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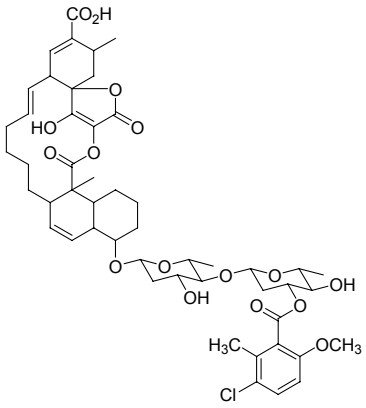
PRODUCT DATA SHEET

Chlorothricin

Code: **BIA-C1016**

Pack sizes: **1.0 mg, 5.0 mg**



Synonyms : **Antibiotic K 818A**

Specifications

CAS #	:	**34707-92-1**
Molecular Formula	:	**$C_{50}H_{63}ClO_{16}$**
Molecular Weight	:	**955.5**
Source	:	***Streptomyces* sp. MST-AS5342**
Appearance	:	**White powder**
Purity	:	**> 99% by HPLC**
Long Term Storage	:	**-20°C, protect from light**
Solubility	:	**Soluble in ethyl acetate, ethanol, methanol, DMF or DMSO.**

Application Notes

The tetronic acid, chlorothricin is an unusual macrocyclic antibiotic from a *Streptomyces* sp. Related to kijanimicin, sccharocarcins, tetrocarcin and versipelostatin. It shows inhibitory activity against cholesterol biosynthesis from mevalonate and inhibits pyruvate carboxylases purified from rat liver, chicken liver and *Azotobacter vinelandii*. Several members of this class have received considerable literature focus. Versipelostatin was shown to inhibit transcription from the promoter of GRP78, a gene that is activated as part of a stress signaling pathway under glucose deprivation resulting in unfolded protein response (UPR). The UPR-inhibitory action was seen only in conditions of glucose deprivation and caused selective and massive killing of the glucose-deprived cells. Tetrocarcin A appears to target the phosphatidylinositide-3'-kinase/Akt signaling pathway.

References

1. New cholesterol biosynthesis inhibitors MC-031 (O-demethylchlorothricin), -032 (O-demethyl hydroxy-chlorothricin), -033 and -034. Kawashima A. et al.,*J. Antibiot.* **1992**, 45, 207.
2. Mode of action of the macrolide-type antibiotic, chlorothricin. Effect of the antibiotic on the catalytic activity and some structural parameters of pyruvate carboxylases purified from rat and chicken liver. Schindler P.W. et al. *Eur. J. Biochem.* **1975**, 55, 543.
3. Effect on tumor cells of blocking survival response to glucose deprivation. Park H.R. *J. Natl. Cancer. Inst*. **2004**, 96, 1300.
4. Apoptosis and inactivation of the PI3-kinase pathway by tetrocarcin A in breast cancers. Nakajima H. *Biochem Biophys Res Commun.* **2007**, 356, 260.

Building C, 28-54 Percival Road, Smithfield NSW 2164, AUSTRALIA

Tel: 61 2 9757 4515 Fax: 61 2 9757 2586 Web: www.bioaustralis.com Email: info@bioaustralis.com