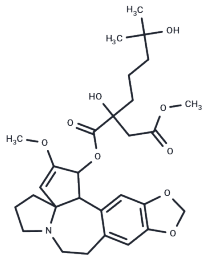
Data Sheet (Cat.No.T3380)

TargetMol

Homoharringtonine

Chemical Properties



CAS No. : 26833-87-4

Formula: C29H39NO9

Molecular Weight: 545.62

Appearance: no data available

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

Biological Description

Description	Homoharringtonine (HHT) is a natural alkaloid that inhibits the translation of proteins and is cytotoxic. Homoharringtonine acts on the ribosomes of tumor cells to inhibit the elongation step of protein translation, thereby inhibiting protein synthesis, and has antitumor activity.
Targets(IC50)	STAT
In vitro	**METHODS**: Human lung cancer cells A549 and NCI-H1975 were treated with Homoharringtonine (1-6 μM) for 24-48 h. Cell viability was measured by MTT assay. **RESULTS**: Homoharringtonine was moderately cytotoxic to A549 with an IC50 of 3.7 μM. H1975 cells were more sensitive to Homoharringtonine with an IC50 of 0.7 μM. [1] **METHODS**: Melanoma cells A375 and B16F10 were treated with Homoharringtonine (100 nM) for 48 h. Cell cycle and apoptosis were detected by Flow cytometry. **RESULTS**: Homoharringtonine induced apoptosis and G2/M cell cycle arrest in A375 and B16F10 cells. [2]
In vivo	**METHODS**: To detect anti-tumor activity in vivo, Homoharringtonine (10 mg/kg) was intraperitoneally injected five times a week for three weeks into nude immunodeficient mice harboring human lung cancer tumor H1975. **RESULTS**: Homoharringtonine effectively inhibited tumor growth, and STAT3 phosphorylation and MCL1 levels were significantly reduced in the Homoharringtonine-treated group. [1] **METHODS**: To investigate the antitumor activity in vivo, Homoharringtonine (0.7 mg/kg) was administered by gavage to NOD/SCID mice bearing ccRCC tumor grafts twice daily for 28 days. **RESULTS**: Two tumor graft lines, XP26 and XP144, showed observable tumor growth inhibition following Homoharringtonine treatment. For XP26 tumors, tumor growth was inhibited by 63.7% in Homoharringtonine-treated mice compared to vector-treated mice, while tumor growth was inhibited by 43.0% in XP144 mice. [3]
Cell Research	Homoharringtonine (HHT) is dissolved in PBS at a stock solution of 2.5?mM and kept at ? 20°C[1]. Human NSCLC cell lines MCF-10A, A549 and H1975 cells are seeded into 96-well plate and precultured for 24?h, then treated with Homoharringtonine for 24?h or 48?h. Cell cytotoxicity is determined by MTT assay. The absorbance is measured at 570?nm by Varioskan Flash Multimode Reader, and the cell death rate is calculated. Cell viability is estimated by trypan blue dye exclusion assay. The cells which exclude the dye are viable. Place 0.5?mL of a suitable cell suspension (dilute cells in complete medium

without serum to 1×106 cells per mL) following adding 0.1?mL of 0.4% trypan blue dye and mixing thoroughly, and then incubate at room temperature for 3?min and load into a hemacytometer to count cells in three separate fields (nonviable, deep blue cells as well as viable, clear cells). The cell viability rate is calculated. After staining with Hoechst 33258 at 10?mg/mL for 10?min, cell death is observed by a fluorescence microscope[1].

Solubility Information

Solubility	5% DMSO+95% Saline: 4.55 mg/mL (8.34 mM),Solution. DMSO: 50 mg/mL (91.64 mM),Sonication is recommended. Chloroform, Dichloromethane, Ethyl Acetate, Acetone, etc.: Soluble, (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.8328 mL	9.1639 mL	18.3278 mL
5 mM	0.3666 mL	1.8328 mL	3.6656 mL
10 mM	0.1833 mL	0.9164 mL	1.8328 mL
50 mM	0.0367 mL	0.1833 mL	0.3666 mL

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.

Reference

Cao W, et al. Homoharringtonine induces apoptosis and inhibits STAT3 via IL-6/JAK1/STAT3 signal pathway in Gefitinib-resistant lung cancer cells. Sci Rep. 2015 Jul 13;5:8477.
Wang F, Xie M, Chen P, et al. Homoharringtonine combined with cladribine and aclarubicin (HCA) in acute myeloid leukemia: A new regimen of conventional drugs and its mechanism. Oxidative Medicine and Cellular Longevity. 2022
Tang JF, et al. Homoharringtonine inhibits melanoma cells proliferation in vitro and vivo by inducing DNA damage, apoptosis, and G2/M cell cycle arrest. Arch Biochem Biophys. 2021 Mar 30;700:108774.
Qiu X, Zhang H, Tang Z, et al.Homoharringtonine promotes heart allograft acceptance by enhancing regulatory T cells induction in a mouse model.Chinese Medical Journal.2023: 10.1097.
Wolff NC, et al. High-throughput simultaneous screen and counterscreen identifies homoharringtonine as synthetic lethal with von Hippel-Lindau loss in renal cell carcinoma. Oncotarget. 2015 Jul 10;6(19):16951-62.
Zou C, Li W, Zhang Y, et al.Identification of an anaplastic subtype of prostate cancer amenable to therapies targeting SP1 or translation elongation.Science Advances.2024, 10(14): eadm7098.