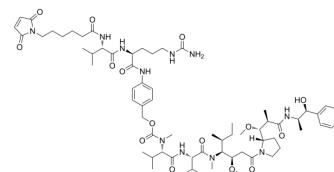


## VcMMAE

<b>Cat. No.:</b>	HY-15575
<b>CAS No.:</b>	646502-53-6
<b>Molecular Formula:</b>	C <sub>68</sub> H <sub>105</sub> N <sub>11</sub> O <sub>15</sub>
<b>Molecular Weight:</b>	1316.63
<b>Target:</b>	Microtubule/Tubulin; Drug-Linker Conjugates for ADC
<b>Pathway:</b>	Cell Cycle/DNA Damage; Cytoskeleton; Antibody-drug Conjugate/ADC Related
<b>Storage:</b>	-20°C, sealed storage, away from moisture and light * The compound is unstable in solutions, freshly prepared is recommended.



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : ≥ 54 mg/mL (41.01 mM)  
 Ethanol : 50 mg/mL (37.98 mM; Need ultrasonic)  
 H<sub>2</sub>O : < 0.1 mg/mL (ultrasonic;warming;heat to 60°C) (insoluble)  
 \* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	0.7595 mL	3.7976 mL	7.5951 mL
	5 mM	0.1519 mL	0.7595 mL	1.5190 mL
	10 mM	0.0760 mL	0.3798 mL	0.7595 mL

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

#### In Vivo

- Add each solvent one by one: 10% EtOH >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 2.5 mg/mL (1.90 mM); Clear solution
- Add each solvent one by one: 10% EtOH >> 90% corn oil  
Solubility: 2.5 mg/mL (1.90 mM); Suspended solution; Need ultrasonic

### BIOLOGICAL ACTIVITY

#### Description

VcMMAE (mc-vc-PAB-MMAE) is a agent-linker conjugate for ADC with potent antitumor activity by using the anti-mitotic agent, monomethyl auristatin E (MMAE, a tubulin inhibitor), linked via the lysosomally cleavable dipeptide, valine-citrulline (vc).

#### IC<sub>50</sub> & Target

Auristatin

#### In Vitro

Monomethyl auristatin E (MMAE) is efficiently released from SGN-35 within CD30<sup>+</sup> cancer cells and, due to its membrane permeability, is able to exert cytotoxic activity on bystander cells<sup>[1]</sup>. MMAE sensitized colorectal and pancreatic cancer cells

to IR in a schedule and dose dependent manner correlating with mitotic arrest. Radiosensitization is evidenced by decreased clonogenic survival and increased DNA double strand breaks in irradiated cells<sup>[2]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

#### In Vivo

Monomethyl auristatin E (MMAE) in combination with IR results in tumor growth delay, tumor-targeted ACPD-cRGD-MMAE with IR produces a more robust and significantly prolonged tumor regression in xenograft models<sup>[2]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## PROTOCOL

#### Cell Assay <sup>[2]</sup>

Monomethyl auristatin E (MMAE, 5 nM) and ionizing radiation (IR) treated cells are harvested and lysed in RIPA buffer with protease and phosphatase inhibitors. 30µg of lysate undergo electrophoresis using 4-12% Bis-Tris gels, transferred to PVDF membranes and incubated with indicated primary antibodies. Blots are developed by ECL.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

#### Animal Administration <sup>[2]</sup>

6-8 week old female athymic nu/nu mice are injected subcutaneously into thighs with 5×10<sup>6</sup> HCT-116 or PANC-1 cells in a 1:1 Matrigel and PBS solution. Mice are treated with IR or intravenous (IV) injection of ACPD-cRGD-MMAE (6 nmoles/day, 18 nmoles total, i.v.), tumor tissue is harvested, formalin fixed and paraffin embedded followed by staining with indicated antibodies. The primary antibody is used at a 1:250 dilution and is visualized using DAB as a chromagen with the UltraMap system.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- Nature. 2024 Apr;628(8007):416-423.
- Clin Cancer Res. 2021 Jun 1;27(11):3224-3233.
- J Biomed Sci. 2021 Oct 11;28(1):69.
- Int J Biol Macromol. 2024 Jan, 254, Part 1, 127657.
- Int J Biol Macromol. 22 July 2022.

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## REFERENCES

- [1]. Okeley, et al. Intracellular Activation of SGN-35, a Potent Anti-CD30 Antibody-Drug Conjugate. Clinical Cancer Research (2010), 16(3), 888-897.
- [2]. Lisa Buckel, et al. Tumor radiosensitization by monomethyl auristatin E: mechanism of action and targeted delivery. Cancer Res. 2015 Apr 1;75(7):1376-87.
- [3]. Jianmin Fang, et al. Anti-her2 antibody and conjugate thereof. US 20160304621 A1.

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

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