

PRODUCT DATA SHEET

Gentamycin Sulfate

PG-4030-5G

Gentamicin sulfate is an aminoglycoside antibiotic compound widely utilized in microbiological research for its broad-spectrum activity against Gram-negative and some Gram-positive bacteria.

The compound works by binding to the bacterial 30S ribosomal subunit, a critical component in the protein synthesis machinery. This binding disrupts the initiation complex of translation, causing misreading of mRNA. Such disruption leads to the production of nonfunctional or harmful proteins, ultimately resulting in bacterial cell death. Gentamicin sulfate is frequently used in studies that investigate bacterial mechanisms and behaviors, such as resistance development, biofilm formation, and the effects of antibiotic concentration on bacterial populations. Its efficacy in inhibiting a wide range of bacteria makes it an invaluable tool in genetic engineering, where sterility and bacterial control are paramount. Moreover, gentamicin sulfate is employed in the study of bacterial pathogenesis. It is used to understand how bacteria invade host cells, evade immune responses, and interact with their environment at the molecular level.

Molecular Weight: 575.67

Molecular Formula: $C_{21}H_{43}N_5O_7H_2SO_4$

Technical information

Appearance	: Powder
Physical State	: Solid
Solubility	: Soluble in water (115 mg/ml at 25° C), DMSO (<1 mg/ml at 25° C), and ethanol (<1 mg/ml at 25° C).
Storage	: Store at 4°C
Refractive Index	: n_D^{20} 1.58 (Predicted)
Optical Activity	: α_{20D} 102