

# PRODUCT INFORMATION



## Emetine (hydrochloride hydrate)

Item No. 21048

CAS Registry No.: 7083-71-8

Formal 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-isoquinoliny]methyl]-2H-benzo[a]quinolizine, dihydrochloride, hydrate

MF:  $C_{29}H_{40}N_2O_4 \cdot 2HCl [XH_2O]$

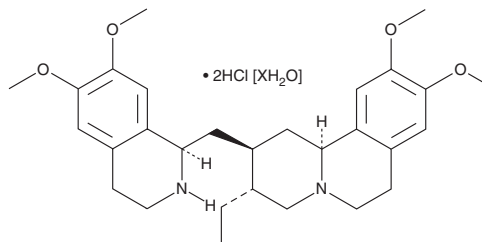
FW: 553.6

Purity:  $\geq 85\%$

Supplied as: A crystalline solid

Storage:  $-20^\circ C$

Stability:  $\geq 4$  years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Emetine (hydrochloride hydrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the emetine (hydrochloride hydrate) in the solvent of choice, which should be purged with an inert gas. Emetine (hydrochloride hydrate) is soluble in the organic solvent chloroform. It is also soluble in water. The solubility of emetine (hydrochloride hydrate) in chloroform and water is approximately 1 and 100 mg/ml, respectively. We do not recommend storing the aqueous solution for more than one day.

### Description

Emetine is an alkaloid that has been found in ipecac root and has diverse biological activities.<sup>1-4</sup> It is active against several strains of *E. histolytica* amoebae ( $IC_{50}s = 0.73-10.22 \mu g/ml$ ).<sup>1</sup> Emetine inhibits NF- $\kappa B$  signaling induced by TNF- $\alpha$  or IL-1 $\beta$  ( $IC_{50}s = 2$  and  $4.2 \mu M$ , respectively, in a cell-based  $\beta$ -lactamase reporter assay), increases caspase-3/7 activity in ME180 cells ( $EC_{50} = 1.1 \mu M$ ), and is cytotoxic to HeLa cells.<sup>2</sup> It reduces the infectious virus yield and viral RNA copy numbers in the culture supernatant of Vero E6 cells infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2;  $EC_{50}s = 0.46$  and  $0.5 \mu M$ , respectively).<sup>4</sup> Emetine (5 mg/kg) induces emesis in ferrets, an effect that can be prevented by the serotonin (5-HT) receptor subtype 5-HT $_3$  antagonist ondansetron.<sup>3</sup>

### References

1. Burchard, G.D. and Mirelman, D. *Entamoeba histolytica*: Virulence potential and sensitivity to metronidazole and emetine of four isolates possessing nonpathogenic zymodemes. *Exp. Parasitol.* **66**(2), 231-242 (1988).
2. Miller, S.C., Huang, R., Sakamuru, S., et al. Identification of known drugs that act as inhibitors of NF- $\kappa B$  signaling and their mechanism of action. *Biochem. Pharmacol.* **79**(9), 1272-1280 (2016).
3. Hasegawa, M., Sasaki, T., Sadakane, K., et al. Studies for the emetic mechanisms of ipecac syrup (TJN-119) and its active components in ferrets: Involvement of 5-hydroxytryptamine receptors. *Jpn. J. Pharmacol.* **89**(2), 113-119 (2002).
4. Choy, K.-T., Wong, A.-Y., Kaewpreedee, P., et al. Remdesivir, lopinavir, emetine, and homoharringtonine inhibit SARS-CoV-2 replication in vitro. *Antiviral Res.* **178**:104786 (2020).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

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