

Product Data Sheet

Product Name: Dinactin
 Cat. No.: GC13564

Chemical Properties

Cas. No. 20261-85-2

Chemical Name (1R,2R,5R,7R,10S,11S,14S,16S,19R,20R,23R,25R,28S,29S,32S,34S)-5,23-diethyl-2,11,14,20,29,32-hexamethyl-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

SMILES O=C(O[C@H](CC)C[C@]1([H])O[C@@]([C@@H]2C)([H])CC1)[C@H](C)[C@@]3([H])CC[C@](C[C@H](C)OC([C@H]([C@@]4([H])O[C@](C[C@H](OC([C@H](C)[C@]5([H])O[C@](CC5)([H])C[C@H](C)OC2=O)=O)CC)([H])CC4)C)=O)([H])O3

Formula C₄₂H₆₈O₁₂

M.Wt

765

Solubility Soluble in DMSO

Storage

Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C 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

Background

Dinactin is a macrotetrolide antibiotic that acts as an ionophore for monovalent cations, such as K⁺, NH₄⁺, and Rb⁺.^[1] It is commonly used to study membrane properties.^{[1],[2]} Dinactin is a component of a macrotetralide-rich antifungal mixture produced by *Streptomyces*.^[3] Dinactin inhibits T-cell proliferation and cytokine production in vitro and reduces pulmonary eosinophilia in antigen-challenged mice.^[4]

Reference:

[1]. Laprade, R., Grenier, F., Pagé-Dansereau, M., et al. Carrier-mediated ion transport in lipid bilayer membranes. *Can. J. Biochem. Cell Biol.* 62(8), 738-751 (1984).

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

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- [2]. Lapointe, J.-Y., and Laprade, R. Kinetics of carrier-mediated ion transport in two new types of solvent-free lipid bilayers. *Biophys. J.* 39(2), 141-150 (1982).
- [3]. Silva, L.J., Crevelin, E.J., Souza, W.R., et al. *Streptomyces araujoniae* Produces a Multiantibiotic Complex with Ionophoric Properties to Control *Botrytis cinerea*. *Phytopathology* 104(12), 1298-1305 (2014).
- [4]. Umland, S.P., Shah, H., Jakway, J.P., et al. Effects of cyclosporin A and dinactin on T-cell proliferation, interleukin-5 production, and murine pulmonary inflammation. *Am. J. Respir. Cell Mol. Biol.* 20(3), 481-492 (1999).

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