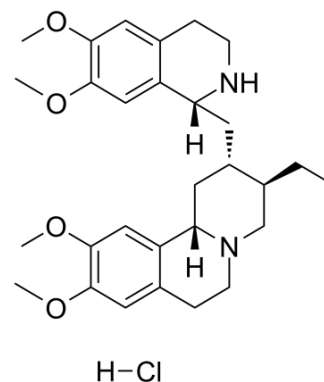


## Emetine hydrochloride

<b>Cat. No.:</b>	HY-B1479C
<b>CAS No.:</b>	14198-59-5
<b>Molecular Formula:</b>	C <sub>29</sub> H <sub>41</sub> ClN <sub>2</sub> O <sub>4</sub>
<b>Molecular Weight:</b>	517.1
<b>Target:</b>	Parasite; DNA/RNA Synthesis; Autophagy; Bacterial; Antibiotic
<b>Pathway:</b>	Anti-infection; Cell Cycle/DNA Damage; Autophagy
<b>Storage:</b>	Please store the product under the recommended conditions in the Certificate of Analysis.



### BIOLOGICAL ACTIVITY

<b>Description</b>	Emetine hydrochloride, derived from the ipecac root, is a potent anti-protozoal and emetic agent. Emetine hydrochloride inhibits viral polymerases and inhibits Zika and Ebola virus infections. Emetine hydrochloride potently inhibits autophagy and has anti-malarial, anti-bacterial and anti-amoebic effect <sup>[1][2][3][4]</sup> .								
<b>In Vitro</b>	<p>Emetine hydrochloride accumulates SQSTM1 and MAP1LC3B in SNB-19 cells, indicating autophagy is blocked<sup>[1]</sup>. Emetine hydrochloride dose-dependently decreases NS1 protein level in HEK293 cells infected with the African prototype, ZIKV MR766 (IC<sub>50</sub>=52.9 nM). Emetine hydrochloride directly inhibits ZIKV NS5 RNA polymerase activity with an IC<sub>50</sub> of 121 nM<sup>[1]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Autophagy Assay<sup>[1]</sup></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Cell Line:</td> <td>SNB-19 cells</td> </tr> <tr> <td>Concentration:</td> <td>25, 50, 100, 200 nM</td> </tr> <tr> <td>Incubation Time:</td> <td>For 24 hours</td> </tr> <tr> <td>Result:</td> <td>Showed the accumulation of SQSTM1 and MAP1LC3B, indicating autophagy was blocked.</td> </tr> </table>	Cell Line:	SNB-19 cells	Concentration:	25, 50, 100, 200 nM	Incubation Time:	For 24 hours	Result:	Showed the accumulation of SQSTM1 and MAP1LC3B, indicating autophagy was blocked.
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Result:	Showed the accumulation of SQSTM1 and MAP1LC3B, indicating autophagy was blocked.								
<b>In Vivo</b>	<p>Emetine hydrochloride (1, 2 mg/kg/day; IP; for 3 days) significantly reduces the serum viral load of ZIKV infected Ifnar1<sup>-/-</sup> mice<sup>[1]</sup>.</p> <p>Emetine hydrochloride (1 mg/kg/day; retro-orbital injection; for six days) reduces the levels of circulating ZIKV approximately 10-fold in three-month-old female SJL mice with ZIKV<sup>BR</sup><sup>[1]</sup>.</p> <p>Emetine (0.002, 0.02, 0.2, 2 mg/kg/day; i.p.) not only attenuates blood glucose levels in dose-dependent way but also induces a persistent attenuation of blood glucose levels in C57Bl/6 male mice (20-25 g)<sup>[2]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Animal Model:</td> <td>Ifnar1<sup>-/-</sup> mice<sup>[1]</sup></td> </tr> <tr> <td>Dosage:</td> <td>1, 2 mg/kg</td> </tr> <tr> <td>Administration:</td> <td>IP; once daily for 3 days</td> </tr> </table>	Animal Model:	Ifnar1 <sup>-/-</sup> mice <sup>[1]</sup>	Dosage:	1, 2 mg/kg	Administration:	IP; once daily for 3 days		
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Result:

Significantly reduced the serum viral load of ZIKV infected *Ifnar1<sup>-/-</sup>* mice.

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## CUSTOMER VALIDATION

- Cell Rep. 2020 Jan 7;30(1):98-111.e5.
- Biomed J. 2020 May 23.

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## REFERENCES

- [1]. Hudson LK, et al. Emetine Di-HCl attenuates Type 1 diabetes mellitus in mice. *Mol Med*. 2016 Jun 10;22
- [2]. Yang S, et al. Emetine inhibits Zika and Ebola virus infections through two molecular mechanisms: inhibiting viral replication and decreasing viral entry. *Cell Discov*. 2018 Jun 5;4:31.
- [3]. 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.
- [4]. Khandelwal N, et al. Emetine inhibits replication of RNA and DNA viruses without generating drug-resistant virus variants. *Antiviral Res*. 2017 Aug;144:196-204.
- [5]. Sands, M, et al. (1977). Antibacterial activity of emetine. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 71(5), 454-455.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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