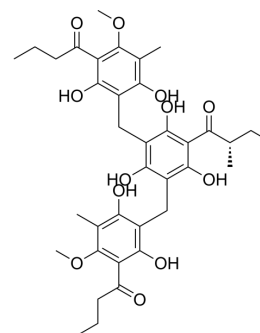


Agrimol B

Cat. No.:	HY-N0704												
CAS No.:	55576-66-4												
Molecular Formula:	C ₃₇ H ₄₆ O ₁₂												
Molecular Weight:	682.75												
Target:	Sirtuin; PPAR; Bacterial; Fatty Acid Synthase (FASN); c-Myc												
Pathway:	Cell Cycle/DNA Damage; Epigenetics; Metabolic Enzyme/Protease; Vitamin D Related/Nuclear Receptor; Anti-infection; Apoptosis												
Storage:	<table border="0"> <tr> <td>Powder</td> <td>-20°C</td> <td>3 years</td> </tr> <tr> <td></td> <td>4°C</td> <td>2 years</td> </tr> <tr> <td>In solvent</td> <td>-80°C</td> <td>6 months</td> </tr> <tr> <td></td> <td>-20°C</td> <td>1 month</td> </tr> </table>	Powder	-20°C	3 years		4°C	2 years	In solvent	-80°C	6 months		-20°C	1 month
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	4°C	2 years											
In solvent	-80°C	6 months											
	-20°C	1 month											



SOLVENT & SOLUBILITY

In Vitro	DMSO : 5 mg/mL (7.32 mM; ultrasonic and warming and heat to 60°C)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	Preparing Stock Solutions	1 mM	1.4647 mL	7.3233 mL	14.6467 mL
		5 mM	0.2929 mL	1.4647 mL	2.9293 mL
		10 mM	---	---	---
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: ≥ 0.5 mg/mL (0.73 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 0.5 mg/mL (0.73 mM); Clear solution 				

BIOLOGICAL ACTIVITY

Description	Agrimol B, a polyphenol, is an orally active and potent SIRT1 activator. Agrimol B shows anti-adipogenic and anticancer activity. Agrimol B shows antibacterial activity against plant pathogens. Agrimol B dramatically inhibits 3T3-L1 adipocyte differentiation by reducing PPAR γ , C/EBP α , FAS, UCP-1, and apoE expression. The action of Agrimol B on the cancer cells is likely derived from its effect on c-MYC, SKP2 and p27 ^{[1][2][3]} .	
IC₅₀ & Target	SIRT1	PPAR γ
In Vitro	Agrimol B blocks adipogenesis at the early stage of differentiation in a dose-dependent manner, with an IC ₅₀ of 3.35 ± 0.32 μ M ^[1] .	

Agrimol B induces SIRT1 (silent information regulator 2 homolog 1) translocation and expression in 3T3-L1 adipocytes^[1]. Agrimol B inhibits PC-3 and A549 cells growth, with GI50 (growth inhibition 50%) values of 29 and 19 μ M, GI75 values of 49 and 50 μ M, and GI90 values of 63 and 76 μ M, respectively^[2].

Agrimol B (0-76 μ M) dose-dependently increases cells at G0 in both cell lines^[2].

Agrimol B (0-76 μ M, 3 days) reduces the protein expression of c-MYC and SKP2 (S-phase kinase-associated protein 2), increases p27 (cyclin-dependent kinase inhibitor 1B), and down-regulates SPT16 (Suppressor of Ty Homolog-16) and SSRP1 (Structure-Specific Recognition Protein 1)^[2].

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

Cell Cycle Analysis^[2]

Cell Line:	PC-3 and A549 cells
Concentration:	29 and 63 μ M (PC-3), 19 and 76 μ M (A549)
Incubation Time:	10 min
Result:	Dose-dependently increased cells at G0 in both cell lines. Reduced percentage of cells positive for Ki-67, and increased p27 positive cell population in PC-3 and A549 cells.

Western Blot Analysis^[2]

Cell Line:	PC-3 and A549 cells
Concentration:	0, 29, 49, 63 μ M (PC-3); 0, 19, 50, and 76 μ M (A549)
Incubation Time:	3 days
Result:	Reduced c-MYC, SKP2 and increased p27 in both cell lines, and down-regulated SPT16 and SSRP1 in A549 cells with no effect on CRM1 in both cell lines.

Immunofluorescence^[1]

Cell Line:	3T3-L1 preadipocyte
Concentration:	0, 3, and 10 μ M
Incubation Time:	6 days
Result:	Significantly increased nuclear positive rate of SIRT1; Markedly increased SIRT1 expression at 10 μ M, the effect vanished at 3 μ M. Down-regulated PPAR γ and C/EBP α (CCAAT/enhancer-binding protein α) expression; Significantly decreased FAS (fatty acid synthesis), UCP-1 (uncoupling protein-1), and apoE (apolipoprotein E) expression at 10 μ M.

In Vivo

Agrimol B (10 mg/kg, Orally, daily) reduces growth of prostate cancer cell xenograft in mice^[2].

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

Animal Model:	BALB/c nude mice (6-week-old, male, injected with PC-3 cells in 0.2 mL PBS subcutaneously) ^[2]
Dosage:	10 mg/kg
Administration:	Orally, daily, after 15 days of cancer cell implantation
Result:	Inhibited tumor growth in a mouse model of human prostate cancer, reduced the tumor volume at day 31 and day 32.

REFERENCES

- [1]. Hnit SST, et al. Agrimol B present in Agrimonia pilosa Ledeb impedes cell cycle progression of cancer cells through G0 state arrest. Biomed Pharmacother. 2021 Sep;141:111795.
- [2]. Chun S B, et al. Antibacterial Activities against Plant Pathogens and Identification of Agrimol B from Agrimonia pilosa LEDEB[J]. 1000000 1000 300, 2006, 10(3):230-236.
- [3]. Agrimol B, et al. Agrimol B suppresses adipogenesis through modulation of SIRT1-PPAR gamma signal pathway. Biochem Biophys Res Commun. 2016 Aug 26;477(3):454-60.
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Caution: Product has not been fully validated for medical applications. For research use only.

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