产品名称：Erastin
产品别名：Erastin

生物活性：

Description	Erastin is a ferroptosis inducer. Erastin binds and inhibits voltage-dependent anion channels (VDAC2/VDAC3).
In Vitro	Erastin triggers oxidative, iron-dependent cell death. Treatment of NRAS-mutant HT-1080 fibrosarcoma cells with the RSL molecule erastin (10 μM) results in a time-dependent increase in cytosolic and lipid ROS beginning at 2 hours[1]. Cell death triggered by erastin is significantly inhibited by antioxidants (e.g., α-tocopherol, butylated hydroxytoluene, and β-carotene) and iron chelators, suggesting that ROS- and iron-dependent signaling is required for erastin-induced ferroptosis. Erastin can directly bind to VDAC2/3 in BJeLR cells. Knockdown of VDAC2 and VDAC3, but not VDAC1, leads to erastin resistance. Erastin has the ability to reduce glutathione level by directly inhibiting cystine/glutamate antiporter system Xc− activity, with activation of the ER stress response[2]. Erastin potently inhibits HT-29 cell survival. Erastin shows a dose-dependent effect, and 30 μM of erastin displays the most dramatic effect[3].
In Vivo	Intraperitoneal injection of erastin at well-tolerated doses dramatically inhibits HT-29 xenograft growth in severe combined immunodeficient mice[3].
Solvent&Solubility	***In Vitro:*** **DMSO : 20 mg/mL** (**36.56 mM**; Need ultrasonic) **H_2O : < 0.1 mg/mL** (insoluble)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.8280 mL	9.1401 mL	18.2802 mL
	5 mM	0.3656 mL	1.8280 mL	3.6560 mL
	10 mM	0.1828 mL	0.9140 mL	1.8280 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 mg/mL (3.66 mM); Clear solution

此方案可获得 ≥ 2 mg/mL (3.66 mM，饱和度未知) 的澄清溶液。

以 1 mL 工作液为例，取 100 μL 20.0 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 mg/mL (3.66 mM); Suspended solution; Need ultrasonic

此方案可获得 2 mg/mL (3.66 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 20.0 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 mg/mL (3.66 mM); Clear solution 此方案可获得 ≥ 2 mg/mL (3.66 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 20.0 mg/mL 的澄清 DMSO 储备液加到 900 μL 玉米油中，混合均匀。
References	[1]. Dixon SJ, et al. Ferroptosis: an iron-dependent form of nonapoptotic cell death. Cell. 2012 May 25;149(5):1060-72. [2]. Xie Y, et al. Ferroptosis: process and function. Cell Death Differ. 2016 Mar;23(3):369-79. [3]. Huo H, et al. Erastin Disrupts Mitochondrial Permeability Transition Pore (mPTP) and Induces Apoptotic Death of Colorectal Cancer Cells. PLoS One. 2016 May 12;11(5):e0154605.

实验参考：

Cell Assay	To test erastin's activity on colorectal cancer cell survival, HT-29 cells are treated with increasing concentrations of erastin (0.1–30 μM). MTT assay was performed[3].
Animal Administration	Mice: Mice are treated daily with 10 or 30 mg/kg body weight of erastin (intraperitoneal injection, for 4 weeks) or vehicle control (Saline). Tumor volumes are calculated. Mice body weights are also recorded every week[3].
References	[1]. Dixon SJ, et al. Ferroptosis: an iron-dependent form of nonapoptotic cell death. Cell. 2012 May 25;149(5):1060-72. [2]. Xie Y, et al. Ferroptosis: process and function. Cell Death Differ. 2016 Mar;23(3):369-79. [3]. Huo H, et al. Erastin Disrupts Mitochondrial Permeability Transition Pore (mPTP) and Induces Apoptotic Death of Colorectal Cancer Cells. PLoS One. 2016 May 12;11(5):e0154605.