产品名称：Sirtinol
产品别名：Sirtinol

生物活性：

Description	Sirtinol is a sirtuin (SIRT) inhibitor, with IC50s of 48 μM, 57.7 μM and 131 μM for ySir2, hSIRT2 and hSIRT2, respectively[1][2][3][4].		
IC_{50} & Target [4]	ySir2	hSIRT2	hSIRT1
	48 μM (IC_{50})	57.7 μM (IC_{50})	131 μM (IC_{50})
In Vitro	Sirtinol reduces the growth of MCF-7 cells in a concentration- and time-dependent manner. The IC_{50} values of sirtinol are 48.6 μM and 43.5 μM after 24 and 48 h of treatment, respectively. Sirtinol significantly decreases SIRT1 expression and increases the acetylated p53 level[1]. Sirtinol attenuates the proliferation and induces apoptosis of nonsmall cell lung cancer (NSCLC) H1299 cells and causes the significantly increased level of FoxO3a, a proapoptotic transcription factor targeted by Sirt1[2].		
In Vivo	Sirtinol has anti-inflammatory effects through direct inhibition of HNE activity and attenuates HNE-induced and LPS-mediated tissue or organ injury[3].		

Solvent&Solubility

In Vitro:

DMSO : 10 mg/mL (25.35 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.5350 mL	12.6752 mL	25.3505 mL
	5 mM	0.5070 mL	2.5350 mL	5.0701 mL
	10 mM	0.2535 mL	1.2675 mL	2.5350 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: ≥ 1 mg/mL (2.54 mM); Clear solution

此方案可获得 ≥ 1 mg/mL (2.54 mM，饱和度未知) 的澄清溶液。

以 1 mL 工作液为例，取 100 μL 10.0 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。

References

[1]. Wang J, et al. Sirtinol, a class III HDAC inhibitor, induces apoptotic and autophagic cell death in MCF-7 human breast cancer cells. Int J Oncol. 2012 Sep;41(3):1101-1109.

[2]. Fong Y, et al. The antiproliferative and apoptotic effects of sirtinol, a sirtuin inhibitor on human lung cancer cells by modulating Akt/β-catenin-Foxo3a axis. ScientificWorldJournal. 2014;2014:937051.

[3]. Mai A, et al. Design, synthesis, and biological evaluation of sirtinol analogues as class III

	histone/protein deacetylase (Sirtuin) inhibitors. J Med Chem. 2005 Dec 1;48(24):7789-95. [4]. Tsai YF, et al. Sirtinol inhibits neutrophil elastase activity and attenuates lipopolysaccharide-mediated acute lung injury in mice. Sci Rep. 2015 Feb 10;5:8347.
实验参考：	
Cell Assay	Sirtinol is dissolved in 100% DMSO at concentration of 10 mM and stored at −20°C until use. The cell proliferation of H1299 cells is determined by trypan blue dye exclusion assay. Human nonsmall cell lung cancer (NSCLC) cells are seeded in 12-well plates and treated with indicated concentrations of sirtinol (0, 10, 20, and 50 μM) for 24 h and 48 h, respectively. After incubation, the cells are stained by 0.2% trypan blue and counted by Countess[2].
Animal Administration	Mice: 30 male mice (20–25 g, 7–8 weeks old) are used in this model. Briefly, mice are randomly divided into five groups; then mice are intraperitoneally injected with 50 μL DMSO (vehicle group) or sirtinol (2.5 or 5.0 mg/kg body weight). After 1 h, paw inflammation is induced . The thickness of the paw is measured before and after HNE or saline injection[3].
References	[1]. Wang J, et al. Sirtinol, a class III HDAC inhibitor, induces apoptotic and autophagic cell death in MCF-7 human breast cancer cells. Int J Oncol. 2012 Sep;41(3):1101-1109. [2]. Fong Y, et al. The antiproliferative and apoptotic effects of sirtinol, a sirtuin inhibitor on human lung cancer cells by modulating Akt/β-catenin-Foxo3a axis. ScientificWorldJournal. 2014;2014:937051. [3]. Mai A, et al. Design, synthesis, and biological evaluation of sirtinol analogues as class III histone/protein deacetylase (Sirtuin) inhibitors. J Med Chem. 2005 Dec 1;48(24):7789-95. [4]. Tsai YF, et al. Sirtinol inhibits neutrophil elastase activity and attenuates lipopolysaccharide-mediated acute lung injury in mice. Sci Rep. 2015 Feb 10;5:8347.