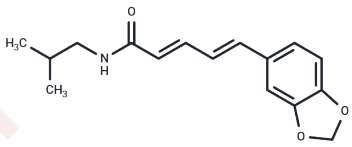
Data Sheet (Cat.No.TN2085)

TargetMol

Piperlonguminine

Chemical Properties



CAS No. : 5950-12-9

Formula: C16H19NO3

Molecular Weight: 273.33

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Piperlonguminine, an alkaloid amide isolated from the Piper species, exhibits anti-inflammatory, antitumor, neuroprotective, anti-platelet, anti-melanogenic, antifungal, and antibacterial activities. It inhibits Akt/mTOR signaling, promotes autophagy, and mediates cancer cell death.
Targets(IC50)	Anti-infection,Antibacterial,Antibiotic,Antifungal
In vitro	Piperlonguminine from Piper longum was discovered to inhibit melanin production in melanoma B16 cells stimulated with alpha-melanocyte stimulating hormone (alpha-MSH), 3-isobutyl-1-methylxanthine or protoporphyrin IX, where the compound exhibited stronger depigmenting efficacy than kojic acid.?However, piperlonguminine did not affect 1-oleoyl-2-acetyl-sn-glycerol-induced melanogenesis and did not affect protein kinase C-mediated melanin production.?Surprisingly, piperlonguminine did not inhibit the catalytic activity of cell-free tyrosinase from melanoma B16 cells but rather suppressed tyrosinase mRNA expression.?This effect was attributed to the inhibitory action of piperlonguminine on alpha-MSH-induced signaling through cAMP to the cAMP responsive element binding protein that in turn regulates the expression of the microphthalmia-associated transcription factor, a key activator of the tyrosinase promoter.?This study demonstrates that piperlonguminine is an efficient depigmenting agent with a novel mechanism of action.

Solubility Information

Solubility	DMSO: 27.78 mg/mL (101.64 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Corn Oil: 1 mg/mL (3.66 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.6586 mL	18.2929 mL	36.5858 mL
5 mM	0.7317 mL	3.6586 mL	7.3172 mL
10 mM	0.3659 mL	1.8293 mL	3.6586 mL
50 mM	0.0732 mL	0.3659 mL	0.7317 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Inhibitory effect of piperlonguminine on melanin production in melanoma B16 cell line by downregulation of tyrosinase expression.Pigment Cell Res. 2006 Feb;19(1):90-8.