Product Data Sheet

Product Name: Chlorothricin
Cat. No.: GC16628

Chemical Properties

Cas. No.	34707-92-1
Chemical Name	(4S,4aS,6aR,11E,12aR,15R,16aS,21aR,21bR)-4-[[4-O-[3-O-(3-chloro-6-methoxy-2-methylbenzoyl)-2,6-dideoxy-β-D-arabino-hexopyranosyl]-2,6-dideoxy-β-D-arabino-hexopyranosyl]oxy]-1,2,3,4,4a,6a,7,8,9,10,12a,15,16,21,21a,21b-hexadecahydro-22-hydroxy-15,21a-dimeth
SMILES	OC([C@]1([C@@]([H])(C=C([C@@H](C1)C)C(O)=O)/C=C\CCCC[C@]2([H])C=C[C@@]3([H])[C@](CCC[C@@H]3O[C@@]([H])(C[C@H]4O)O[C@@H]([C@H]4O[C@@]([H])(C[C@H]5OC(C6=C(OC)C=CC(Cl)=C6C)=O)O[C@@H]([C@H]5O)C)C)([H])[C@@]27C)OC8=O)=C8OC7=O
Formula	$C_{50}H_{63}ClO_{16}$
M.Wt	955.5
Solubility	Soluble in ethanol;Soluble in methanol;Soluble in DMSO;Soluble in dimethyl formamide
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	Chlorothricin

Background

IC50: 173, 500, 260, and 120 μM for pyruvate carboxylases from Bacillus, Azotobacter, rat, and chicken, respectively.

Chlorothricin is a macrolide-type antibiotic.

Macrolides, a class of natural products belonging to the polyketide class of natural

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products, consist of a large macrocyclic lactone ring. The lactone rings are oftem 14-, 15-, or 16-membered. Some macrolides have been reported to have antibiotic or antifungal activity and are widely used as pharmaceutical drugs.

In vitro: In a previous study, chlorothricin was found to inhibit the reaction catalyzed by pyruvate carboxylase from Bacillus stearothermophilus. Moreover, with steady-state kinetic measurements, inhibition of the overall reaction was found to be competitive with the allosteric activator of this enzyme, CoASAc, and non-competitive with respect to both substrates of MgATP and pyruvate. These findings strongly indicated that the site 1conformation of pyruvate carboxylase responsible for the regulation of the overall enzyme activity could be influenced by chlorothricin and CoASAc in an antagonistic manner [1].

In vivo: Up to now, there is no animal in vivo data reported.

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

Reference:
[1] Schindler PW, Zhner H. Mode of action of the macrolide-type antibiotic, chlorothricin. Kinetic study of the inhibition of pyruvate carboxylase from Bacillus stearothermophilus. Eur J Biochem. 1973 Nov 15;39(2):591-600.