

Product Name: Emetine dihydrochloride

Catalog No.: 7342

Batch No.: 1

CAS Number: 316-42-7

IUPAC Name: (2S,3R,11bS)-3-Ethyl-1,3,4,6,7,11b-hexahydro-9,10-dimethoxy-2-[[[(1R)-1,2,3,4-tetrahydro-6,7-dimethoxy-1-isoquinolinyl]methyl]-2H-benzo[a]quinolizine dihydrochloride

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₂₉H₄₀N₂O₄·2HCl·1½H₂O

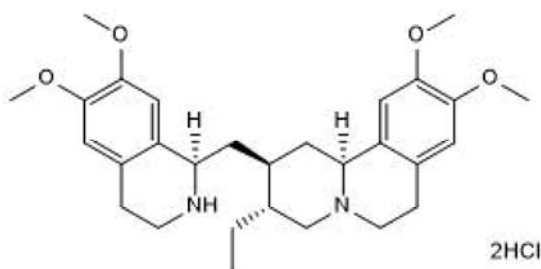
Batch Molecular Weight: 580.59

Physical Appearance: White solid

Solubility: water to 100 mM

Storage: Store at -20°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 99.1% purity

¹H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Optical Rotation: [α]_D = +14.2 (Concentration = 1, Solvent = Water)

Microanalysis:

| | Carbon | Hydrogen | Nitrogen | Chlorine |
|-------------|--------|----------|----------|----------|
| Theoretical | 59.99 | 7.81 | 4.83 | 12.21 |
| Found | 59.63 | 7.88 | 4.72 | 12.23 |

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Description:

Emetine is a RNA polymerase inhibitor. It inhibits SARS-CoV-2 replication ($EC_{50} = 460$ nM) and in combination with Remdesivir (Cat. No.7226) synergistically inhibits the viral yield of SARS-CoV-2 by 64.9%. Emetine attenuates hCoV-OC43, hCoV-NL43, SARS-CoV, MERS-CoV, and MHV-A59 in vitro with EC_{50} values in the low micromolar range. It also inhibits replication of a broad range of RNA and DNA viruses, including influenza, ebolavirus and HIV-1. Emetine potently inhibits ZIKV replication in vitro ($IC_{50} = 52.9$ nM) and suppresses ZIKV viral load in vivo. Anti-inflammatory, antiviral, antimalarial, antibacterial and antiamebic. Please see product datasheet on www.tocris.com for full description.

Physical and Chemical Properties:

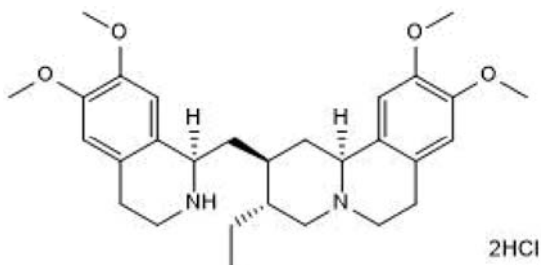
Batch Molecular Formula: $C_{29}H_{40}N_2O_4 \cdot 2HCl \cdot 1\frac{1}{2}H_2O$

Batch Molecular Weight: 580.59

Physical Appearance: White solid

Minimum Purity: $\geq 98\%$

Batch Molecular Structure:



References:

Bleasel et al (2020) Emetine is not Ipecac: considerations for its use as treatment for SARS-CoV2. *Pharmaceuticals (Basel)* **13** 428. PMID: 33261173.

Bleasel et al (2020) Emetine, ipecac, ipecac alkaloids and analogues as potential antiviral agents for coronaviruses. *Pharmaceuticals (Basel)* **13** 51. PMID: 32245264.

Choy (2020) Remdesivir, lopinavir, emetine, and homoharringtonine inhibit SARS-CoV-2 replication *in vitro*. *Antiviral Res.* **178** doi: 10.1016. PMID: 32251767.

Storage: Store at $-20^{\circ}C$

Solubility & Usage Info:

water to 100 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a $45-60^{\circ}C$ water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at $-20^{\circ}C$ or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

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