

Product Datasheet

Piperlongumine

Catalog No. **BP-01958** · CAS **20069-09-4** · Form **free base** · Physical state **solid** · Color **White to yellow** · Version **1.0** ·
 Revision **2026-09-08**

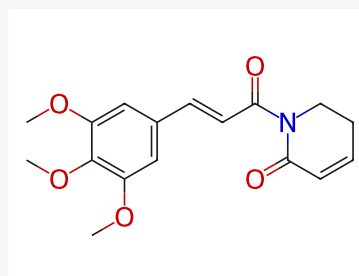
FOR RESEARCH USE ONLY. NOT FOR HUMAN OR VETERINARY USE.

Target ERK; Reactive Oxygen Species (ROS); Autophagy; Apoptosis; Bacterial; Ferroptosis	Research area Cardiovascular Disease; Infection
---	---

Molecular formula **C₁₇H₁₉NO₅**

Molecular weight **317.3365**

STRUCTURE



DESCRIPTION

Piperlongumine is an alkaloid, possesses anti-inflammatory, antibacterial, antiangiogenic, antioxidant, antitumor, and antidiabetic activities. Piperlongumine induces ROS, and induces apoptosis in cancer cell lines. 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.

BIOLOGICAL ACTIVITY

In Vitro

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.

Piplartine (5 or 10 μM) induces cleaved PARP and downregulates Sp1, Sp3, Sp4, and Sp-regulated genes.

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.

In Vivo

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.

SOLUBILITY

Soluble in DMSO

REFERENCES

[1]. Karki K, et al. Piperlongumine Induces Reactive Oxygen Species (ROS)-Dependent Downregulation of Specificity Protein Transcription Factors.

[2]. Wu X, et al. Piperlongumine inhibits angiotensin II-induced extracellular matrix expression in cardiac fibroblasts. J Cell Biochem. 2018 Dec;119(12):10358-10364

[3]. 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.

Tel: +86 20 31130026 · Fax: +86 20 36822386 · tech@biochemprobe.com · www.biochemprobe.com

BiochemProbe is the catalog brand of Guangzhou Yuyuan Biotech Co., Ltd. · For research use only.

Lot CoA and SDS are separate documents.