

# PRODUCT INFORMATION



## Cephaeline

Item No. 20916

**CAS Registry No.:** 483-17-0  
**Formal Name:** (1R)-1-[[[(2S,3R,11bS)-3-ethyl-1,3,4,6,7,11b-hexahydro-9,10-dimethoxy-2H-benzo[a]quinolizin-2-yl]methyl]-1,2,3,4-tetrahydro-7-methoxy-6-isoquinolinol

**Synonym:** (-)-Cephaeline

**MF:** C<sub>28</sub>H<sub>38</sub>N<sub>2</sub>O<sub>4</sub>

**FW:** 466.6

**Purity:** ≥95%

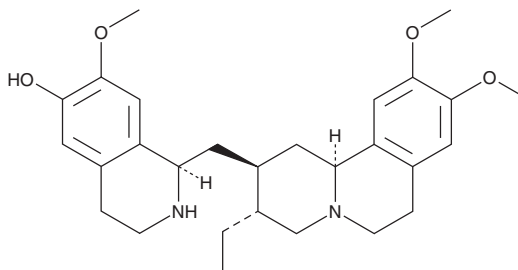
**UV/Vis.:** λ<sub>max</sub>: 286 nm

**Supplied as:** A crystalline solid

**Storage:** -20°C

**Stability:** ≥4 years

**Item Origin:** Plant/*Ipecacuanha*



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

### Laboratory Procedures

Cephaeline is supplied as a crystalline solid. A stock solution may be made by dissolving the cephaeline in the solvent of choice, which should be purged with an inert gas. Cephaeline is slightly soluble in ethanol, methanol, acetonitrile, and chloroform.

### Description

Cephaeline is an alkaloid originally isolated from *C. ipecacuanha* with diverse biological activities.<sup>1-4</sup> It inhibits the cytochrome P450 (CYP) isoforms CYP2D6 and CYP3A4 *in vitro* (K<sub>s</sub> = 54 and 355 μM, respectively).<sup>1</sup> Cephaeline reduces Zika virus (ZIKV) NS1 protein expression in HEK293 cells (IC<sub>50</sub> = 26.4 nM) and reduces viral titer in ZIKV-infected SNB-19 cells (IC<sub>50</sub> = 3.11 nM).<sup>2</sup> *In vivo*, cephaeline (2 mg/kg, i.p.) reduces serum viral load in ZIKV-infected *Ifnar1*<sup>-/-</sup> mice. It induces emesis in ferrets when administered at a dose of 0.5 mg/kg, an effect that is prevented by the serotonin (5-HT) receptor subtype 5-HT<sub>3</sub> antagonist ondansetron.<sup>3</sup> Cephaeline (1 mg/kg) also increases output of respiratory tract fluid in rabbits.<sup>4</sup>

### References

- Asano, T., Kushida, H., Sadakane, C., *et al.* Metabolism of ipecac alkaloids cephaeline and emetine by human hepatic microsomal cytochrome P450s, and their inhibitory effects on P450 enzyme activities. *Biol. Pharm. Bull.* **24**(6), 678-682 (2001).
- Yang, S., Xu, M., Lee, E.M., *et al.* Emetine inhibits Zika and Ebola virus infections through two molecular mechanisms: Inhibiting viral replication and decreasing viral entry. *Cell. Discov.* **4**, 31 (2018).
- 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).
- Boyd, E.M. and Knight, L.M. The expectorant action of cephaeline, emetine and 2-dehydroemetine. *J. Pharm. Pharmacol.* **16**, 118-124 (1964).

#### 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.

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