MMAF sodium

Cat. No.: HY-15579B

CAS No.: 1799706-65-2

Molecular Formula: $C_{39}H_{64}N_5NaO_8$

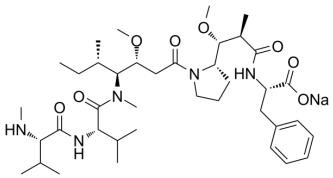
Molecular Weight: 753.94

Target: Microtubule/Tubulin; ADC Cytotoxin

Pathway: Cell Cycle/DNA Damage; Cytoskeleton; Antibody-drug Conjugate/ADC Related

Storage: 4°C, stored under nitrogen

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 200 mg/mL (265.27 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Mass / Solvent / Concentration	1 mg	5 mg	10 mg
1 mM	1.3264 mL	6.6318 mL	13.2637 mL
5 mM	0.2653 mL	1.3264 mL	2.6527 mL
10 mM	0.1326 mL	0.6632 mL	1.3264 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: ≥ 5 mg/mL (6.63 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 5 mg/mL (6.63 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 5 mg/mL (6.63 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

MMAF sodium (Monomethylauristatin F sodium) is a potent tubulin polymerization inhibitor and is used as a antitumor agent. MMAF sodium (Monomethylauristatin F sodium) is widely used as a cytotoxic component of antibody-drug conjugates (ADCs) such as Vorsetuzumab mafodotin and SGN-CD19A[1][2][3].

IC_{50} & Target

Auristatin

In Vitro

MMAF inhibits anaplastic large cell lymphoma Karpas 299, breast carcinoma H3396, renal cell carcinoma 786-O and Caki-1 cells with IC_{50}s of 119, 105, 257 and 200 nM in vitro cytotoxicity assay[4].

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

CUSTOMER VALIDATION

- J Control Release. 2018 May 10;277:48-56.
- Mol Ther Nucleic Acids. 2018 Mar 2;10:227-236.
- Target Oncol. 2019 Oct;14(5):577-590.
- Oncol Rep. 2020 Dec 9.

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REFERENCES

[1]. Doronina SO, et al. Enhanced activity of monomethylauristatin F through monoclonal antibody delivery: effects of linker technology on efficacy and toxicity. Bioconjug Chem. 2006 Jan-Feb;17(1):114-24.

[2]. Lee JW, et al. EphA2 targeted chemotherapy using an antibody drug conjugate in endometrial carcinoma. Clin Cancer Res. 2010 May 1;16(9):2562-70.

[3]. Lee JJ, et al. Enzymatic prenylation and oxime ligation for the synthesis of stable and homogeneous protein-drug conjugates for targeted therapy. Angew Chem Int Ed Engl. 2015 Oct 5;54(41):12020-4.

[4]. Kim EG, et al. Strategies and Advancement in Antibody-Drug Conjugate Optimization for Targeted CancerTherapeutics.

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