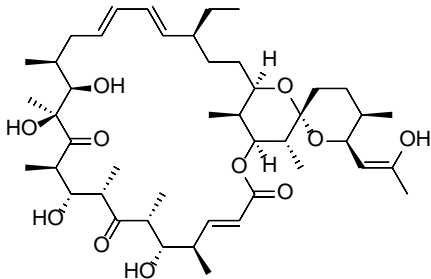


Product data sheet



MedKoo Cat#: 329825 Name: Oligomycin A CAS: 579-13-5 Chemical Formula: C ₄₅ H ₇₂ O ₁₁ Exact Mass: 788.5075 Molecular Weight: 789.06		
Product supplied as:	Powder	
Purity (by HPLC):	≥ 98%	
Shipping conditions	Ambient temperature	
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.	

1. Product description:

Oligomycin A, also known as MCH 32, is an inhibitor of ATP synthase. Oligomycin A inhibits ATP synthase by blocking its proton channel (Fo subunit), which is necessary for oxidative phosphorylation of ADP to ATP (energy production). The inhibition of ATP synthesis by oligomycin A will significantly reduce electron flow through the electron transport chain; however, electron flow is not stopped completely due to a process known as proton leak or mitochondrial uncoupling. This process is due to facilitated diffusion of protons into the mitochondrial matrix through an uncoupling protein such as thermogenin, or UCP1.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	100.0	126.73
Ethanol	100.0	126.73

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.26 mL	6.32 mL	12.64 mL
5 mM	0.25 mL	1.26 mL	2.53 mL
10 mM	0.13 mL	0.63 mL	1.26 mL
50 mM	0.03 mL	0.13 mL	0.25 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Ramió-Lluch L, Yeste M, Fernández-Novell JM, Estrada E, Rocha L, Cebrián-Pérez JA, Muiño-Blanco T, Concha II, Ramírez A, Rodríguez-Gil JE. 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. doi: 10.1071/RD13145. PMID: 25319379.
2. He L, Jang JH, Choi HG, Lee SM, Nan MH, Jeong SJ, Dong Z, Kwon YT, Lee KS, Lee KW, Chung JK, Ahn JS, Kim BY. Oligomycin A enhances apoptotic effect of TRAIL through CHOP-mediated death receptor 5 expression. *Mol Carcinog.* 2013 Feb;52(2):85-93. doi: 10.1002/mc.21831. Epub 2011 Nov 15. PMID: 23335397.

In vivo study

TBD

7. Bioactivity

Biological target:

Product data sheet



Oligomycin A (MCH 32), created by Streptomyces, acts as a mitochondrial F_0F_1 -ATPase inhibitor, with a K_i of 1 μ M.

In vitro activity

Incubation of boar spermatozoa in a capacitation medium with oligomycin A, a specific inhibitor of the F_0 component of the mitochondrial ATP synthase, induced an immediate and almost complete immobilisation of cells. Oligomycin A also inhibited the ability of spermatozoa to achieve feasible in vitro capacitation (IVC), as measured through IVC-compatible changes in motility patterns, tyrosine phosphorylation levels of the acrosomal p32 protein, membrane fluidity and the ability of spermatozoa to achieve subsequent, progesterone-induced in vitro acrosome exocytosis (IVAE). Both inhibitory effects were caused without changes in the rhythm of O_2 consumption, intracellular ATP levels or mitochondrial membrane potential (MMP). IVAE was accompanied by a fast and intense peak in O_2 consumption and ATP levels in control spermatozoa. Oligomycin A also inhibited progesterone-induced IVAE as well as the concomitant peaks of O_2 consumption and ATP levels.

Reference: Reprod Fertil Dev. 2014;26(6):883-97. <https://pubmed.ncbi.nlm.nih.gov/25319379/>

In vivo activity

TBD

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.