



上海源叶生物科技有限公司
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产品名称: **MMAF (Hydrochloride)**
产品别名: **Monomethylauristatin F Hydrochloride**

生物活性:				
Description	MMAF Hydrochloride (Monomethylauristatin F Hydrochloride) is a potent tubulin polymerization inhibitor and is used as a antitumor agent. MMAF Hydrochloride (Monomethylauristatin F Hydrochloride) 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] .			
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 ^[4] .			
Solvent&Solubility	In Vitro: DMSO : 27 mg/mL (35.14 mM; Need ultrasonic and warming)			
	Preparing Stock Solutions	Solvent Mass Concentration	1 mg	5 mg
		1 mM	1.3014 mL	6.5069 mL
		5 mM	0.2603 mL	1.3014 mL
		10 mM	0.1301 mL	0.6507 mL
	*请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液; 一旦配成溶液, 请分装保存, 避免反复冻融造成的产品失效。 储备液的保存方式和期限: -80℃, 6 months; -20℃, 1 month (sealed storage, away from moisture). -80℃ 储存时, 请在 6 个月内使用, -20℃ 储存时, 请在 1 个月内使用。			
	In Vivo: 请根据您的实验动物和给药方式选择适当的溶解方案。以下溶解方案都请先按照 In Vitro 方式配制澄清的储备液, 再依次添加助溶剂: ——为保证实验结果的可靠性, 澄清的储备液可以根据储存条件, 适当保存; 体内实验的工作液, 建议您现用现配, 当天使用; 以下溶剂前显示的百分比是指该溶剂在您配制终溶液中的体积占比; 如在配制过程中出现沉淀、析出现象, 可以通过加热和/或超声的方式助溶 1.请依序添加每种溶剂: 10% DMSO→40% PEG300 →5% Tween-80 → 45% saline Solubility: ≥ 2.5 mg/mL (3.25 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (3.25 mM, 饱和度未知) 的澄清溶液。 以 1 mL 工作液为例, 取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 400 μL PEG300 中, 混合均匀向上述体系中加入 50 μL Tween-80, 混合均匀; 然后继续加入 450 μL 生理盐水定容至 1 mL。 2.请依序添加每种溶剂: 10% DMSO→ 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (3.25 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (3.25 mM, 饱和度未知) 的澄清溶液。			



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	以 1 mL 工作液为例, 取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 900 μL 20% 的 SBE-β-CD 生理盐水溶液中, 混合均匀。 3. 请依序添加每种溶剂: 10% DMSO $\rightarrow$ 90% corn oil Solubility: $\geq$ 2.5 mg/mL (3.25 mM); Clear solution 此方案可获得 $\geq$ 2.5 mg/mL (3.25 mM, 饱和度未知) 的澄清溶液, 此方案不适用于实验周期在半个月以上的实验。 以 1 mL 工作液为例, 取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 900 μL 玉米油中, 混合均匀。
References	[1]. 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. [2]. 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. [3]. Kim EG, et al. Strategies and Advancement in Antibody-Drug Conjugate Optimization for Targeted Cancer Therapeutics. [4]. 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.
实验参考:	
Cell Assay	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 IC50 values is done using Alamar Blue dye reduction assay[1].
Animal Administration	Mice: When subcutaneous Karpas 299 tumor size reaches 300 mm³, three animals per group receives one injection of 10 mg antibody component/kg body weight of either cAC10-L1-MMAF₄ or cBR96-L1-MMAF₄ 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].
References	[1]. 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. [2]. 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. [3]. Kim EG, et al. Strategies and Advancement in Antibody-Drug Conjugate Optimization for Targeted Cancer Therapeutics. [4]. 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.