

Product Data Sheet

Product Name: Alamethicin

Cat. No.: GC11255

Chemical Properties

Cas. No. 27061-78-5

Chemical Name (3S,12R)-1-((S)-1-((6S,12S,15S,21S,30S)-1-((R)-1-(2-acetamido-2-methylpropanoyl)pyrrolidin-2-yl)-15-(3-amino-3-oxopropyl)-30-isobutyl-21-isopropyl-3,3,6,9,9,12,18,18,24,24,33,33-dodecamethyl-1,4,7,10,13,16,19,22,25,28,31-undecaoxo-2,5,8,11,14,17,20,23,26,

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Formula C₉₂H₁₅₀N₂₂O₂₅

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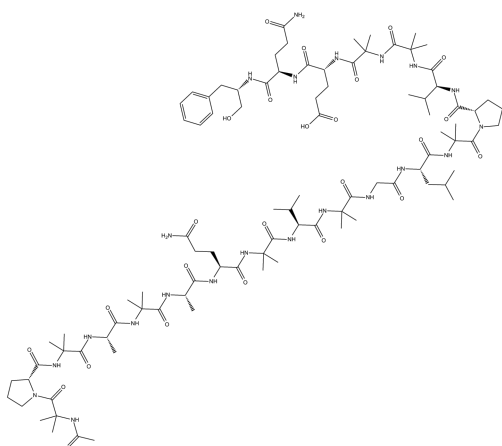
Solubility ≤10mg/ml in methanol;10mg/ml in DMSO

Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure



Background

Caution: Product has not been fully validated for medical applications. For research use only.

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Alamethicin is an antibiotic peptide.

Plenty of peptide antibiotics have been identified in the past half-century, falling into two classes, non-ribosomally synthesized peptides, such as polymyxins, gramicidins, bacitracins, glycopeptides, and ribosomally synthesized (natural) peptides. The former are usually modified and produced by bacteria, while the latter are produced by all species as a major component of the host defense molecules.

In vitro: Alamethicin was identified as an antibiotic peptide belonging to membrane active peptides of fungal origin with an unusual amphiphilic amino acid, 2-aminoisobutyric acid, which can induce helical peptide structures strongly, leading to the formation of voltage-gated ion channels in the cell membrane bilayers. Alamethicin is also widely used as agent to induce various defense responses and physiological in eukaryotic cells [1]. In addition, alamethicin was quite often used to evaluate voltage gating, ion channel assembly, as well as peptide-membrane interactions [2, 3].

In vivo: Up to now, alamethicin is only for in-vitro usage and there is no animal in-vivo study reported.

Clinical trial: So far, no clinical study has been conducted.

References:

- [1] Maischak, H., Zimmermann, M.R., Felle, H.H., et al. Alamethicin-induced electrical long distance signaling in plants. *Plant Signal. Behav.* 5(8), 988-990 (2010).
- [2] Jones, L. R., Maddock, S.W. and Besch, H.R., Jr. Unmasking effect of alamethicin on the (Na⁺,K⁺)-ATPase, β -adrenergic receptor-coupled adenylate cyclase, and cAMP-dependent protein kinase activities of cardiac sarcolemmal vesicles. *The Journal of Biological Chemistry* 255(20), 9971-9980 (1980).
- [3] Pan, J., Tristram-Nagle, S. and Nagle, J.F. Alamethicin aggregation in lipid membranes. *Journal of Membrane Biology* 231(1), 1-36 (2009).

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