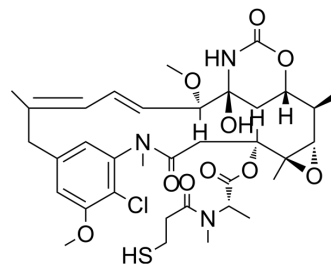


Mertansine

Cat. No.:	HY-19792
CAS No.:	139504-50-0
Molecular Formula:	C ₃₅ H ₄₈ ClN ₃ O ₁₀ S
Molecular Weight:	738.29
Target:	Microtubule/Tubulin; ADC Cytotoxin
Pathway:	Cell Cycle/DNA Damage; Cytoskeleton; Antibody-drug Conjugate/ADC Related
Storage:	Powder -20°C 3 years 4°C 2 years



* The compound is unstable in solutions, freshly prepared is recommended.

SOLVENT & SOLUBILITY

In Vitro	DMSO : 62.5 mg/mL (84.66 mM; Need ultrasonic)					
		Solvent Concentration	Mass			
	Preparing Stock Solutions			1 mg	5 mg	10 mg
		1 mM		1.3545 mL	6.7724 mL	13.5448 mL
		5 mM		0.2709 mL	1.3545 mL	2.7090 mL
	10 mM		0.1354 mL	0.6772 mL	1.3545 mL	
Please refer to the solubility information to select the appropriate solvent.						
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: 2.17 mg/mL (2.94 mM); Suspended solution; Need ultrasonic Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.08 mg/mL (2.82 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.08 mg/mL (2.82 mM); Clear solution 					

BIOLOGICAL ACTIVITY

Description	Mertansine (DM1) is a microtubulin inhibitor and is an antibody-conjugatable maytansinoid that is developed to overcome systemic toxicity associated with maytansine and to enhance tumor-specific delivery. Mertansine can be attached to a monoclonal antibody with a linker to create an antibody-drug conjugate (ADC) ^{[1][2]} .
IC₅₀ & Target	Maytansinoids
In Vitro	Mertansine is a strong antiproliferative chemotherapeutics toward over 60 types of cancer cell lines ^[3] . Mertansine (0-1 μg/mL) shows antitumor activity in malignant B16F10 melanoma cells, and inhibits tumor cell growth by

inhibiting mitosis when combined with DTX^[3].

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

Cell Proliferation Assay

Cell Line:	Malignant B16F10 melanoma cells ^[3]
Concentration:	0, 0.01, 0.1, and 1 µg/mL
Incubation Time:	4 h
Result:	Showed antitumor activity in malignant B16F10 melanoma cells, with an IC ₅₀ of 0.092 µg/mL. Co-delivery of DTX and DM1, both of which inhibit tumor cell growth by inhibiting mitosis, is an effective strategy to achieve a combinatorial anticancer effect.

In Vivo

Mertansine (DM1) has a low maximum-tolerated dose (MTD) of 1 mg/kg^[3]

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

CUSTOMER VALIDATION

- Nature. 2024 Mar 27.
- Sci Transl Med. 2021 Feb 3;13(579):eabb6282.
- Adv Sci (Weinh). 2023 Jan 22;e2206912.
- Biomaterials. 2022: 121913.
- J Exp Clin Cancer Res. 2023 Aug 9;42(1):200.

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REFERENCES

[1]. Zhong P, et al. cRGD-installed docetaxel-loaded mertansine prodrug micelles: redox-triggered ratiometric dual drug release and targeted synergistic treatment of B16F10 melanoma. Nanotechnology. 2017 Jul 21;28(29):295103.

[2]. Manu Lopus et al. Maytansine and Cellular Metabolites of Antibody-Maytansinoid Conjugates Strongly Suppress Microtubule Dynamics by Binding to Microtubules.

[3]. Lopus M. Antibody-DM1 conjugates as cancer therapeutics. Cancer Lett. 2011 Aug 28;307(2):113-8.

Caution: Product has not been fully validated for medical applications. For research use only.

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