bio-techne
TOCRIS

Print Date: Feb 25th 2025

Certificate of Analysis

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Product Name: **Valinomycin** **Catalog No.: 3373** **Batch No.: 7**

CAS Number: 2001-95-8 EC Number: 217-896-6

IUPAC Name: Cyclo(D-α-hydroxyisovaleryl-D-valyl-L-lactoyl-L-valyl-D-α-hydroxyisovaleryl-D-valyl-L-lactoyl-L-valyl-D-α-hydroxyisovaleryl-D-valyl-L-lactoyl-L-valyl)

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{54}H_{90}N_6O_{18}$.

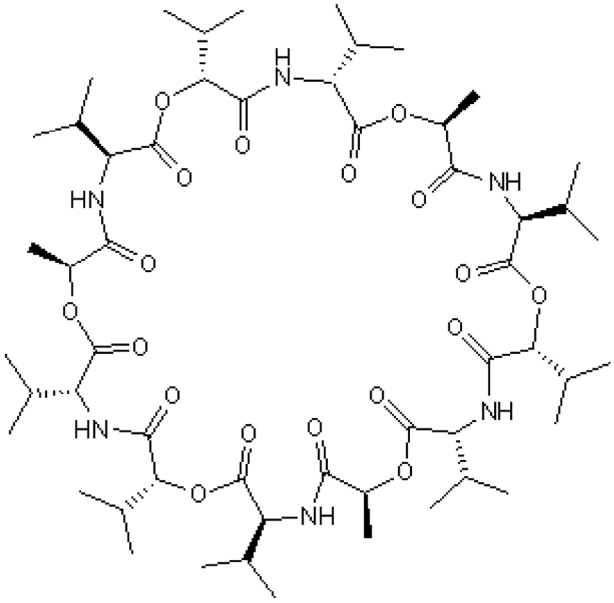
Batch Molecular Weight: 1111.32

Physical Appearance: White solid

Solubility: DMSO to 25 mM
ethanol to 25 mM

Storage: Store at -20°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 97.4% purity

^{1}H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	58.36	8.16	7.56
Found	58.02	8.31	7.4

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Description:

Valinomycin is a selective K^+ ionophore ($K_{0.5}$ values are 48, 73, 75, 93 and 246 mM for K^+, Rb^+, Cs^+, Na^+ and Li^+ respectively) that transports K^+ across biological and artificial lipid membranes. Inhibits Ca^{2+}-ATPase activity and induces apoptosis through mitochondrial membrane depolarization, caspase-3 activation and phosphatidylserine translocation in vitro.

Physical and Chemical Properties:

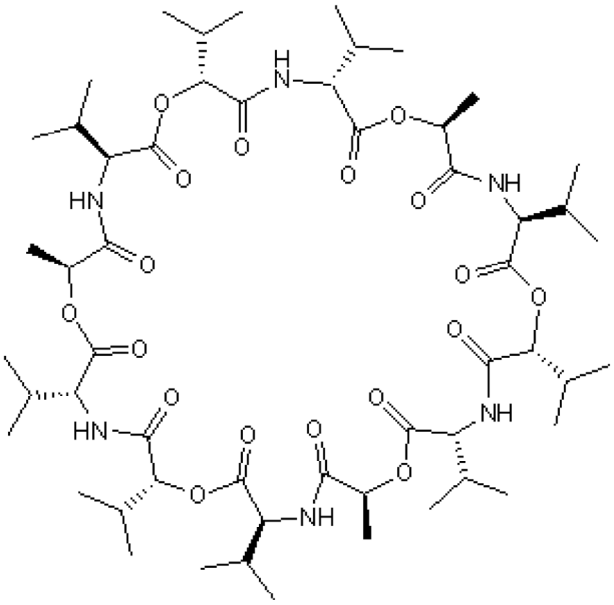
Batch Molecular Formula: $C_{54}H_{90}N_6O_{18}$.

Batch Molecular Weight: 1111.32

Physical Appearance: White solid

Minimum Purity: ≥90%

Batch Molecular Structure:



Storage: Store at -20°C

Solubility & Usage Info:

DMSO to 25 mM
ethanol to 25 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. *Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Rose and Jenkins (2007) The effects of the ionophore valinomycin on biomimetic solid supported lipid DPPTE/EPC membranes. Bioelectrochem. ***70*** 387.

Abdalah *et al* (2006) Valinomycin-induced apoptosis in Chinese hamster ovary cells. Neurosci.Letts. ***405*** 68.

Davidson and Berman (1985) Interaction of valinomycin and monovalent cations with the (Ca^{2+},Mg^{2+})-ATPase of skeletal muscle sarcoplasmic reticulum. J.Biol.Chem. ***260*** 7325. PMID: 3158656.