产品名称：**Batimastat (BB-94)**
产品别名：**Batimastat**；巴马司他

生物活性：

Description	Batimastat is a potent broad spectrum MMP inhibitor with IC_{50} of 3, 4, 4, 6, and 20 nM for MMP-1, MMP-2, MMP-9, MMP-7 and MMP-3, respectively.
IC_{50} & Target	IC50: 3 nM (MMP-1), 4 nM (MMP-2), 4 nM (MMP-9), 6 nM (MMP-7), 20 nM (MMP-3)[1]
In Vitro	Batimastat (BB-94) is a potent matrix metalloproteinase inhibitor, exhibits an unexpected mode of binding. Batimastat inhibits gelatinases A and B with IC50 values of 4 nM and 10 nM, respectively. The IC50 with the structurally similar collagenase Ht-d is 6 nM, which is comparable with values for MMP-1 (3 nM), MMP-8 (10 nM), and MMP-3 (20 nM)[2]. CD30 shedding from the cell line Karpas299 can effectively be blocked by the hydroxamic acidbased metalloproteinase inhibitor Batimastat (BB-94, IC50=230 nM)[3].
In Vivo	Intraperitoneal administration of Batimastat (BB-94) effectively blocks growth of human ovarian carcinoma xenografts and murine melanoma metastasis and delays the growth of primary tumors in an orthotopic model of human breast cancer without cytotoxicity and without affecting mRNA levels[2]. Batimastat (BB-94) is a synthetic matrix metalloproteinase inhibitor that has shown antineoplastic and antiangiogenic activity in various tumor models. Treatment with Batimastat (60 mg/kg i.p. every other day, for a total of eight injections) concomitantly with Cisplatin (4 mg/kg i.v., every 7 days for a total of three injections) completely prevents growth and spread of both xenografts, and all animals are alive and healthy on day 200[4]. Kaplan-Meier analysis of survival (at 48 h) shows that animals treated with Batimastat (BB-94) have increased survival (95.2%) in comparison with controls (75%), and differences are almost statistically significant (p=0.064)[5]. Matrix density is analyzed in saline- or Batimastat (40 mg/kg)-pretreated animals 4 h after E2 administration, the time point at which collagen density is observed to be at its lowest after hormone treatment[6].
Solvent&Solubility	***In Vitro:*** **DMSO : 50 mg/mL** (**104.68 mM;** Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.0936 mL	10.4681 mL	20.9363 mL
	5 mM	0.4187 mL	2.0936 mL	4.1873 mL
	10 mM	0.2094 mL	1.0468 mL	2.0936 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°C, 6 months; -20°C, 1 month。-80°C 储存时，请在 6 个月内使用，-20°C 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 (5.23 mM); Suspended solution; Need ultrasonic

	此方案可获得 2.5 mg/mL (5.23 mM)的均匀悬浊液，悬浊液可用于口服和腹腔注射。 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% corn oil Solubility: ≥ 2.5 mg/mL (5.23 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (5.23 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]. Yin Z, et al. Increased MMPs expression and decreased contraction in the rat myometrium during pregnancy and in response to prolonged stretch and sex hormones. Am J Physiol Endocrinol Metab. 2012 Jul 1;303(1):E55-70. [2]. Botos I, et al. Batimastat, a potent matrix mealloproteinase inhibitor, exhibits an unexpected mode of binding. Proc Natl Acad Sci U S A. 1996 Apr 2;93(7):2749-54. [3]. Hansen HP, et al. Inhibition of metalloproteinases enhances the internalization of anti-CD30 antibody Ki-3 and the cytotoxic activity of Ki-3 immunotoxin. Int J Cancer. 2002 Mar 10;98(2):210-5. [4]. Giavazzi R, et al. Batimastat, a synthetic inhibitor of matrix metalloproteinases, potentiates the antitumor activity of cisplatin in ovarian carcinoma xenografts. Clin Cancer Res. 1998 Apr;4(4):985-92. [5]. Ricci S, et al. Inhibition of matrix metalloproteinases attenuates brain damage in experimental meningococcal meningitis. BMC Infect Dis. 2014 Dec 31;14:726. [6]. Russo LA, et al. Regulated expression of matrix metalloproteinases, inflammatory mediators, and endometrial matrix remodeling by 17beta-estradiol in the immature rat uterus. Reprod Biol Endocrinol. 2009 Nov 4;7:124.

实验参考：

Animal Administration	Mice[5] Six-weeks-old female BALB/c mice are used. Mice are treated i.p. with Batimastat (BB-94, 50 mg/kg) 1 h before and 24 h post-infection. Batimastat is suspended at 50 mg/mL in DMSO and stored frozen at -20°C. Prior to use, it is diluted 20-fold in phosphate buffered saline (PBS), and 500 μL are injected into animals. Control mice are injected with 500 μL of 5% DMSO in PBS. Animals are sacrificed 48 h after i.c. challenge. Rats[6] Female Sprague-Dawley rats are administered a single physiological dose of E2 (40 μg/kg in a 0.9% NaCl, 0.4% EtOH vehicle) by intraperitoneal (i.p.) injection at the indicated time intervals prior to tissue collection at necropsy. This in vivo dose level of E2 has been shown to induce changes in uterine wet weight, tissue architecture, and gene expression characteristic of estrogen receptor activation. For all other experiments, animals are i.p. administered a single 40 μg/kg bolus of E2 4 h prior to tissue harvest, while control animals receive vehicle only in all studies. Batimastat is administered i.p. at a dose level (40 mg/kg in a 1× PBS, 0.1% Tween-20 vehicle) shown to be effective at inhibiting MMPs in vivo 4 h prior to E2 or saline control.
	[1]. Yin Z, et al. Increased MMPs expression and decreased contraction in the rat myometrium during pregnancy and in response to prolonged stretch and sex hormones. Am J Physiol Endocrinol Metab. 2012 Jul 1;303(1):E55-70.

References	[2]. Botos I, et al. Batimastat, a potent matrix mealloproteinase inhibitor, exhibits an unexpected mode of binding. Proc Natl Acad Sci U S A. 1996 Apr 2;93(7):2749-54. [3]. Hansen HP, et al. Inhibition of metalloproteinases enhances the internalization of anti-CD30 antibody Ki-3 and the cytotoxic activity of Ki-3 immunotoxin. Int J Cancer. 2002 Mar 10;98(2):210-5. [4]. Giavazzi R, et al. Batimastat, a synthetic inhibitor of matrix metalloproteinases, potentiates the antitumor activity of cisplatin in ovarian carcinoma xenografts. Clin Cancer Res. 1998 Apr;4(4):985-92. [5]. Ricci S, et al. Inhibition of matrix metalloproteinases attenuates brain damage in experimental meningococcal meningitis. BMC Infect Dis. 2014 Dec 31;14:726. [6]. Russo LA, et al. Regulated expression of matrix metalloproteinases, inflammatory mediators, and endometrial matrix remodeling by 17beta-estradiol in the immature rat uterus. Reprod Biol Endocrinol. 2009 Nov 4;7:124.