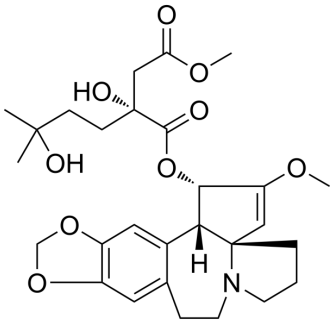
Harringtonine

Cat. No.:	HY-N0862
CAS No.:	26833-85-2
Molecular Formula:	$C_{28}H_{37}NO_9$
Molecular Weight:	531.59
Target:	Influenza Virus
Pathway:	Anti-infection
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 1 year -20°C 6 months



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (188.11 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.8811 mL	9.4057 mL	18.8115 mL
	5 mM	0.3762 mL	1.8811 mL	3.7623 mL
	10 mM	0.1881 mL	0.9406 mL	1.8811 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (4.70 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (4.70 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (4.70 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Harringtonine is a natural Cephalotaxus alkaloid that inhibits protein synthesis. Harringtonine has anti-chikungunya virus (CHIKV) activities with an EC_{50} of 0.24 μM.

In Vitro

Harringtonine inhibits the elongation phase of translation by preventing substrate binding to the acceptor site on the 60-S ribosome subunit and therefore block aminoacyl-tRNA binding and peptide bond formation[1]. Harringtonine displays potent inhibition of Chikungunya virus infection with an EC_{50} of 0.24 μM. Harringtonine could inhibit other alphaviruses[2]. Harringtonine inhibits the growth of human myeloid leukemia cells in vitro at low concentrations. The mechanism of the

antitumor action of harringtonine is considered to be an effect on protein synthesis and is characterized by breakdown of polysomes to monosomes[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [2]

For harringtonine treatment studies with Sindbis virus, BHK21 cells are seeded into 96-well plates and infected with Sindbis virus at an MOI of 1 for 1 h prior to being washed twice with PBS and incubated with various concentrations of harringtonine (0.1 μM, 1 μM, 5 μM, and 10 μM) at 37°C with 5% CO2. Cell supernatants are harvested for plaque assays at 24 h postinfection [2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Nat Immunol. 2024 May 29.
- Nucleic Acids Res. 2019 Apr 8;47(6):e33.
- Cell Death Differ. 2022 Aug 22.
- Proc Natl Acad Sci U S A. 2021 Feb 16;118(7):e2014457118.
- Biomed Pharmacother. 2024 Jun 11:176:116907.

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REFERENCES

[1]. Fresno M, et al. Inhibition of translation in eukaryotic systems by harringtonine. Eur J Biochem. 1977 Jan;72(2):323-30.

[2]. Kaur P, et al. Inhibition of chikungunya virus replication by harringtonine, a novel antiviral that suppresses viral protein expression. Antimicrob Agents Chemother. 2013 Jan;57(1):155-67.

[3]. Piao YF, et al. Growth inhibition of human myeloid leukemia cells in vitro by harringtonine. Gan To Kagaku Ryoho. 1990 Feb;17(2):281-5.

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