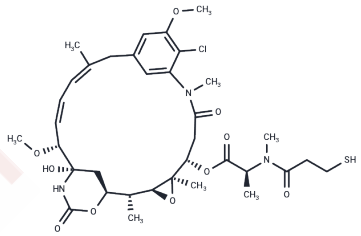
Data Sheet (Cat.No.T1992)

TargetMol

Mertansine

Chemical Properties



CAS No. :	139504-50-0
Formula:	C35H48ClN3O10S
Molecular Weight:	738.29
Storage:	Store at low temperature,The compound is unstable in solution. Please use soon Powder: -20°C for 3 years Actual storage temperature shall be subject to the COA.

Biological Description

Description	Mertansine is a tubulin inhibitor and an antibody-conjugable maytansinoid alkaloid. The IC50 of Mertansine against HCT-15 and A431 cells is 0.750 and 0.04nM.
Targets(IC50)	Microtubule Associated,ADC Cytotoxin
In vitro	**METHODS**: HCT-15 and A431 cells were incubated with Mertansine (0-3 nM) for 72 hours, then the medium was removed from the plate and replaced with fresh medium. Allow the culture to grow and form colonies for 7-10 days after plating. Cultures were fixed, stained with 0.2% crystal violet in 10% formalin/PBS, and colonies were counted. **RESULTS** Mertansine can inhibit the growth of HCT-15 and A431 cells. [1] **METHODS**: 4T1 cells were incubated with Mertansine (5-100 μg/mL) for 4 hours, and cell viability was detected by CCk8. **RESULTS** Mertansine can inhibit the growth of 4T1 cells.[2] **METHODS**: MDA-MB-231 cells were incubated with Mertansine (0.001355-13.55μM) for 48 hours, and cancer cell viability was detected by MTT. **RESULTS** Mertansine can effectively inhibit the proliferation of MDA-MB-231 cells, with an IC50 value of 0.12 μM. [3]
In vivo	**METHODS**: The anti-tumor activity of Mertansine (0.5 mg/kg) was evaluated in mice with orthotopic 4T1 tumors. **RESULTS** Cancer cell apoptosis was significantly increased, and the effect was dose-dependent. [2] **METHODS**: The in vivo therapeutic properties of Mertansine were evaluated using MDA-MB-231 triple-negative breast tumor mice. Mertansine was administered every 3 days for a total of four injections at a dose of 0.8 mg/kg. **RESULTS** Mertansine demonstrated modest inhibition of cancer cell growth in MDA-MB-231 triple-negative mammary tumor mice.[3]

Solubility Information

Solubility	DMSO: 83 mg/mL (112.42 mM),Sonication is recommended. The compound is unstable in solution. Please use soon. H2O: < 0.1 mg/mL (insoluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)

In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 3.3 mg/mL (4.47 mM),Sonication is recommended.The compound is unstable in solution. Please use soon. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.3545 mL	6.7724 mL	13.5448 mL
5 mM	0.2709 mL	1.3545 mL	2.709 mL
10 mM	0.1354 mL	0.6772 mL	1.3545 mL
50 mM	0.0271 mL	0.1354 mL	0.2709 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.

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

Widdison WC, et al. Semisynthetic maytansine analogues for the targeted treatment of cancer. J Med Chem. 2006 Jul 13;49(14):4392-408.

Wang Y Q, Ji M Y, Wang C. Endoplasmic reticulum-targeted glutathione and pH dual responsive vitamin lipid nanovesicles for tocopheryl DM1 delivery and cancer therapy. International Journal of Pharmaceutics. 2020: 119331.

Ran W,et al. Self-assembling mertansine prodrug improves tolerability and efficacy of chemotherapy against metastatic triple-negative breast cancer. J Control Release. 2020 Feb;318:234-245.

Zhong P, et al. αvβ3 integrin-targeted micellar mertansine prodrug effectively inhibits triple-negative breast cancer in vivo. Int J Nanomedicine. 2017 Oct 27;12:7913-7921.