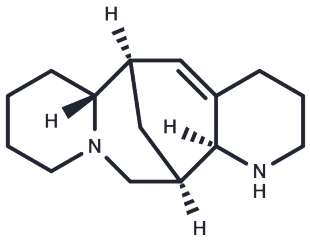
Data Sheet (Cat.No.T6377)

TargetMol

Aloperine

Chemical Properties



CAS No. : 56293-29-9

Formula: C15H24N2

Molecular Weight: 232.36

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	Aloperine exhibits anti-inflammatory, antibacterial, antiviral, and anti-tumor properties.
Targets(IC50)	Apoptosis,HIV Protease,Antibiotic,Autophagy,Virus Protease
In vitro	When topically applied to NC/Nga mice, Aloperine significantly and dose-dependently reduced 2,4-dinitrofluorobenzene (DNFB)-induced dermatitis as indicated by dermatitis scores and ear thickness on days 13 and 14. Additionally, a 1% topical application of Aloperine on BALB/c mice inhibited the increase in ear swelling and redness triggered by DNFB, and markedly reduced the upregulation of tumor necrosis factor-alpha (TNF-α), interleukin-1 beta (IL-1β), and interleukin-6 (IL-6) mRNA and protein levels in ear biopsy homogenates. Aloperine dose-dependently diminished DNFB-induced lymphocyte and eosinophil infiltration, as well as mast cell infiltration in treated regions. Histological examination of ear tissues from treated NC/Nga mice also showed a clear dose-dependent decrease in the levels of cytokines TNF-α, IL-1β, and IL-6. Furthermore, Aloperine significantly lowered the elevated levels of IL-4, IL-13, and IFN-γ induced by DNFB, while dose-dependently increasing IL-10 levels, indicating its effective modulation of inflammatory responses.
In vivo	Contrary to its effect on leukemia cells, Aloperine at a concentration of up to 1 mM did not significantly reduce the viability of normal PBMNCs after 72 hours. A 20 μM dose of Aloperine administered for 48 hours was observed to induce apoptosis and autophagy in HL-60 cells in a dose-dependent manner. The strongest cytotoxic effect of Aloperine on HL-60 cells was observed at 72 hours, with an inhibition rate of 94.1%.
Cell Research	Cells are seeded in 96-well plates in 100-μL culture medium. After incubation of 4 hours for leukaemia cells and of 24 hours for solid cancer cells, experimental media containing either excipient control or Aloperine are added to appropriate wells. Five concentrations of Aloperine for 48-hour treatment are used to determine the in vitro IC50 growth inhibitory values of Aloperine in cancer cells. After incubation, 10 μL of MTT solution (5 mg/mL) is added to each well. The plates are then incubated for 4 hours at 37 °C. Intracellular formazan crystals are dissolved by addition of 100 μL of isopropanol-HCl-SDS solution to each well. After an overnight incubation at 37 °C, the optical density of the samples is determined at 570 nm. DNA fragmentation is analysed after the extraction of DNA from cells exposed to the indicated doses of Aloperine for 48 hours using apoptotic DNA ladder kit. For autophagy detection, cells are collected and

Cell Research	incubated with PBS containing 5 μM acridine orange for 15 minutes. The acridine orange is removed and the cells are resuspended in 100 μL of PBS. Fluorescent micrographs are obtained with an inverted fluorescent microscope. Autophagy is quantified based on the mean number of cells displaying intense red staining for three fields (containing at least 50 cells per field) for each experimental condition.(Only for Reference)

Solubility Information

Solubility	Ethanol: 46 mg/mL (197.97 mM),Sonication is recommended. DMSO: 35.71 mg/mL (153.68 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (8.61 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	4.3037 mL	21.5183 mL	43.0367 mL
5 mM	0.8607 mL	4.3037 mL	8.6073 mL
10 mM	0.4304 mL	2.1518 mL	4.3037 mL
50 mM	0.0861 mL	0.4304 mL	0.8607 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

Yuan XY, et al. Eur J Pharmacol, 2010, 629(1-3), 147-152.
Huang S, Zhang Y, Zhang Y, et al. Establishment of LC-MS/MS method for determination of aloperine in rat plasma and its application in preclinical pharmacokinetics. Journal of Chromatography B. 2021, 1173: 122671.
Lin Z, et al. Basic Clin Pharmacol Toxicol, 2011, 108(5), 304-309.
Yuan XY, et al. Eur J Pharmacol, 2011, 658(2-3), 263-269.
Huang S, Zhang Y, Zhang Y, et al. Establishment of LC-MS/MS method for determination of aloperine in rat plasma and its application in preclinical pharmacokinetics[J]. Journal of Chromatography B. 2021, 1173: 122671.