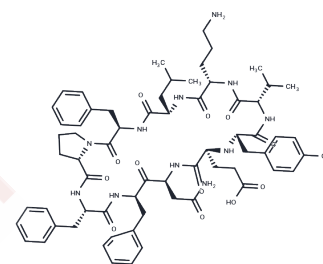


## Tyrothricin

## Chemical Properties

CAS No. :	1404-88-2
Formula:	C <sub>65</sub> H <sub>85</sub> N <sub>11</sub> O <sub>13</sub>
Molecular Weight:	1228.459
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	Tyrothricin is a natural polypeptide antibiotic, a mixture of gramicidin and tyrocidine, capable of disrupting the cell membranes of Gram-positive bacteria and applicable for treating skin infections.
Targets(IC50)	Antibacterial, Antibiotic, Antifungal, Influenza Virus
In vitro	Tyrothricin exhibits a primarily antibacterial spectrum against Gram-positive bacteria while also demonstrating inhibitory effects against certain Gram-negative bacteria. Notably, it shows a broad range of minimum inhibitory concentrations (2-256 µg/mL) against <i>Corynebacterium</i> and <i>Vitis vinifera</i> cocci. Compared to the isolated gramicidin component alone, Tyrothricin achieves complete inhibition of all <i>Vitis vinifera</i> cocci strains at concentrations as high as 128 µg/mL. Among Gram-negative bacteria, <i>Neisseria gonorrhoeae</i> and <i>Neisseria meningitidis</i> display the highest sensitivity to Tyrothricin, with an inhibitory concentration of 96 µg/mL [1]. Tyrothricin demonstrates fungicidal activity against multiple <i>Candida</i> species of <i>Phoxinus phoxinus</i> subsp. <i>Phoxinus</i> additionally exhibits anti-infective activity against Sendai-type parainfluenza virus [1].
In vivo	In contrast to intravenous (LD <sub>50</sub> in mice: 3,7 mg/kg) and intraperitoneal (LD <sub>50</sub> in mice: 20-45 mg/kg) applications, oral administration is very well tolerated, as Tyrothricin is destroyed in the gastrointestinal tract. Furthermore, due to its poor solubility and relatively high molecular weight, there is no detectable resorption when applied locally to skin or mucosa [1].

## Solubility Information

Solubility	DMSO: 80.00 mg/mL (65.12 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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### Preparing Stock Solutions

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	<b>1mg</b>	<b>5mg</b>	<b>10mg</b>
1 mM	0.814 mL	4.0701 mL	8.1403 mL
5 mM	0.1628 mL	0.814 mL	1.6281 mL
10 mM	0.0814 mL	0.407 mL	0.814 mL
50 mM	0.0163 mL	0.0814 mL	0.1628 mL

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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

Lang C, et al. Tyrothricin--An underrated agent for the treatment of bacterial skin infections and superficial wounds? Pharmazie. 2016 Jun;71(6):299-305.

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