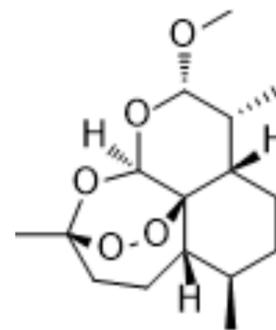


Artemether

Cat. No.:	HY-N0402		
CAS No.:	71963-77-4		
Molecular Formula:	C ₁₆ H ₂₆ O ₅		
Molecular Weight:	298.37		
Target:	Parasite		
Pathway:	Anti-infection		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (335.15 mM; Need ultrasonic)
 H₂O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	3.3515 mL	16.7577 mL	33.5154 mL
	5 mM	0.6703 mL	3.3515 mL	6.7031 mL
	10 mM	0.3352 mL	1.6758 mL	3.3515 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 (8.38 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
 Solubility: ≥ 2.5 mg/mL (8.38 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
 Solubility: ≥ 2.5 mg/mL (8.38 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Artemether is an anti-malarial compound that targets drug-resistant strains of falciparum malaria^[1].

IC₅₀ & Target

Plasmodium

In Vitro

Artemether (0-200 μg/mL, 24-72 h) inhibits rat C6 glioma cell growth in a dose- and time-dependent manner^[2].
 Artemether (0-10 μM, 72 h) inhibits RANKL-induced osteoclast (osteoclast precursor cells (BMMs)) formation and related

gene expression (TRAP, NFATc1, V-ATPase-d2, CTSK, DC-STAMP, MMP-9)^[2].

Artemether (48 or 96 h) inhibits ConA- or alloantigen-induced BALB/c splenocyte proliferation (IC₅₀: 6.3 and 3.5 μM)^[4].

Artemether (0-50 μM, 16-36 h) inhibits production of the IL-2 and IFN-γ in BALB/c splenocyte^[4].

Artemether (0-50 μM, 72 h) inhibits ConA-induced splenocyte, CD4+T- and CD8+ T-cell divisions, and inhibits cell cycle progression through G1/S transition^[4].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis^[3]

Cell Line:	RAW264.7 cells (treated with 100 ng/mL RANKL)
Concentration:	10 μM
Incubation Time:	6 h
Result:	Inhibited the activation of MAPK subfamilies, including ERK, JNK, and p38.

Cell Cycle Analysis^[4]

Cell Line:	ConA-stimulated T lymphocytes
Concentration:	1, 10 and 50 μM
Incubation Time:	72 h
Result:	Arrested 47, 56 and 91% (at 1, 10 and 50 μM) of the cells at G0/G1 phases, respectively.

In Vivo

Artemether (0-66 mg/kg, p.o.) inhibits tumor growth and angiogenesis in SD rats bearing C6 glioma cells^[2].

Artemether (10 mg/kg, i.p., 8 days) protects mice against LPS-induced osteolytic bone loss^[3].

Artemether (50 and 100 mg/kg, p.o.) inhibits T-cell-mediated immune responses (ear swelling) in DNFB-induced DTH model in BALB/c mice^[4].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	LPS (5 mg/kg) treated mice ^[3]
Dosage:	10 mg/kg
Administration:	i.p., 8 days
Result:	Prevented LPS induced osteolytic bone loss and the reduction in bone volume. Increased bone volume/total volume (BV/TV), decreased osteoclast surface/bone surface (Oc.S/BS) and number of TRAP-positive cells.

REFERENCES

[1]. Wu H, et al. Artemether attenuates LPS-induced inflammatory bone loss by inhibiting osteoclastogenesis and bone resorption via suppression of MAPK signaling pathway. *Cell Death Dis.* 2018 May 1;9(5):498.

[2]. Wang JX, et al. Investigation of the immunosuppressive activity of artemether on T-cell activation and proliferation. *Br J Pharmacol.* 2007 Mar;150(5):652-61.

[3]. Xiao, S., et al., Recent investigations of artemether, a novel agent for the prevention of schistosomiasis japonica, mansoni and haematobia. *Acta Trop.* 2002. 82(2): p. 175-81.

[4]. Wu, Z.P., et al., Inhibitive effect of artemether on tumor growth and angiogenesis in the rat C6 orthotopic brain gliomas model. *Integr Cancer Ther.* 2009. 8(1): p. 88-92.

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

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