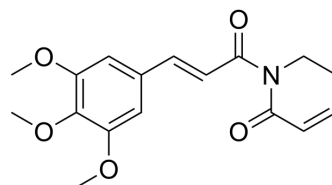


Piperlongumine

Cat. No.:	HY-N2329												
CAS No.:	20069-09-4												
Molecular Formula:	C ₁₇ H ₁₉ NO ₅												
Molecular Weight:	317.34												
Target:	ERK; Reactive Oxygen Species; Autophagy; Apoptosis; Bacterial; Ferroptosis												
Pathway:	MAPK/ERK Pathway; Stem Cell/Wnt; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB; Autophagy; Apoptosis; Anti-infection												
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
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 (315.12 mM; Need ultrasonic)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	Preparing Stock Solutions	1 mM	3.1512 mL	15.7560 mL	31.5119 mL
		5 mM	0.6302 mL	3.1512 mL	6.3024 mL
		10 mM	0.3151 mL	1.5756 mL	3.1512 mL
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 (7.88 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (7.88 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.08 mg/mL (6.55 mM); Clear solution 				

BIOLOGICAL ACTIVITY

Description	Piperlongumine is a alkaloid ^[1] , possesses ant-inflammatory, antibacterial, antiangiogenic, antioxidant, antitumor, and antidiabetic activities ^[2] . Piperlongumine induces ROS, and induces apoptosis in cancer cell lines ^[1] . Piperlongumine shows anti-cardiac fibrosis activity, suppresses myofibroblast transformation via suppression of the ERK1/2 signaling pathway. Piperlongumin could be used in the study of migrasome ^{[2][3]} .	
IC₅₀ & Target	ERK1	ERK2

In Vitro	<p>Piplartine (5, 10, and 15 μM) significantly decreases cell proliferation of 786-O, SKBR3, Panc1, A549, and L3.6pL cancer cells after treatment for 24 and 48 hours, induces apoptosis and ROS in these cell lines at 5 and 10 μM after 3 or 9 h of treatment^[1].</p> <p>Piplartine (5 or 10 μM) induces cleaved PARP and downregulates Sp1, Sp3, Sp4, and Sp-regulated genes^[1].</p> <p>Piplartine (20 μM) decreases the viability of cardiac fibroblasts (CFs). Piplartine (0-10 μM) suppresses myofibroblast transformation via suppression of the ERK1/2 signaling pathway^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
In Vivo	<p>Piperlongumine (30 mg/kg/day, i.p. for 3 weeks) exhibits potent anti-tumor effect in athymic nude mice bearing L3.6pL cells without body weight loss^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

CUSTOMER VALIDATION

- Biomed Pharmacother. 2024 Apr 22;175:116637.
- Int J Mol Sci. 2022 Mar 5;23(5):2868.
- Int Immunopharmacol. 2021 Apr 19;96:107658.
- Inflammation. 2022 Jul 13;1-16.
- bioRxiv. 2023 Jul 11.

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REFERENCES

- [1]. Yan Qin , et al. Pan-cancer analysis identifies migrasome-related genes as a potential immunotherapeutic target: A bulk omics research and single cell sequencing validation. Front Immunol. 2022 Nov 3;13:994828.
- [2]. Karki K, et al. Piperlongumine Induces Reactive Oxygen Species (ROS)-Dependent Downregulation of Specificity Protein Transcription Factors.
- [3]. Wu X, e,t al. Piperlongumine inhibits angiotensin II-induced extracellular matrix expression in cardiac fibroblasts. J Cell Biochem. 2018 Dec;119(12):10358-10364

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

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