Polymyxin B Sulfate

An antibiotic active against gram-negative bacteria, interfering with cell membrane permeability

Polymyxin B Sulfate Powder actively disrupts cell membrane permeability by binding to it. Bacteria lacking sensitivity to Polymyxin B Sulfate possess cell walls that block its access to the cell membrane. This antibiotic lacks efficacy against gram-positive bacteria and Polymyxin B sulfate powder binds to the cell membrane thereby removing its permeability.

Bacteria that are not sensitive to polymyxin B sulfate have a cell wall that prevents polymyxin from reaching the cell membrane. This antibiotic does not affect the gram-positive bacteria, nor does it affect anaerobes. It does affect the gram-negative bacteria including the non-fermentative and *Enterobacteriaceae* strains.

The mechanism of action of this antibiotic is that polymyxin B sulfate binds to the lipopolysaccharides in the outer membrane of gram-negative bacteria. This binding destroys the cell membrane integrity leads to leakage of intracellular content out and death of bacteria. In clinical practice, polymyxin B sulfate is usually used as the last resort against multidrug-resistant infections. This antibiotic has activity against nosocomial infections caused by *Pseudomonas aeruginosa* and *Acinetobacter baumannii*.

Cat. Number	AS-2034
CAS Number	1405-20-5
MDL Number	MFCD00131991
Pubchem	310279122
Molecular Weight	1301.56 g/mol
Molecular Formula	$C_{56}H_{98}N_{16}O_{13}.H_2SO_4$
Storage Temperature	+4 °C
Form and Color	Powder / White to off-white
Assay	≥ 6000 IU/mg
Heavy Metals	≤ 20 ppm
Specific Optical Rotation [α]D	-90 to -78
FT-IR Spectrum	Corresponds to reference spectrum
Loss on Drying	≤ 7%

pH Value	5 – 7.5
Synonym	Mastimyxin / Aerosporin