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产品名称：TA-01
产品别名：TA-01

生物活性：

Description	TA-01 is a potent CK1 and p38 MAPK inhibitor, with IC_{50}s of 6.4 nM, 6.8 nM, 6.7 nM for CK1ε, CK1δ and p38 MAPK, respectively.

IC_{50} & Target	CKIε	CKIδ	p38 MAP kinase
	6.4 nM (IC_{50})	6.8 nM (IC_{50})	6.7 nM (IC_{50})

In Vitro	TA-01 is a potent CK1 and p38 MAPK inhibitor, with IC_{50}s of 6.4 nM, 6.8 nM, 6.7 nM for CK1ε, CK1δ and p38 MAPK, respectively. TA-01 (5 μM) is not cytotoxic, completely inhibits cardiogenesis, but induces cardiogenesis at lower concentration[1].

Solvent&Solubility

In Vitro:

DMSO : 50 mg/mL (142.32 mM; Need ultrasonic)

H_2O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.8464 mL	14.2320 mL	28.4641 mL
	5 mM	0.5693 mL	2.8464 mL	5.6928 mL
	10 mM	0.2846 mL	1.4232 mL	2.8464 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 (7.12 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (7.12 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 (7.12 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (7.12 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]. Laco F, et al. Cardiomyocyte differentiation of pluripotent stem cells with SB203580 analogues correlates with Wnt pathway CK1 inhibition independent of p38 MAPK signaling. J Mol Cell Cardiol. 2015 Mar;80:56-70.
实验参考：	
Cell Assay	HES-3, H7 and IPS are harvested and seeded at 1.1 × 10^6 cells/mL as EBs in ultra-low attachment 12-well plates in bSFS medium: DMEM supplemented with 2 mM l-glutamine, 0.182 mM sodium pyruvate, 1% non-essential amino acids, 0.1 mM β-mercaptoethanol, 5.6 mg/L transferrin, 20 μg/L sodium selenite, 0.25% (w/vol) Bovine Serum Albumin and 0.25% (w/vol) Hysoy. Cells are incubated at 37°C and 5% CO_2 to allow EB formation. The medium is refreshed after 1 day and then every 2-3 days. Cells are stimulated with the respective compounds (TA-01) dissolved in DMSO (1 μL DMSO/mL of media) starting from day 1 or day 4, until day 8. CHIR99021 is applied for the first 24 h only[1].
Kinase Assay	Compounds (TA-01) are dissolved in DMSO and tested at 10 μM concentrations against a panel of 97 kinases, which are related to stem cell differentiation and cell signaling pathways. Kinome profiling is carried out by kinase profiling service[1].
References	[1]. Laco F, et al. Cardiomyocyte differentiation of pluripotent stem cells with SB203580 analogues correlates with Wnt pathway CK1 inhibition independent of p38 MAPK signaling. J Mol Cell Cardiol. 2015 Mar;80:56-70.