

# PRODUCT INFORMATION



## Nonactin

Item No. 19468

**Formal Name:** (1R,2R,5R,7R,10S,11S,14S,16S,19R,20R,23R,25R,28S,29S,32S,34S)-2,5,11,14,20,23,29,32-octamethyl-4,13,22,31,37,38,39,40-octaoxapentacyclo[32.2.1.1<sup>7,10</sup>.1<sup>16,19</sup>.1<sup>25,28</sup>]tetracontane-3,12,21,30-tetrone

**MF:** C<sub>40</sub>H<sub>64</sub>O<sub>12</sub> (for Nonactin)

**FW:** 736.9 (for Nonactin)

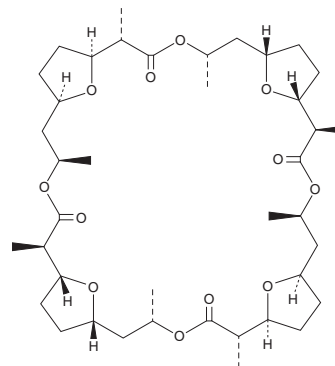
**Purity:** ≥95% (mixture of homologues)

**Supplied as:** A crystalline solid

**Storage:** -20°C

**Stability:** ≥4 years

**Item Origin:** Bacterium/*Streptomyces griseus*



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

### Laboratory Procedures

Nonactin is supplied as a crystalline solid. A stock solution may be made by dissolving the nonactin in the solvent of choice, which should be purged with an inert gas. Nonactin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of nonactin in these solvents is approximately 1, 0.25, and 10 mg/ml, respectively.

Nonactin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, nonactin should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Nonactin has a solubility of approximately 0.33 mg/ml in a 1:2 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Nonactin is a naturally occurring macrotetrolide antibiotic that acts as an ionophore for monovalent cations, including, K<sup>+</sup>, NH<sub>4</sub><sup>+</sup>, and Tl<sup>+</sup>.<sup>1-3</sup> It is used to facilitate the movement of monovalent cations through natural and artificial membranes.<sup>2,3</sup>

### References

1. Browne, A., and O'Donnell, M. J. Ammonium secretion by Malpighian tubules of *Drosophila melanogaster*: Application of a novel ammonium-selective microelectrode. *J. Exp. Biol.* **216**(Pt 20), 3818-3827 (2013).
2. Hall, J. E., and Latorre, R. Nonactin-K<sup>+</sup> complex as a probe for membrane asymmetry. *Biophys. J.* **16**(1), 99-103 (1976).
3. Skulskii, I. A., Saris, N. E. L., Savina, M. V., *et al.* Uptake of thallos ions by mitochondria is stimulated by nonactin but not by respiration alone. *Eur. J. Biochem.* **120**(2), 263-266 (1981).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 11/29/2022

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD

ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM