Pinosylvin

Cat. No.: HY-N2387

CAS No.: 22139-77-1

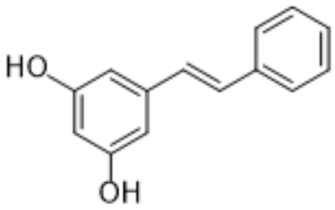
Molecular Formula: $C_{14}H_{12}O_2$

Molecular Weight: 212.24

Target: Bacterial; Apoptosis; Autophagy

Pathway: Anti-infection; Apoptosis; Autophagy

Storage: 4°C, protect from light
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (471.16 mM; Need ultrasonic)

Preparing Stock Solutions	Concentration / Solvent / Mass	1 mg	5 mg	10 mg
	1 mM	4.7116 mL	23.5582 mL	47.1165 mL
	5 mM	0.9423 mL	4.7116 mL	9.4233 mL
	10 mM	0.4712 mL	2.3558 mL	4.7116 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (11.78 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (11.78 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (11.78 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Pinosylvin is a pre-infectious stilbenoid toxin isolated from the heartwood of Pinus species, has anti-bacterial activities[1].
Pinosylvin is a resveratrol analogue, can induce cell apoptosis and autophapy in leukemia cells[2].

In Vitro

Pinosylvin (0-100 μM; 24 hours) is cytotoxic to THP□1 and U937 cells, exhibits an IC_{50} value of 20-30 μM in leukemia cells, the maximal cytotoxic effect occurred at 100 μM following incubation for 24 hr[3].
Pinosylvin (0-100 μM; 24 hours) enhances the number of annexin V^+ and PI^+ cells in the U937 population at 50 μM, increases annexin V^+ and PI^+ cells in the THP□1 population at 100 μM[3].
Pinosylvin (0-100 μM; 24 hours) promotes autophagy in leukemia cells by enhancing the level of LC3□II and p62/SQSTM1 degradation in leukemia cells[3].

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

Cell Viability Assay[3]

Cell Line:	Leukemia cells
Concentration:	0 μM; 0.1 μM; 1 μM; 10 μM; 50 μM; 100 μM
Incubation Time:	24 hours
Result:	Was cytotoxic to leukemia cells at high concentrations.

Apoptosis Analysis[3]

Cell Line:	U937 and THP□1 cells
Concentration:	0 μM; 0.1 μM; 1 μM; 10 μM; 50 μM; 100 μM
Incubation Time:	24 hours
Result:	Induced apoptosis cell number in U937 and THP□1 cells.

Western Blot Analysis[3]

Cell Line:	U937 and THP□1 cells
Concentration:	0 μM; 0.1 μM; 1 μM; 10 μM; 50 μM; 100 μM
Incubation Time:	24 hours
Result:	Induced autophagy in leukemia cells.

In Vivo

Pinosylvin (intravenous injection; 10 mg/kg) yields the plasma AUC, urine t , CL and Vd values of 5.23 ± 1.20 mgh mL^{-1}, 13.13 ± 2.05 h, 1.84 ± 0.44 $Lh^{-1}kg^{-1}$ and 2.29 Lkg^{-1}, respectively in male Sprague-Dawley rats, in a PK study[1].

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

REFERENCES

[1]. Lee SK, et al. Antibacterial and antifungal activity of pinosylvin, a constituent of pine.Fitoterapia. 2005 Mar;76(2):258-60.

[2]. Roupe KA, et al. Pharmacokinetics of selected stilbenes: rhapontigenin, piceatannol and pinosylvin in rats.J Pharm Pharmacol. 2006 Nov;58(11):1443-50.

[3]. Song J, et al. Pinosylvin enhances leukemia cell death via down-regulation of AMPKα expression. Phytother Res. 2018 Oct;32(10):2097-2104.

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