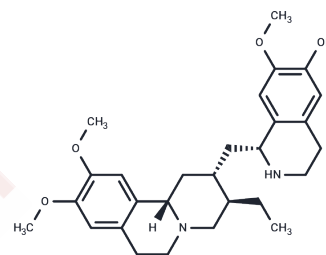


Cephaeline

Chemical Properties

CAS No. :	483-17-0
Formula:	C ₂₈ H ₃₈ N ₂ O ₄
Molecular Weight:	466.61
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	Cephaeline was highly active against protected primary CLL cells (relative IC ₅₀ 's 35nM) and acted by repressing HIF-1 α and disturbing intracellular redox homeostasis.
Targets(IC ₅₀)	Anti-infection, Ferroptosis, Reactive Oxygen Species, Nrf2, HIF, Influenza Virus, ROS, Virus Protease
In vitro	We compared the transcriptomes of primary CLL cells cocultured or not with protective bone marrow stromal cells (BMSCs) and found that oxidative phosphorylation, mitochondrial function, and hypoxic signaling undergo most significant dysregulation in non-protected CLL cells, with the changes peaking at 6-8 h, directly before induction of apoptosis. A subset of CLL patients displayed a gene expression signature resembling that of cocultured CLL cells and had significantly worse progression-free and overall survival. To identify drugs blocking BMSC-mediated support, we compared the relevant transcriptomic changes to the Connectivity Map database. Correlation was found with the transcriptomic signatures of the cardiac glycoside ouabain and of the ipecac alkaloids emetine and Cephaeline. These compounds were highly active against protected primary CLL cells (relative IC ₅₀ 's 287, 190, and 35 nM, respectively) and acted by repressing HIF-1 α and disturbing intracellular redox homeostasis. We tested emetine in a murine model of CLL and observed decreased CLL cells in peripheral blood, spleen, and bone marrow, recovery of hematological parameters and doubling of median survival (31.5 vs. 15 days, P = 0.0001).

Solubility Information

Solubility	Ethanol: 33.33 mg/mL (71.43 mM), Sonication is recommended. DMSO: 100 mg/mL (214.31 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: 4 mg/mL (8.57 mM), Sonication is recommended. <i>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.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.1431 mL	10.7156 mL	21.4312 mL
5 mM	0.4286 mL	2.1431 mL	4.2862 mL
10 mM	0.2143 mL	1.0716 mL	2.1431 mL
50 mM	0.0429 mL	0.2143 mL	0.4286 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

Oxidative stress as candidate therapeutic target to overcome microenvironmental protection of CLL.Leukemia.
2019 Jul 12.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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