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ProductInformation

Gentamicin sulfate salt
Cell Culture Tested

Product Number **G 1264**
Storage Temperature 2-8 °C

Product Description

CAS Number: 1405-41-0

Molecular Formula[1]:
Gentamicin C_1: $C_{21}H_{43}N_5O_7$
Gentamicin C_2: $C_{20}H_{41}N_5O_7$
Gentamicin C_{1a}: $C_{19}H_{39}N_5O_7$

Molecular Weight (free base)[1]:
Gentamicin C_1 = 477.6
Gentamicin C_2 = 463.6
Gentamicin C_{1a} = 449.5

Melting Point: 218-237 °C[1]
$[\alpha]^{25}_{d}$ = 102 (water)[1]
Synonyms: Gentamycin, Garamycin, Gentiomycin C

This product is cell culture tested and is appropriate for use in cell culture applications.

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 C_1, C_{1a}, and C_2. The ratio of the three major components by HPLC analysis are:

C_1: < 45%
C_{1a}: < 35%
C_2: < 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]

The general recommended working concentration for eukaryotic cell culture is 50 µg/ml, and 15 µg/ml for prokaryotic cells.

Precautions and Disclaimer

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

Preparation Instructions

Gentamicin sulfate is soluble in water (50 mg/ml), yielding a clear to very slightly hazy, colorless to faint yellow solution. It is practically insoluble in alcohol and other organic solvents.[2] A 4% solution in water yields a pH of 3.5 - 5.5.[6]

Storage/Stability

Sterile solutions of gentamicin sulfate should be stored at 2-8 °C. Solutions of gentamicin have been shown to be stable when stored at room temperature, and in boiling aqueous buffers of pH 2-14.[2] A solution at 1 mg/ml in 0.1 M potassium phosphate buffer (pH 8.0), stored at 2-8 °C, should be used within 30 days.[3] Gentamicin sulfate solutions may be sterilized by filtration.

References

1. The Merck Index, 12th ed., Entry# 4398.
2. Rosenkrantz, B. E., et al., Analytical Profiles of Drug Substances, **9**, 295-340 (1980).
3. USP NF, 16th ed., p. 1162.
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.
6. Martindale: The Extra Pharmacopoeia, 31st ed., Reynolds, J.E.F., ed., The Pharmaceutical Press (London, England: 1996), pp. 235-238.

GCY/RXR 12/02