

## Haemanthamine hydrochloride (466-75-1 free base)

### Chemical Properties

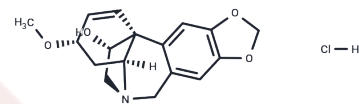
CAS No. :

Formula: C<sub>17</sub>H<sub>20</sub>ClNO<sub>4</sub>

Molecular Weight: 337.8

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



### Biological Description

|               |  |
|---------------|--|
| Description   | Haemanthamine hydrochloride is an alkaloid isolated from the Amaryllidaceae plants with potent anticancer activity. It inhibits protein biosynthesis during the elongation stage of translation. It has antimalarial, pro-apoptotic, antiviral, antioxidant, and anticonvulsant activities.  |
| Targets(IC50) | Others   |
| In vitro      | Haemanthamine (10 μM; 24-72 hours; A2780 cells) treatment leads to a significant inhibition of A2780 cell proliferation. Haemanthamine binds at the A-site cleft of the peptidyl transferase center on the large ribosomal subunit, creating unique molecular interactions with the 25S rRNA. Haemanthamine has a highly specific inhibitory effect on pre-rRNA processing, leading to the activation of a p53-dependent antitumoral surveillance pathway known as nucleolar stress. Haemanthamine (1-100 μM; 24-48 hours; A2780 cells) treatment shows a time- and dose-dependent decrease in cell viability. |
| In vivo       | A pharmacokinetic study of Haemanthamine in rats shows a rapid distribution phase of 30 min, a half-life of 70.4 min, and a major clearance through renal elimination. The high distribution volume of 13.7 L/kg suggests a high intracellular penetration, and its plasmatic concentration remains higher than 1 μM for at least 1 hr after a single 10-mg/kg administration.   |

### Preparing Stock Solutions

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|       | 1mg       | 5mg        | 10mg       |
|-------|-----------|------------|------------|
| 1 mM  | 2.9603 mL | 14.8017 mL | 29.6033 mL |
| 5 mM  | 0.5921 mL | 2.9603 mL  | 5.9207 mL  |
| 10 mM | 0.296 mL  | 1.4802 mL  | 2.9603 mL  |
| 50 mM | 0.0592 mL | 0.296 mL   | 0.5921 mL  |

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Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

Pellegrino S, et al. The Amaryllidaceae Alkaloid Haemanthamine Binds the Eukaryotic Ribosome to Repress Cancer Cell Growth. *Structure*. 2018 Mar 6;26(3):416-425.e4.

Seifrtová M, et al. Haemanthamine alters sodium butyrate-induced histone acetylation, p21WAF1/Cip1 expression, Chk1 and Chk2 activation and leads to increased growth inhibition and death in A2780 ovarian cancer cells.

*Phytomedicine*. 2017 Nov 15;35:1-10.

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