# MMAF-$d_8$ hydrochloride

**Cat. No.:** HY-15579AS

**Molecular Formula:** $C_{39}H_{58}D_8ClN_5O_8$

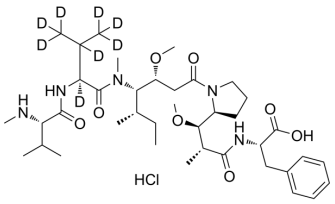
**Molecular Weight:** 776.47

**Target:** ADC Cytotoxin; Microtubule/Tubulin

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

**Storage:** 4°C, sealed storage, away from moisture

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




## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 100 mg/mL (128.79 mM; Need ultrasonic)

| Preparing Stock Solutions | Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 1.2879 mL | 6.4394 mL | 12.8788 mL |
| | 5 mM | 0.2576 mL | 1.2879 mL | 2.5758 mL |
| | 10 mM | 0.1288 mL | 0.6439 mL | 1.2879 mL |

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

## BIOLOGICAL ACTIVITY

**Description**

MMAF-$d_8$ (hydrochloride)e is a deuterated form of MMAF hydrochloride, which is a microtubule disrupting agent.

**$IC_{50}$ & Target**

Auristatin

**In Vitro**

MMAF shows in vitro cytotoxicity against a panel of cell lines. The $IC_{50}$ values for Karpas 299, H3396, 786-O and Caki-1 are 119, 105, 257, and 200 nM, respectively. Targeted MMAF is much more potent than the free drug, and that cAC10 conjugates of MMAF display pronounced activities. On a molar basis, the cAC10-L1-$MMAF_4$ is an average of over 2200-fold more potent than free MMAF and is active on all the CD30-positive cell lines tested[1].

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

**In Vivo**

The maximum tolerated dose in mice of MMAF (>16 mg/kg) is much higher than MMAE (1 mg/kg). cAC10-L1-$MMAF_4$ has an MTD of 50 mg/kg in mice and 15 mg/kg in rats. The corresponding cAC10-L4-$MMAF_4$ ADC was much less toxic, having MTDs in mice and rats of >150 mg/ kg and 90 mg/kg in rats, respectively[1].

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

## PROTOCOL

| | |
|---|---|
| **Cell Assay** [1] | Cells are treated with serial dilutions of test molecules and incubated 4-6 days depending on cell line. Assessment of cellular growth and data reduction to generate $IC_{50}$ values is done using Alamar Blue dye reduction assay[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| **Animal Administration** [1] | Mice: When subcutaneous Karpas 299 tumor size reaches 300 $mm^3$, three animals per group receives one injection of 10 mg antibody component/kg body weight of either cAC10-L1-$MMAF_4$ or cBR96-L1-$MMAF_4$ intravenously. Tumors are then removed and placed in optimal cutting temperature compound, and 5 μm-thin frozen tissue sections are stained using immunohistochemistry evaluation[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## CUSTOMER VALIDATION

- Technische Universität Darmstadt. 05 Aug 2022.

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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.



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