产品名称：SB 3CT
产品别名：SB-3CT

生物活性：

Description	SB-3CT is a potent and competitive matrix metalloproteinase MMP-2 and MMP-9 inhibitor with Ki values of 13.9 and 600 nM, respectively. SB-3CT has high selectivity for gelatinases. SB-3CT shows blood-brain barrier permeability and has neuroprotective effects and anticancer activity[1][2][3].	
IC_{50} & Target [1]	MMP-2	MMP-9
	13.9 nM (Ki)	600 nM (Ki)
In Vitro	SB-3CT has shown efficacy in an animal model of severe traumatic brain injury (TBI). SB-3CT inhibits MMP-9 with an inhibition constant Ki of 400±15 nM[1]. Inhibition of PC3 tumor growth by SB-3CT could also be a direct consequence of reduced extracellular matrix degradation within the bone tissue by the tumor cells themselves and/or by osteoclasts. Indeed, SB-3CT treatment is associated with a reduced osteolytic response, indicating that SB-3CT helps to preserve bone integrity[3].	
In Vivo	SB-3CT (i.p.; 50 mg/kg; every other day; five weeks) inhibits intraosseous growth of human PC3 cells within the marrow of human fetal femur fragments previously implanted in SCID mice[3].	
	Animal Model:	Five-week-old male C.B.-17.SCID mice[3]
	Dosage:	50 mg/kg
	Administration:	IP; every other day; five weeks
	Result:	Inhibited intraosseous growth of human PC3 cells within the marrow of human fetal femur fragments previously implanted in SCID mice.

Solvent&Solubility

In Vitro:

DMSO : ≥ 50 mg/mL (163.19 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.2637 mL	16.3185 mL	32.6371 mL
	5 mM	0.6527 mL	3.2637 mL	6.5274 mL
	10 mM	0.3264 mL	1.6319 mL	3.2637 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 (8.16 mM); Suspended solution; Need ultrasonic

此方案可获得 2.5 mg/mL (8.16 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% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (8.16 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (8.16 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 900 μL 20% 的 SBE-β-CD 生理盐水水溶液中，混合均匀。 3.请依序添加每种溶剂： 10% DMSO →90% corn oil Solubility: ≥ 2.5 mg/mL (8.16 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (8.16 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 M, et al. Water-Soluble MMP-9 Inhibitor Reduces Lesion Volume after Severe Traumatic Brain Injury. ACS Chem Neurosci. 2015 Oct 21;6(10):1658-64. [2]. Stephen Brown, et al. Potent and Selective Mechanism-Based Inhibition of GelatinasesJ. Am. Chem. Soc.2000122286799-6800 [3]. Bonfil RD, et al. Inhibition of human prostate cancer growth, osteolysis and angiogenesis in a bone metastasis model by a novel mechanism-based selective gelatinase inhibitor. Int J Cancer. 2006, 118(11), 2721-2726. [4]. Cui J, et al. Inhibition of MMP-9 by a selective gelatinase inhibitor protects neurovasculature from embolic focal cerebral ischemia. Mol Neurodegener. 2012, 15, 7-21.