

Product Data Sheet

Product Name: Oligomycin B

Cat. No.: GC16409

Chemical Properties

Cas. No. 11050-94-5

Chemical Name (1S,2'R,4E,5'R,6R,6'R,7S,8R,10S,11S,12R,14S,15R,16S,18E,20E,22S,25R,28R,29S)-22-ethyl-5',6'-dihydro-7,11,14,15-tetrahydroxy-6'-[(2S)-2-hydroxypropyl]-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]pyra

SMILES O=C([C@H](C)[C@@H](O)[C@H](C)/C=C/1)[C@@H](C)[C@H](O)[C@@H](C)C([C@](O)(C)[C@H](O)[C@@H](C)C/C=C/C=C/[C@](CC)([H])CC[C@]2([H])[C@H](C)[C@]([C@@H](C)[C@]3(C(C[C@@H](C)[C@](C[C@@H](O)C)([H])O3)=O)O2)([H])OC1=O)=O

Formula C₄₅H₇₂O₁₂

M.Wt 805.1

Solubility ≤30mg/ml in ethanol;20mg/ml in DMSO;30mg/ml in dimethyl formamide

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.

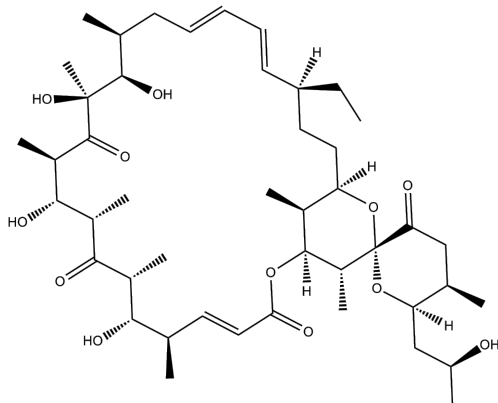
Caution: Product has not been fully validated for medical applications. For research use only.

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

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Structure



Background

Oligomycin B is a mitochondrial F₁F₀ ATP synthase inhibitor.

The mitochondrial F₁F₀ ATP synthase is responsible for the ATP production in mammals via a rotary catalytic mechanism. Studies also show that the F₁F₀ ATP synthase can switch to an ATP hydrolase, which occurs under conditions during myocardial ischemia.

In vitro: Previous study found that oligomycin B and aurovertin B were able to inhibit both the synthase and the hydrolase function, which not only rendered them difficult to be experimentally used, but also precluded them from being therapeutics. Aurovertin B bound between the subunits catalytic F₁ domain of the F₁F₀ ATPase, where it prevented the conformational changes required for the catalytic cycle of this enzyme, whereas oligomycin bound to the F₀ domain and blocked proton flow [1].

In vivo: In a previous animal study, intracranial pressure measurements were performed in SD rats treated by intraperitoneal injection of vehicle, cyclosporine A, or oligomycin B. It was found that cerebral edema and mitochondrial impairment could be significantly worsened by treatment with oligomycin B, whereas a noticeable improvement could be observed in animals that received injections of cyclosporine A [2].

Clinical trial: Up to now, oligomycin B is still in the preclinical development stage.

References:

[1] G. J. Grover and J. Malm. Pharmacological profile of the selective mitochondrial F₁F₀ ATP

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hydrolase inhibitor BMS-199264 in myocardial ischemia. *Cardiovasc.Ther.* 26, 287-296 (2008).

[2] Vlodavsky E, Palzur E, Shehadeh M, Soustiel JF. Post-traumatic cytotoxic edema is directly related to mitochondrial function. *J Cereb Blood Flow Metab.* 2017 Jan;37(1):166-177.

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