Product Data Sheet

Product Name: Enniatin B
Cat. No.: GC17693

Chemical Properties

Cas. No.	917-13-5		
Chemical Name	cyclo[(2R)-2-hydroxy-3-methylbutanoyl-N-methyl-L-valyl-(2R)-2-hydroxy-3-methylbutanoyl-N-methyl-L-valyl-(2R)-2-hydroxy-3-methylbutanoyl-N-methyl-L-valyl		
SMILES	O=C(O[C@H](C(C)C)C(N([C@H](C(O[C@@H](C(N([C@H](C(O[C@@H]1C(C)C)=O)C(C)C)C)=O)C(C)C)=O)C(C)C)C)=O)[C@H](C(C)C)N(C)C1=O		
Formula	$C_{33}H_{57}N_3O_9$	M.Wt	639.8
Solubility	DMF: Soluble,DMSO: Soluble,Ethanol: Soluble,Methanol: Soluble	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ 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	Enniatin B		

Background

Enniatin B is an ionophore antibiotic.

Enniatins are one of the cyclohexadepsipeptides produced by various species of the genus Fusarium, and are reported to have antibiotic, ionophoric, and in-vitro hypolipidaemic activities.

In vitro: A non-toxic concentration of enniatin B could strongly inhibit a Pdr5p-mediated efflux of cycloheximide or cerulenin in Pdr5p-overexpressing cells. The mode of Pdr5p inhibition caused by enniatin B was competitive against FK506. However, enniatin B could not inhibit the function of Snq2p, a homologue of Pdr5p [1]. Another study showed that enniatin B was a relatively poor ionophore that could facilitate import of K+ and

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Na+ across membranes [2]. It was also found that like other enniatins, enniatin B was able to inhibit acyl-CoA: cholesterol acyltransferase [3].

In vivo: After oral administration to mice, no toxicological signs or pathological changes were observed. Moreover, enniatin B was found in all tissues and serum but not in urine, and the highest amounts was measured in liver and fat. Three phase I metabolites of enniatin B were found in liver and colon, with dioxygenated-enniatin B being most prominent [4].

Clinical trial: Up to now, enniatin B is still in the preclinical development stage.

References:
[1] K. Hiraga, S. Yamamoto, H. Fukuda, et al. Enniatin has a new function as an inhibitor of Pdr5p, one of the ABC transporters in Saccharomyces cerevisiae. Biochemical and Biophysical Research Communications 328(4), 1119-1125 (2005).
[2] M. R. Kamyar, P. Rawnduzi, C. R. Studenik, et al. Investigation of the electrophysiological properties of enniatins. Archives of Biochemistry and Biophysics429(2), 215-223 (2004).
[3] Tomoda, X. H. Huang, J. Cao, et al. Inhibition of acyl-CoA: Cholesterol acyltransferase activity by cyclodepsipeptide antibiotics. J.Antibiot.(Tokyo) 45(10),1626-1632 (1992).
[4] Rodríguez-Carrasco Y et al. Mouse tissue distribution and persistence of the food-born fusariotoxins Enniatin B and Beauvericin. Toxicol Lett. 2016 Apr 15;247:35-44.

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