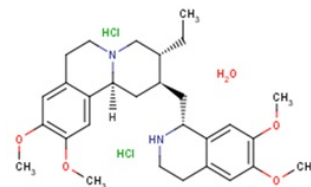


(+)-Emetine dihydrochloride hydrate

## Chemical Properties

CAS No.:	7083-71-8
Formula:	C <sub>29</sub> H <sub>40</sub> N <sub>2</sub> O <sub>4</sub> ·2HCl·H <sub>2</sub> O
Molecular Weight:	571.58
Appearance:	Solid
Storage:	0-4°C for short term (days to weeks), or -20°C for long term (months).



## Biological Description

Description	Emetine is a drug used as both an anti-protozoal and to induce vomiting. It is produced from the ipecac root.
Targets(IC <sub>50</sub> )	Others: None
In vitro	Emetine dihydrochloride hydrate is reported to have an IC <sub>50</sub> value of 1 nM on the drug sensitive 3D7 P. falciparum parasite strains. Dose response curves are determined for both drugs using K1 resistant isolates and IC <sub>50</sub> values of 47±2.1 nM and 2.6±0.41 nM established for emetine dihydrochloride hydrate and DHA, respectively[1]. After the lymphoblasts are treated with cycloheximide or emetine dihydrochloride hydrate, the expression level of the mutant allele is elevated almost equally to the wild-type alleles by direct sequencing of the corresponding cDNA[2]. Emetine is identified as a lead compound with significant concentration dependent suppression of PEDF-induced TNF secretion and an IC <sub>50</sub> of 146 nM. Emetine inhibits PEDF-mediated TNF release without affecting cell viability. Emetine binds to PEDF receptor ATGL with high-binding affinity (K <sub>D</sub> =14.3 nM)[3]. Emetine treatment reduces cell viability, induces apoptosis, prompts AML cells towards differentiation and downregulates HIF-1α[4].
In vivo	Emetine (0.002, 0.02, 0.2 and 2 mg/kg) does not induce any significant difference in body weight in mice with low-dose streptozotocin model of T1D. Administration of emetine not only attenuates blood glucose levels in dose-dependent way but also induces a persistent attenuation of blood glucose levels. Daily administration of emetine dose-dependently attenuates hyperglycemic response by d 21. Consistent with this observation, administration of emetine, but not the vehicle control, results in a sustained attenuation of blood glucose levels. Emetine improves disease severity in a spontaneous model of NOD T1D[3]. Emetine (1 mg/kg) reduces both leukemia burden in an in vivo xenotransplantation mouse model and the clonogenic capacity of leukemic cells upon treatment[4].
Cell Research	7.5×10 <sup>5</sup> cells per mL are cultured in 96-well plates in complete medium. Emetine and Ara-C are added at indicated concentrations. Cell viability is measured by 7-AAD exclusion and Hoechst33342 positivity staining by flow cytometry; and cell count is obtained by volume in a FACSCantoll cytometer. Statistical analysis and EC <sub>50</sub> determination are calculated in GraphPad. FlowJo software is used for flow cytometry analysis.
Animal Research	Animal Model: Mice

## Solubility Information

Solubility	DMSO: 16.5 mg/mL ( < 1 mg/ml refers to the product slightly soluble or insoluble)
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## Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.75 mL	8.748 mL	17.495 mL
5 mM	0.35 mL	1.75 mL	3.499 mL
10 mM	0.175 mL	0.875 mL	1.75 mL
50 mM	0.035 mL	0.175 mL	0.35 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. The storage conditions and period of the stock solution: - 80 °C for 6 months; - 20 °C for 1 month. Please use it as soon as possible.

## Reference

1. Matthews H, et al. Drug repositioning as a route to anti-malarial drug discovery: preliminary investigation of the in vitro anti-malarial efficacy of emetine dihydrochloride hydrate. *Malar J.* 2013 Oct 9;12:359.
2. Wu L, et al. PRRT2 truncated mutations lead to nonsense-mediated mRNA decay in Paroxysmal Kinesigenic Dyskinesia. *Parkinsonism Relat Disord.* 2014 Dec;20(12):1399-404.
3. Hudson LK, et al. Emetine Di-HCl attenuates Type 1 diabetes mellitus in mice. *Mol Med.* 2016 Jun 10;22.
4. Cornet-Masana JM, et al. Emetine induces chemosensitivity and reduces clonogenicity of acute myeloid leukemia cells. *Oncotarget.* 2016 Apr 26;7(17):23239-50.

## Inhibitors · Natural Compounds · Compound Libraries

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