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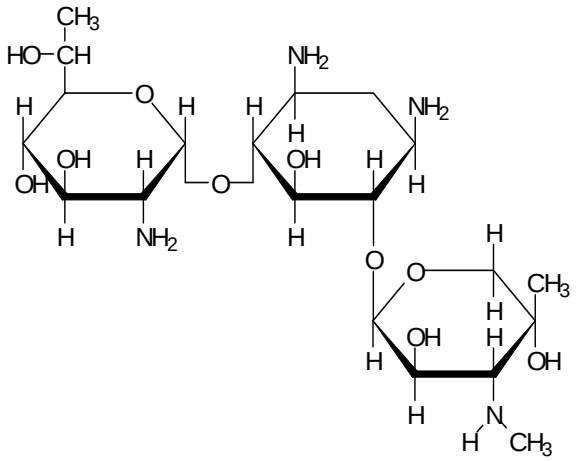
ProductInformation

GENETICIN DISULFATE*
Sigma Prod Nos. G5013 and G9516



CAS NUMBER: 108321-42-2
SYNONYMS: Antibiotic G418

PHYSICAL PROPERTIES:

Appearance: White to white with a faint yellow cast powder.
Molecular weight: 692.7
Molecular formula: $C_{20}H_{40}N_4O_{10}@2H_2SO_4$
Specific Rotation: +104.4 (C=0.3% in H_2O @ 26°C)

STABILITY / STORAGE AS SUPPLIED:

Minimum shelf-life is expected to be two years when stored properly at 2-8°C.

SOLUBILITY / SOLUTION STABILITY:

Sigma tests the solubility in water at 50 mg/ml which yields a clear to very slightly hazy colorless solution.

Aqueous solutions stored frozen at -20°C to -70°C should be stable for approximately six months.

USAGE:

Geneticin is an aminoglycoside antibiotic similar in structure to gentamycin. It exhibits toxicity towards both eukaryotic and prokaryotic cells. The optimal concentration for selection and maintenance must be determined for each cell line. For bacteria and algae concentrations, 5 ug/ml or less are recommended. Animal cells may require up to 300-500 ug/ml. Typically, resistance is conferred by one of two dominant genes of bacterial origin which can be expressed in eukaryotic cells. Cells that are multiplying will be affected sooner than those that are not. Cells in log phase may require three to seven days for selection. In general, concentrations of approximately 400 ug/ml for selection and 200 ug/ml for maintenance are required for mammalian cells.

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APPLICATIONS AND REFERENCES:

Biological activity: *Antimicrob. Ag. and Chemother.*, 6, 579 (1974).
Antiparasitic activity: *Antimicrob. Ag. and Chemother.*, 7, 811 (1975).
Known resistance factors and inhibition of plant cells: *Biochem. Biophys. Res. Commun.*, 101, 1031 (1981).
Dominant hybrid selective marker for higher eukaryotic cells: *J. Mol. Biol.*, 150, 1 (1981).
Expression of a transposable antibiotic resistance element in Saccharomyces: *Nature*, 287, 869 (1980).
DNA-mediated transformation system of Dictyostelium discoideum which leads to geneticin resistance: *Proc. Nat. Acad. Sci.* (USA), 79, 7356 (1982).

* Geneticin is a trademark of the Gibco division of Life Technologies Inc.