



3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

Product Information

Gentamicin solution

Product Number **G 1272**

Storage Temperature 2-8 °C

Product Description

CAS Number: 1405-41-0 (powder form)

Molecular Formula¹:

Gentamicin C₁: C₂₁H₄₃N₅O₇

Gentamicin C_{1a}: C₁₉H₃₉N₅O₇

Gentamicin C₂: C₂₀H₄₁N₅O₇

Molecular Weight (free base)¹:

Gentamicin C₁ = 477.6

Gentamicin C_{1a} = 449.5

Gentamicin C₂ = 463.6

Synonyms: Gentamycin, Garamycin, Gentiomycin C

This product is cell culture tested and is appropriate for use in cell culture applications. It is sterile-filtered and formulated to contain 10 mg/ml gentamicin in deionized water. The general recommended working concentration for eukaryotic cell culture is 50 µg/ml, and 15 µg/ml for prokaryotic cells.

Gentamicin is an aminoglycoside antibiotic complex produced by fermentation of *Micromonospora purpurea* or *M. echinospora*.¹ It is a mixture of 3 major components designated as C₁, C_{1a}, and C₂. The ratio of the three major components by HPLC analysis are:

C₁: < 45%

C_{1a}: < 35%

C₂: < 30%

Gentamicin is used as the sulfate salt. Each component consists of five basic nitrogens and requires five equivalents of sulfuric acid per mole of gentamicin base.²

Gentamicin sulfate is a broad spectrum antibiotic. It inhibits the growth of a wide variety of Gram-positive and Gram-negative microorganisms, including strains resistant to tetracycline, chloramphenicol, kanamycin, and colistin, particularly strains of *Pseudomonas*, *Proteus*, *Staphylococcus*, and *Streptococcus*.^{3,4} Gentamicin sulfate inhibits bacterial protein biosynthesis by binding to the 30S subunit of the ribosome.^{4,5}

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Procedure

This product is recommended for use in cell culture applications at a volume of 5 ml per liter. Gentamicin is stable at 37 °C for 5 days.

References

1. The Merck Index, 12th ed., Entry# 4398.
2. Analytical Profiles of Drug Substances, vol. 9, Rosenkrantz, B. E., ed., Academic Press (New York, NY: 1980), pp. 295-340.
3. USP National Formulary, 16th ed., p. 1162.
4. 4. Antibiotics: origin, nature, and properties, Korzybski, T., et al., American Society for Microbiology (Washington, DC: 1978), pp. 712-723.
5. Antibiotics In Laboratory Medicine, 2nd ed., Lorian, V., ed., Williams and Wilkins (Baltimore, MD: 1986), pp. 694-696.

GCY/RXR 12/02

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.