



Product Information

Emetine dihydrochloride hydrate

Product Number **E 2375**

Storage Temperature 2-8 °C

Product Description

Molecular Formula: $C_{29}H_{40}N_2O_4 \cdot 2HCl$

Molecular Weight: 553.6

CAS Number: 316-42-7

Rotation: +11° (1 mg/ml, H₂O, 25 °C)

Emetine inhibits protein synthesis in eukaryotic cells by binding to the 40S ribosomal subunit and inhibiting translocation.^{1,2} The use and effect on protein synthesis has been extensively reported.^{3,4,5,6} When emetine is added to a suspension of HeLa cells or reticulocytes, polyribosomes increase and single ribosomes decrease. Protein synthesis is inhibited irreversibly, possibly by affecting an aspect of translocation that involves movement of mRNA along the ribosome.⁷

Emetine is a major member of the family of ipecac alkaloids.⁸ The biological properties and toxic effects have also been reviewed.⁹

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

Emetine is soluble in water (100 mg/ml).

Storage/Stability

Solutions are stable after autoclaving.¹⁰

References

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2. Jimenez, A., et al., Enzymic and nonenzymic translocation by yeast polysomes. Site of action of a number of inhibitors. *Biochemistry*, **16(21)**, 4727-4730 (1977).
3. Martin, T. F., Paradoxical effects of protein synthesis inhibitors on uridine uptake in cultured cells: possible role of uncharged tRNA in regulating metabolism. *J. Cell Physiol.*, **103(3)**, 489-502 (1980).
4. Chitnis, M. P., and Johnson, R. K., Biochemical parameters of resistance of an adriamycin-resistant subline of P388 leukemia to emetine, an inhibitor of protein synthesis. *J. Natl. Cancer Inst.*, **60(5)**, 1049-1054 (1978).
5. Hwang, K. M., et al., Production of membrane whorls in rat liver by some inhibitors of protein synthesis. *J. Cell Biol.*, **62(1)**, 20-31 (1974).
6. Lietman, P. S., Mitochondrial protein synthesis: inhibition by emetine hydrochloride. *Mol. Pharmacol.*, **7(2)**, 122-128 (1971).
7. Grollman, A. P., and Huang, M. T., in *Protein Synthesis: a Series of Advances*, (1976), pp.148-149.
8. *Antibiotics: Mode of Action*, Vol III, Corcoran, and Hahn, eds., Springer-Verlag (Berlin: 1974), pp. 424-435.
9. The Merck Index, 11th ed., Entry# 3517.
10. Martindale The Extra Pharmacopoeia, 29th ed., Reynolds, J. E. F., ed., The Pharmaceutical Press (London, England: 1989), p. 664.

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