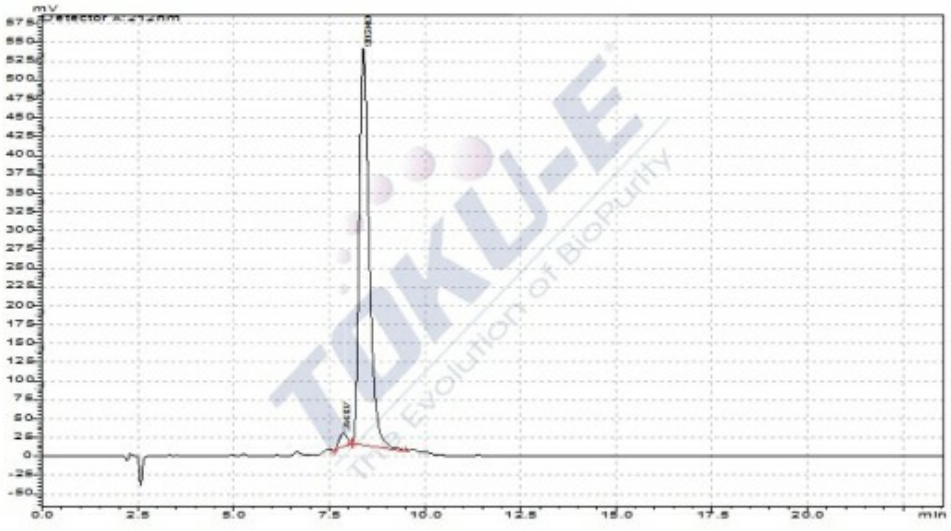
- *Pseudomonas aeruginosa* 0.25 µg/mL – 1 µg/mL
- For a complete list of polymyxin B sulfate MIC values, click here.

Plant Biology Applications

Polymyxin B sulfate was successfully tested to counteract phytopathogenic gram-negative bacterial growth including different strains of *Pseudomonas viridiflava* and *Erwinia carotovora*. Polymixin B sulfate was shown to reduce bacterial growth of different strains of *Pseudomonas viridiflava* at low concentrations, (0.08 µg/ml) and *Erwinia carotovora* growth at slightly higher concentrations (0.25 µg/ml) (Selim et al. 2005).

Technical Data:

HPLC Chromatogram Showing Ultra High, Single Fraction Purity of Polymyxin B3 Sulfate, EvoPure®



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