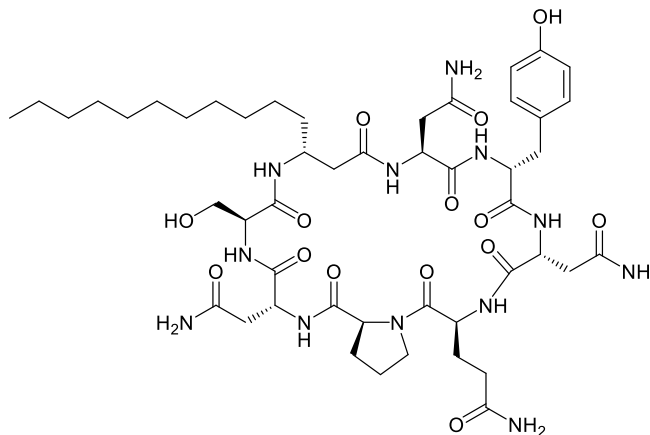


PRODUCT DATA SHEET

Date: Jul. 8, 2022

Iturin A-2

(antifungal antitumor)



Synonyms: C11 Iturin A

Specifications

Code No.	: 15171
CAS#	: 83785-07-3
Molecular Formula	: C ₄₈ H ₇₄ N ₁₂ O ₁₄
Molecular Weight	: 1043.190
Source	: <i>Bacillus</i> sp.
Supplied as	: Powder
Purity	: >90 % (HPLC)
Long Term Storage	: at -20 °C
Solubility	: Soluble in MeOH, DMSO and DMF Insoluble in H ₂ O

Application Notes

The bacteria from the genus *Bacillus* used in biological control of plant disease has been reported producing lipopeptides such as surfactin, plipastatins and iturins.¹⁾ Iturin A was isolated from culture of *Bacillus subtilis* as antifungal lipopeptide.²⁾ Structure of β-amino acid of iturin A-2, a major component of iturin A, was determined as 3-aminotetradecanoic acid.³⁾ Iturin A was involved in the control of damping-off of tomato (a seedling disease) caused by *Rhizoctonia solani*.⁴⁾ It was reported lately that iturin A-2 has antitumor activity against breast cancer cells BT474.⁵⁾ Pharmacophore mapping studies suggested that the angiotensin-converting enzyme (ACE) as one of the potential targets of iturin A.⁶⁾ Iturin A and several lipopeptides showed better docking scores than remdesivir triphosphate with lower binding energies on the docking studies. This finding indicates that these lipopeptides may bind to SARS-CoV-2 nsp12 (RNA-dependent RNA polymerase) more efficiently than the FDA-approved drug.⁷⁾

References

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- 3) Structures of β -amino acids in antibiotics iturin A. Isogai A, et al. *Tetrahedron Lett*. 1982 **23**(30) 3065-3068.
- 4) Biocontrol of *Rhizoctonia solani* damping-off Asaka O, et al. *Appl. Environ. Microbiol.* 1996 **62** 4081–4085.
- 5) Production, purification and characterization of 'Iturin A2' a lipopeptide with antitumor activity from Chinese sauerkraut bacterium *Bacillus velezensis* T701. Jiang J, et al. *Int J Pept Res Ther*. 2021 **27** 2135-2147.
- 6) Modern paradigm towards potential target identification for antiviral (SARS-nCoV-2) and anticancer lipopeptides: A pharmacophore-based approach Yadav M, et al. *Avicenna J Med Biotechnol*. 2022 **14**(1) 70–78.
- 7) Lipopeptides against COVID-19 RNA-dependent RNA polymerase using molecular docking. Xia B et al. *Biomed. J*. 2021 **44** S15-S24