

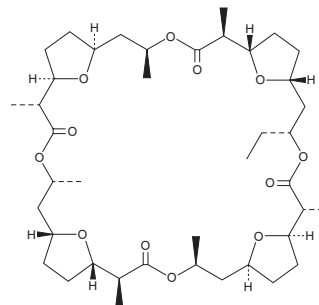
PRODUCT INFORMATION



Monactin

Item No. 25742

CAS Registry No.: 7182-54-9
Formal Name: (1R,2R,5R,7R,10S,11S,14S,16S,19R,20R,23R,25R,28S,29S,32S,34S)-5-ethyl-2,11,14,20,23,29,32-heptamethyl-4,13,22,31,37,38,39,40-octaoxapentacyclo[32.2.1.1^{7,10}.1^{16,19}.1^{25,28}]tetracontane-3,12,21,30-tetrone
MF: C₄₁H₆₆O₁₂
FW: 751.0
Purity: ≥95%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years
Item Origin: Bacterium/*Streptomyces* sp.



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Monactin is supplied as a solid. A stock solution may be made by dissolving the monactin in the solvent of choice, which should be purged with an inert gas. Monactin is soluble in organic solvents such as ethanol, methanol, DMSO, and dimethyl formamide.

Description

Monactin is a mactrotetralide antibiotic originally isolated from *Streptomyces* and a non-selective ionophore for monovalent cations, including potassium, sodium, and lithium.^{1,2} It has low antimicrobial activity but is more active than its homolog nonactin (Item No. 19468).^{3,4} Monactin induces swelling of rat liver mitochondria in medium containing either potassium or sodium, stimulates respiration, and uncouples oxidative phosphorylation.⁵ It also inhibits Wnt signaling via inhibition of TCF-β-catenin transcriptional activity.⁶

References

1. Beck, J., Gerlach, H., Prelog, V., et al. *Helvetica Chimica Acta* **45(2)**, 620-630 (1962).
2. Harold, F.M. and Baarda, J.R. *J. Bacteriol.* **95(3)**, 816-823 (1968).
3. Shaw, P.D. *Antibiotics (USSR)* **1**, 649-650 (1967).
4. Meyers, E., Pansy, F.E., Perlman, D.H., et al. *J. Antibiot. (Tokyo)* **18**, 128-129 (1965).
5. Graven, S.N., Lardy, H.A., and Estrada-O, S. *Biochem.* **6(2)**, 365-371 (1967).
6. Tamai, Y., Toume, K., Arai, M.A., et al. *Heterocycles* **84(2)**, 1245-1250 (2012).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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