Amikacin disulfate salt

Product Number A 1774
Storage Temperature 2-8 °C

Product Description

Molecular Formula: C_{22}H_{43}N_{5}O_{13} \cdot 2H_2SO_4
Molecular Weight: 781.8
CAS Number: 39831-55-5
Melting Point: 220-230 °C (with decomposition)¹
Specific Rotation: +74.75° (10 mg/ml, water, 22 °C)¹
Synonyms: (S)-O-3-amino-3-deoxy-α-D-glucopyranosyl-(1→6)-O-[6-amino-6-deoxy-α-D-glucopyranosyl-(1→4)]-N-(4-amino-2-hydroxy-1-oxobutyl)2-deoxy-D-streptamine disulfate; 1-N-[L (→)-4-amino-2-hydroxybutyryl]kanamycin A disulfate²

Amikacin is a semisynthetic, aminoglycoside antibiotic that is derived from kanamycin A. Its range of activity is similar to that of gentamicin. Amikacin has particular activity against many strains of Gram-negative bacteria. It has also been reported to be active against some staphylococci and mycobacteria strains, including Mycobacterium tuberculosis and Nocardia asteroides. The minimum inhibitory concentration (MIC) range towards the most sensitive organisms has been reported at 0.1 - 8 µg/ml.¹,²

The incubation of arachidonate-enriched rabbit serum with multidrug-resistant strains of Pseudomonas aeruginosa in the presence of ceftazidime and amikacin has been studied.³ Cultures of apical-medial segments of organ of Corti from amikacin-treated rats have been investigated to probe the potential role of growth factors in the survival and differentiation of atypical Deiters’ cells and in the stimulation of hair cell regeneration processes in vitro.⁴ Amikacin treatment has been used in a study of the interactions of cultured C57BL/6 mouse pulmonary epithelial cells and cultured HeLa cells with Nocardia asteroides GUH-2.⁵

An LC-ECD method for the analysis of amikacin has been published.⁶ An HPCE/fluorescence technique for the detection of amakacin in plasma has been described.⁷

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in water (50 mg/ml), with heat as needed, yielding a clear, colorless to faint yellow solution.

Storage/Stability

Stock solutions of this product are stable at 0-4 °C for months.

References

1. The Merck Index, 12th ed., Entry# 426.
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.