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Lieferung & Zahlungsart

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Zuschläge

- Mindermengenzuschlag
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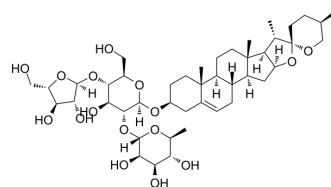
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Polyphyllin I

Cat. No.:	HY-N0047		
CAS No.:	50773-41-6		
Molecular Formula:	C ₄₄ H ₇₀ O ₁₆		
Molecular Weight:	855.02		
Target:	JNK; mTOR; Akt; PDK-1; Autophagy; Apoptosis		
Pathway:	MAPK/ERK Pathway; PI3K/Akt/mTOR; Autophagy; Apoptosis		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (116.96 mM; Need ultrasonic)
 H₂O : < 0.1 mg/mL (ultrasonic) (insoluble)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	1.1696 mL	5.8478 mL	11.6956 mL
	5 mM	0.2339 mL	1.1696 mL	2.3391 mL
	10 mM	0.1170 mL	0.5848 mL	1.1696 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
 Solubility: ≥ 2.5 mg/mL (2.92 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
 Solubility: ≥ 2.5 mg/mL (2.92 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
 Solubility: ≥ 0.83 mg/mL (0.97 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Polyphyllin I is a bioactive constituent extracted from Paris polyphylla, has strong anti-tumor activity. Polyphyllin I is an activator of the JNK signaling pathway and is an inhibitor of PDK1/Akt/mTOR signaling. Polyphyllin I induces autophagy, G2/M phase arrest and apoptosis^{[1][2][3]}.

IC₅₀ & Target

JNK signaling^[2]
 PDK1/Akt/mTOR signaling^[3]

In Vitro

Polyphyllin I (0.625-10 mg/mL; 24-72 h) inhibits the proliferation of three non-small cell lung cancer (NSCLC) cell lines, with the IC₅₀s of 1.24, 2.40, and 2.33 µg/ml for A549, H460, and SK-MES-1 cells, respectively^[1].

Polyphyllin I (2.5 mg/mL; 6-24 h) induces apoptosis of A549 cells^[1].

Polyphyllin I (0.25-2 µM; 24 h) increase in LC3-II expression and decrease in P62 expression in HGC-27 cells^[3].

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

Cell Proliferation Assay^[1]

Cell Line:	A549, H460, and SK-MES-1 cells ^[1]
Concentration:	24, 48, 72 hours
Incubation Time:	24, 48, 72 hours
Result:	Markedly reduced proliferation capacity in vitro and in a concentration-dependent manner.

In Vivo

Polyphyllin I (1.5 mg/kg; i.p. twice daily from day 2 to day 11) significantly inhibit the tumor growth of A549 cells in the nude mice^[1].

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

Animal Model:	BALB/c nude mice (5 weeks old) were s.c. inoculated with A549 cells ^[1]
Dosage:	1.5 mg/kg
Administration:	i.p. twice daily from day 2 to day 11
Result:	The tumor growth rate was much lower than that in cisplatin group and PBSgroup.

CUSTOMER VALIDATION

- FASEB J. 2020 Dec;34(12):16414-16431.

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REFERENCES

[1]. Kong M, et al. Effects of polyphyllin I on growth inhibition of human non-small lung cancer cells and in xenograft. Acta Biochim Biophys Sin (Shanghai). 2010 Nov;42(11):827-33.

[2]. Liu J, et al. Polyphyllin I induces G2/M phase arrest and apoptosis in U251 human glioma cells via mitochondrial dysfunction and the JNK signaling pathway. Acta Biochim Biophys Sin (Shanghai). 2017 Jun 1;49(6):479-486.

[3]. He J, et al. Polyphyllin I induces autophagy and cell cycle arrest via inhibiting PDK1/Akt/mTOR signal and downregulating cyclin B1 in human gastric carcinoma HGC-27 cells. Biomed Pharmacother. 2019 Sep;117:109189.

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

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