

Technical Data Sheet

Gentamycin sulfate

for biochemistry

Order number: 1453

Gentamycin sulfate (syn. Gentamicin sulfate) is a water-soluble aminoglycoside antibiotic with a broad spectrum of activity. It inhibits the growth of a wide range of gram-negative microorganisms as well as many gram-positive bacteria and mycoplasmas. Gentamycin sulfate is not effective against obligate anaerobic bacteria because the uptake of aminoglycosides into the bacterial cell is oxygen dependent.

Gentamycin sulfate inhibits bacterial protein biosynthesis by binding to the 30S subunit of the ribosome, thereby preventing the reading of mRNA.

Gentamycin is a mixture of 3 major components designated as C 1, C 1a, and C 2 produced by fermentation of *Micromonospora purpurea*, a gram-positive spore-forming bacterium.

Application

Gentamycin sulfate is used to prevent bacterial contamination of cell cultures.

As a suitable cell culture antibiotic, gentamycin sulfate shows no toxic effect on mammalian cells at the usual anti-bacterial working concentrations. Gentamycin sulfate is extremely stable and characterized by low resistance formation. This makes it particularly suitable for long-term virus and tissue culture studies.

In molecular biology, gentamycin sulfate is used as a selection antibiotic.

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

Gentamycin sulfate is readily soluble in water, yielding a clear to slightly turbid, colorless to faint yellow solution. Gentamycin sulfate is practically insoluble in alcohol and other organic solvents.

Common stock solutions contain 10 mg/ml or 50 mg/ml gentamycin in water.

Storage and Stability

Gentamycin sulfate powder is stored at 2-8°C.

Solutions of gentamycin are extremely stable and withstand treatment in boiling aqueous buffers with pH values of 2-14 without loss of activity. As a heat-stable antibiotic, gentamycin sulfate retains its activity even after autoclaving. At 37°C - and over a wide pH range - it is stable for up to 15 days. However, for long-term storage of gentamycin sulfate solutions, we recommend storage at 2-8°C or at -20°C.

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