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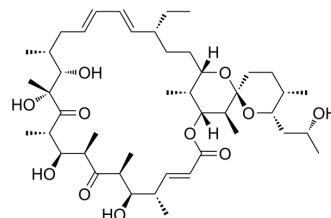
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Oligomycin A

Cat. No.:	HY-16589
CAS No.:	579-13-5
Molecular Formula:	C ₄₅ H ₇₄ O ₁₁
Molecular Weight:	791.06
Target:	ATP Synthase; Fungal; Antibiotic
Pathway:	Membrane Transporter/Ion Channel; Anti-infection
Storage:	Powder -20°C 3 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (126.41 mM; Need ultrasonic)
 Ethanol : 100 mg/mL (126.41 mM; ultrasonic and heat to 60°C)

	Solvent Concentration	Mass	1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM		1.2641 mL	6.3206 mL	12.6413 mL
	5 mM		0.2528 mL	1.2641 mL	2.5283 mL
	10 mM		0.1264 mL	0.6321 mL	1.2641 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (3.16 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: 2.5 mg/mL (3.16 mM); Suspended solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (3.16 mM); Clear solution
- Add each solvent one by one: 10% EtOH >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (3.16 mM); Clear solution
- Add each solvent one by one: 10% EtOH >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (3.16 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Oligomycin A (MCH 32), created by Streptomyces, acts as a mitochondrial F₀F₁-ATPase inhibitor, with a K_i of 1 μM; Oligomycin A shows anti-fungal activity.

IC ₅₀ & Target	Ki: 1 μ M (F ₀ F ₁ -ATPase) ^[1]
In Vitro	Oligomycin A is a mitochondrial F₀F₁-ATPase inhibitor with a K_i of 1 μM. Oligomycin A shows cytotoxic to the NCI-60 cell lines, with GI₅₀ of 10 nM. Oligomycin A also inhibits the activity of Triton X-100-solubilized ATPase with a K_i of 0.1 μM. Furthermore, Oligomycin A has anti-fungal activity^[1]. Oligomycin A (2.4 μM) inhibits the ability of spermatozoa to achieve feasible in vitro capacitation (IVC), and also suppresses progesterone-induced in vitro acrosome exocytosis (IVAE) as well as the concomitant peaks of O₂ consumption and ATP levels^[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay ^[1]	Drug (Oligomycin A, etc.) dilutions are added to monolayer or suspension cells in 96 well plates in triplicate for varying times. MTT is then added to the wells at a final concentration of 0.5 mg/mL. Supernatant is removed after pelleting the reduced MTT crystals. The crystals are fully dissolved in 40 mM HCl in isopropanol. Plates are scanned on a microplate reader at 595 nm^[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
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CUSTOMER VALIDATION

- Cell Res. 2021 Sep;31(9):980-997.
- Cell Metab. 2023 Jan 3;35(1):200-211.e9.
- Cell Stem Cell. 2023 Apr 6;30(4):450-459.e9.
- Nano Today. 1 June 2022.
- Nat Commun. 2022 Apr 6;13(1):1853.

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REFERENCES

[1]. Salomon AR, et al. Apoptolidin, a selective cytotoxic agent, is an inhibitor of F₀F₁-ATPase. Chem Biol. 2001 Jan;8(1):71-80.

[2]. Ramió-Lluch L, et al. Oligomycin A-induced inhibition of mitochondrial ATP-synthase activity suppresses boar sperm motility and in vitro capacitation achievement without modifying overall sperm energy levels. Reprod Fertil Dev. 2014;26(6):883-97.

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

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