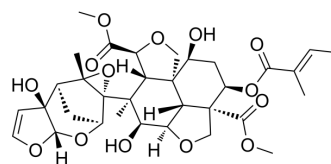


Azadirachtin B

Cat. No.:	HY-133108
CAS No.:	106500-25-8
Molecular Formula:	C ₃₃ H ₄₂ O ₁₄
Molecular Weight:	662.68
Target:	Parasite; Phosphatase; Influenza Virus; EBV
Pathway:	Anti-infection; Metabolic Enzyme/Protease
Storage:	-20°C, protect from light, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light, stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 50 mg/mL (75.45 mM; Need ultrasonic)																					
	<table border="1"> <thead> <tr> <th rowspan="2">Solvent</th> <th rowspan="2">Mass</th> <th colspan="3">Concentration</th> </tr> <tr> <th>1 mg</th> <th>5 mg</th> <th>10 mg</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Preparing Stock Solutions</td> <td>1 mM</td> <td>1.5090 mL</td> <td>7.5451 mL</td> <td>15.0902 mL</td> </tr> <tr> <td>5 mM</td> <td>0.3018 mL</td> <td>1.5090 mL</td> <td>3.0180 mL</td> </tr> <tr> <td>10 mM</td> <td>0.1509 mL</td> <td>0.7545 mL</td> <td>1.5090 mL</td> </tr> </tbody> </table>	Solvent	Mass	Concentration			1 mg	5 mg	10 mg	Preparing Stock Solutions	1 mM	1.5090 mL	7.5451 mL	15.0902 mL	5 mM	0.3018 mL	1.5090 mL	3.0180 mL	10 mM	0.1509 mL	0.7545 mL	1.5090 mL
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	Please refer to the solubility information to select the appropriate solvent.																					
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (3.77 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (3.77 mM); Clear solution 																					

BIOLOGICAL ACTIVITY

Description	Azadirachtin B is a limonoid isolated from seed kernels of <i>Azadirachta indica</i> . Azadirachtin B increases alkaline phosphatase (ALP) activity and stimulates osteoblast differentiation. Azadirachtin B is active against the Epstein-Barr virus early antigen (EBV-EA). Azadirachtin B has insecticidal, nematocidal, anticancer, anti-inflammatory, antiviral and osteogenic properties ^{[1][2][3]} .
IC₅₀ & Target	<i>Plutella xylostella</i> ^[1] Alkaline phosphatase (ALP) ^[2] Epstein-Barr virus early antigen (EBV-EA) ^[3]
In Vitro	Azadirachtin B (1 pM-100 μM; 48 hours; Osteoblast cells) treatment shows highest proliferation at 10 nM and 100 pM concentrations in osteoblast cells ^[1] .

Azadirachtin B increases expression of RunX-2 -2.5 fold at 10 nM concentration, ALP expression -2.8 fold at 10 nM and 100 pM concentration and OCN expression -2.5 folds at 10 nM as compared with control^[1].

Azadirachtin B (Compound 4) exhibits toxicity to the diamondback moth (*Plutella xylostella*) with an LD₅₀ of 4.85-1.06 µg/g body weight, in 92 h^[2].

Azadirachtin B (compound 21) exhibits moderate or potent inhibitory effects (IC₅₀ value of 384 mol ratio/32 pmol TPA) against the Epstein-Barr virus early antigen (EBV-EA) activation induced by tetradecanoylphorbol-13-acetate (TPA)^[3].

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

Cell Proliferation Assay^[1]

Cell Line:	Osteoblast cells
Concentration:	1 pM, 100 pM, 10 nM, 1 µM, 100 µM
Incubation Time:	48 hours
Result:	Showed highest proliferation at 10 nM and 100 pM concentrations in osteoblast cells.

In Vivo

On evaluation of Azadirachtin B (compound 21; oral administration) for its anti-tumor-initiating activity on the two-stage carcinogenesis of mouse skin tumor induced by peroxyxynitrite (ONOO⁻; PN) as an initiator and TPA as a promoter, this exhibited marked inhibitory activity^[3].

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

REFERENCES

[1]. Kushwaha P, et al. Azadirachta indica triterpenoids promote osteoblast differentiation and mineralization in vitro and in vivo. *Bioorg Med Chem Lett*. 2016 Aug 1;26(15):3719-24.

[2]. Kanokmedhakul S, et al. Azadirachtin derivatives from seed kernels of *Azadirachta excelsa*. *J Nat Prod*. 2005 Jul;68(7):1047-50.

[3]. Akihisa T, et al. Melanogenesis inhibitory, anti-inflammatory, and chemopreventive effects of limonoids from the seeds of *Azadirachta indica* A. Juss. (neem). *J Oleo Sci*. 2009;58(11):581-94.

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

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