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ProductInformation

Concanamycin A

Product Number **C 9705**
Storage Temperature -20 °C

Product Description
Molecular Formula:
$C_{46}H_{75}NO_{14}$
Molecular Weight: 866.1
CAS Number: 80890-47-7
Synomyms: Folimycin; CMA

The concanamycins are macrolide antibiotics first isolated from *Streptomyces* species. These compounds are effective inhibitors of the proliferation of mouse splenic lymphocytes when stimulated by concanavalin A. Concanamycin A (CMA) is biologically active *in vitro* against several fungi and yeasts, but not against bacteria. Concanamycins A, B, and C caused 99%, 82%, and 88% inhibition, respectively, of the incorporation of tritiated thymidine into cells when used at a concentration of 1 μg/ml. When the concentration was increased 3-fold, the inhibition was >99%.[1]

The concanamycins, including A, which are structurally related to the bafilomycins, possess an 18-membered lactone ring and a 6-membered hemiketal ring in which the 23-OH is glycosylated by 2-deoxy-β-D-rhamnose. The stereochemistry of comparable centers of bafilomycins and concanamycins is identical and the conformation of both macrolide families is very similar because of an identical hydrogen bonding system. In general, the concanamycins are better and more specific inhibitors than the bafilomycins of this class of membrane-bound ATPases. For example, the membrane-bound ATPase from *N. crassa* (vacuolar ATPase or V-type ATPase) exhibited high sensitivity to concanamycin A, with an IC_{50} of 0.002×10^{-3} μmol/mg. Concanamycin A has 20 times the inhibitory effect on the V-type ATPase compared to bafilomycin A1.[2]
Its inhibition of vacuolar type H^+ ATPase has been studied,[3] and compared with the effects of bafilomycin in inducing apoptotic cell death.[4] The family of concanamycins have been reported to exhibit immunosuppressive activity.[5]

Precautions and Disclaimer
For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions
Concanamycin A is soluble in chloroform, methanol, ethanol, acetone, ethyl acetate, and DMSO.

Storage/Stability
Chloroform, methanol, and ethanol solutions should be prepared just before use. Solutions in DMSO are stable for at least one year when stored at -20 °C.

References
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2. Drose, S., et al., Inhibitory effect of modified bafilomycins and concanamycins on P- and V-type adenosinetriphosphatases. Biochemistry, **32(15)**, 3902-3906 (1993).
3. Kataoka, T., et al., Acidification is essential for maintaining the structure and function of lytic granules of CTL. Effect of concanamycin A, an inhibitor of vacuolar type H^+-ATPase, on CTL-mediated cytotoxicity. J. Immunol., **153(9)**, 3938-3947 (1994).

4. Nishihara, T., et al., Specific inhibitors of vacuolar type H^+-ATPases induce apoptotic cell death. Biochem. Biophys. Res. Comm., **212(1)**, 255-262 (1995).

5. Vanek, Z., et al., Immunomodulators isolated from microorganisms. Folia Microbiol. (Praha), **36(2)**, 99-111 (1991).

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