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PRODUCT INFORMATION



Oligomycin A

Item No. 11342

CAS Registry No.: 579-13-5

Formal Name: (1S,2'R,4E,5'R,6R,6'S,7S,8R,10S,11S,12R,14S,15R,16S,18E,20E,22S,25R,28R,29S)-22-ethyl-3',4',5',6'-tetrahydro-7,11,14,15-tetrahydroxy-6'-[(1Z)-2-hydroxy-1-propen-1-yl]-5',6,8,10,12,14,16,28,29-nonamethyl-spiro[2,26-dioxabicyclo[23.3.1]nonacosa-4,18,20-triene-27,2'-[2H]pyran]-3,9,13-trione

Synonym:

MCH 32

MF:

C₄₅H₇₄O₁₁

FW:

791.1

Purity:

≥95%

UV/Vis.:

λ_{max}: 225 nm

Supplied as:

A crystalline solid

Storage:

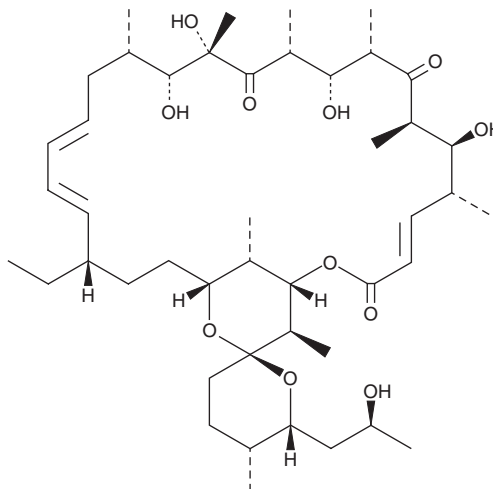
-20°C

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

Oligomycin A is supplied as a crystalline solid. A stock solution may be made by dissolving the oligomycin A in the solvent of choice, which should be purged with an inert gas. Oligomycin A is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of oligomycin A in ethanol and DMF is approximately 30 mg/ml and approximately 20 mg/ml in DMSO.

Oligomycin A is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, oligomycin A should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Oligomycin A has a solubility of approximately 0.3 mg/ml in a 1:2 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Oligomycins are macrolides created by *Streptomyces* species that can be toxic to other organisms. Different oligomycin isomers are highly specific for the disruption of mitochondrial metabolism. Oligomycin A, a dominant analog of the isomers, is an inhibitor of mitochondrial F₁F₀ ATP synthase that induces apoptosis in a variety of cell types (average GI₅₀ = 270 nM).¹⁻³ Oligomycin A exhibits antifungal, antitumor, and nematocidal activities, but has poor solubility in water and other biocompatible solvents, which limits its clinical application.⁴

References

1. Salomon, A.R., Voehringer, D.W., Herzenberg, L.A., *et al.* *Chem. Biol.* **8**, 71-80 (2001).
2. Shin, Y.-K., Yoo, B.C., Chang, H.J., *et al.* *Cancer Res.* **65**(8), 3162-3170 (2005).
3. Laatsch, H., Kellner, M., Wolf, G., *et al.* *J. Antibiot.* **46**(9), 1334-1341 (1993).
4. Zu, Y., Zhao, Q., Zhao, X., *et al.* *Int. J. Nanomedicine* **6**, 3429-3441 (2011).

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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