

Kanosamine hydrochloride

Chemical Properties

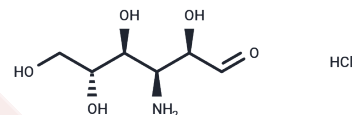
CAS No. : 57649-10-2

Formula: C₆H₁₄ClNO₅

Molecular Weight: 215.63

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



Biological Description

Description	Kanosamine hydrochloride is an antibiotic that inhibits the growth of plant-pathogenic oomycetes, certain fungi, and a few bacterial species. It shows inhibitory activity against <i>Phytophthora medicaginis</i> M2913 and <i>Aphanomyces euteiches</i> WI-98 with minimum inhibitory concentrations (MICs) of 25 and 60 µg/mL, respectively.
Targets(IC50)	Akt,Antibacterial,Antibiotic,Antifungal
In vitro	Kanosamine demonstrates inhibitory effects on select bacterial species and exhibits moderate inhibition against certain fungi, specifically targeting pathogens of plants. Its accumulation in <i>B. cereus</i> UW85 culture supernatants peaks during sporulation and is further enhanced by ferric iron addition, yet diminished with phosphate in rich media. Remarkably, kanosamine's accumulation surges over 300% with the introduction of alfalfa seedling exudate into minimal medium. Notably, kanosamine also restricts the growth of <i>Saccharomyces cerevisiae</i> and various human pathogenic fungi, including <i>Candida albicans</i> , leading to significant morphological alterations, septum formation inhibition, and cell agglutination. Its potent effect on plant-pathogenic oomycetes is evident, with <i>Phytophthora medicaginis</i> M2913 being exceptionally sensitive, whereas <i>Pythium aphanidermatum</i> Pa138 and <i>Pythium torulosum</i> A25a display lesser sensitivity, and <i>Aphanomyces euteiches</i> WI-98 exhibits intermediate sensitivity. Oomycetes show greater vulnerability to kanosamine at pH 7.0 compared to pH 5.6.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.6376 mL	23.1879 mL	46.3757 mL
5 mM	0.9275 mL	4.6376 mL	9.2751 mL
10 mM	0.4638 mL	2.3188 mL	4.6376 mL
50 mM	0.0928 mL	0.4638 mL	0.9275 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Milner JL, et al. Production of kanosamine by *Bacillus cereus* UW85. *Appl Environ Microbiol.* 1996 Aug;62(8):3061-5.

Janiak AM, et al. Mechanism of antifungal action of kanosamine. *Med Mycol.* 2001 Oct;39(5):401-8.

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