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产品名称：YKL-05-099
产品别名：YKL-05-099

生物活性：

Description	YKL-05-099 is a salt-inducible kinase (SIK) inhibitor. YKL-05-099 binds to SIK1 and SIK3 with IC_{50}s of ~10 and ~30 nM, respectively. YKL-05-099 has slightly less potent SIK2-inhibitory (IC_{50}=40 nM)[1].
IC_{50} & Target	IC50: 10 nM (SIK1), 30 nM (SIK3), 40 nM (SIK2)[1]
In Vitro	YKL-05-099 has slightly less potent SIK2-inhibitory (IC_{50}=40 nM) and IL-10-enhancing activities (EC_{50}=460 nM). YKL-05-099 binds to SIK1 and SIK3 with IC_{50}s of 10 and 30 nM, respectively, in a competitive binding assay. Preincubating bone marrow-derived macrophages with YKL-05-099 reduces LPS stimulated phosphorylation of HDAC5 at the SIK-specific phosphorylation site Ser259. YKL-05-099 suppresses production of the inflammatory cytokines TNFα, IL-6 and IL-12p40, and only modestly enhances IL-1β release in BMDCs stimulated with the yeast cell wall extract Zymosan A[1].
In Vivo	YKL-05-099 is non-toxic at concentrations less than 10 μM and stable in mouse liver microsomes for more than 2 hours. YKL-05-099 is highly soluble (PBS solubility=428 μM) and present in an unbound state at appreciable levels in mouse plasma. YKL-05-099 dose dependently decreases phosphorylation of HDAC5 at the SIK-regulated site Ser259; reduced phosphorylation is observed at the lowest dose (5 mg/Kg) and is below the limit of detection by immunoblotting beginning at the 20 mg/Kg dose. YKL-05-099 dose-dependently reduces abundance of TNFα in serum beginning at 5 mg/Kg, and increases IL-10 levels at the 20 mg/Kg dose by more than 2-fold[1].
Solvent&Solubility	***In Vitro:*** **DMSO : ≥ 75 mg/mL (124.98 mM)** **H_2O : < 0.1 mg/mL** (insoluble) * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.6664 mL	8.3318 mL	16.6636 mL
5 mM	0.3333 mL	1.6664 mL	3.3327 mL
10 mM	0.1666 mL	0.8332 mL	1.6664 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 (4.17 mM); Clear solution

	此方案可获得 ≥ 2.5 mg/mL (4.17 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% (20% SBE-β-CD in saline) Solubility: 2.5 mg/mL (4.17 mM); Suspended solution; Need ultrasonic 此方案可获得 2.5 mg/mL (4.17 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 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 (4.17 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (4.17 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]. Sundberg TB, et al. Development of Chemical Probes for Investigation of Salt-Inducible Kinase Function in Vivo. ACS Chem Biol. 2016 Aug 19;11(8):2105-11.

实验参考：

Animal Administration	Mice: YKL-05-099 is diluted in 5% N-methyl-2-pyrrolidinone, 5% Solutol HS15 and 90% normal saline and administered IP to male 8–10 week-old C57BL/6 mice. Serum and tissue samples are collected after euthanizing mice by CO2 inhalation overdose followed by cervical dislocation[1].
References	[1]. Sundberg TB, et al. Development of Chemical Probes for Investigation of Salt-Inducible Kinase Function in Vivo. ACS Chem Biol. 2016 Aug 19;11(8):2105-11.