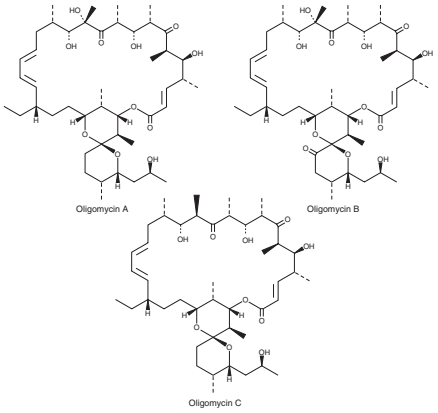
PRODUCT INFORMATION

Oligomycin Complex

Item No. 11341



CAS Registry No.: 1404-19-9
MF: $C_{45}H_{74}O_{11}$ (Oligomycin A)
$C_{45}H_{72}O_{12}$ (Oligomycin B)
$C_{45}H_{74}O_{10}$ (Oligomycin C)
FW: 791.1 (Oligomycin A)
805.1 (Oligomycin B)
775.1 (Oligomycin C)
Purity: ≥95% (Mixture of A, B, C)
UV/Vis.: λ_{max}: 225 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

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

Oligomycin complex is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, oligomycin complex should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Oligomycin complex 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 through their ability to inhibit mitochondrial membrane-bound ATP synthases. The mitochondrial F_1F_O ATP synthase can switch to an ATP hydrolase during ischemia, so that, under these conditions, inhibition by oligomycins will reduce ATP depletion rather than block ATP synthesis.[1] Oligomycin complex is a mixture of oligomycins A (Item No. 11342), B (Item No. 11343), and C. Oligomycin A is a selective inhibitor of mitochondrial F_1F_O-ATP synthase that induces apoptosis in a variety of cell types (average GI_{50} = 270 nM).[2-4] Oligomycin B is a nonselective inhibitor of ATP synthases. Oligomycin B (1-10 µM) can reduce the rate of ATP depletion in myocardial ischemia and decrease calcium-induced calcium release oscillation frequency of rat sensory neurons.[1,5]

References

1. Grover, G.J. and Malm, J. *Cardiovasc. Ther.* **26**, 287-296 (2008).
2. Salomon, A.R., Voehringer, D.W., *Chem. Biol.* **8**, 71-80 (2001).
3. Shin, Y.-K., Yoo, B.C., Chang, H.J., *et al. Cancer Res.* **65(8)**, 3162-3170 (2005).
4. Laatsch, H., Kellner, M., Wolf, G., *et al. J. Antibiot.* **46(9)**, 1334-1341 (1993).
5. Jackson, J.G. and Thayer, S.A. *J. Neurophysiol.* **96**, 1093-1104 (2006).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM