产品名称：Thiazovivin
产品别名：Thiazovivin

生物活性：

Description	Thiazovivin is a potent **ROCK** inhibitor, which can protect human embryonic stem cells. Thiazovivin improves the efficiency of iPSC generation.
IC_{50} & Target	ROCK
In Vitro	Thiazovivin is a ROCK inhibitor. Thiazovivin (2 μM) inhibits ROCK activity and protects human embryonic stem cells (hESCs). Thiazovivin significantly increases the survival of hESCs after dissociation while maintaining pluripotency. Thiazovivin enhances cell-ECM adhesion-mediated integrin signaling. Thiazovivin also stabilizes E-cadherin after cell dissociation to protect hESCs from death under ECM-free conditions[1]. Thiazovivin increases cellular attachment of embryo-derived stem-like cells (eSLCs) of cattle and formation of primary colonies on the feeder layer. Thiazovivin reinforces putative colony outgrowth and supports the expansion of eSLC cultures during the subculture for passaging. Furthermore, Thiazovivin causes greater expression of ectodermal lineage-specific genes in eSLCs of cattle[2].
Solvent&Solubility	***In Vitro:*** **DMSO : ≥ 30 mg/mL (96.35 mM)** * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.2117 mL	16.0586 mL	32.1172 mL
5 mM	0.6423 mL	3.2117 mL	6.4234 mL
10 mM	0.3212 mL	1.6059 mL	3.2117 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 (8.03 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (8.03 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% corn oil

Solubility: ≥ 2.5 mg/mL (8.03 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (8.03 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]. Xu Y, et al. Revealing a core signaling regulatory mechanism for pluripotent stem cell survival and self-renewal by small molecules. Proc Natl Acad Sci U S A. 2010 May 4;107(18):8129-34. [2]. Park S, et al. Thiazovivin, a Rho kinase inhibitor, improves stemness maintenance of embryo-derived stem-like cells under chemically defined culture conditions in cattle. Anim Reprod Sci. 2015 Oct;161:47-57.

实验参考：

Cell Assay	For cell proliferation assays, embryo-derived stem-like cells (eSLCs) are newly passaged and cultured in 3i system for 48 h on the feeder-free condition to prevent contamination of the BrdU-positive feeder cells. Cells are fixed with 4% paraformaldehyde in PBS (pH 7.4) at 37°C for 2 h, acid-treated with 2 N HCl in PBS for 30 min at 45°C, equilibrated with 0.1 M borate buffer (pH 8.5), and finally incubated with blocking buffer (20% Calf serum; 0.1% Triton X-100; 1% DMSO in PBS) for 2 h. Fixed cells are immunostained with antibodies against anti-BrdU mouse monoclonal antibody IgG followed by incubation with the secondary antibodies FITC conjugated goat anti-mouse IgG. The treated cells are covered with slow-fade anti-fade with DAPI for nuclear staining and covered with a glass coverslip. Images are captured with the fluorescence microscope[2].
References	[1]. Xu Y, et al. Revealing a core signaling regulatory mechanism for pluripotent stem cell survival and self-renewal by small molecules. Proc Natl Acad Sci U S A. 2010 May 4;107(18):8129-34. [2]. Park S, et al. Thiazovivin, a Rho kinase inhibitor, improves stemness maintenance of embryo-derived stem-like cells under chemically defined culture conditions in cattle. Anim Reprod Sci. 2015 Oct;161:47-57.

源叶生物