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产品名称：IRAK-1-4 抑制剂 I
产品别名：IRAK-1-4 Inhibitor I； IRAK-1/4 Inhibitor I

生物活性：

Description	IRAK-1-4 Inhibitor I is an inhibitor of interleukin-1 receptor-associated kinase 1/4 (IRAK 1/4) with IC_{50}s of 0.2 μM and 0.3 μM, respectively.
IC_{50} & Target	IC50: 0.2 μM (IRAK-4), 0.3 μM (IRAK-1)[1]
In Vitro	IRAK-1-4 Inhibitor I has IC_{50} greater than the highest concentration tested (10 μM) against a panel of 27 other kinases, including the most closely homologous (outside of the IRAK family) Lck and $pp60^{SRC}$. Additionally, IRAK-1-4 Inhibitor I does not show any signs of cytotoxicity in a 72 h proliferation assay in HeLa cells (ED_{50}>30 μM). Significant inhibition of IRAK-1 is observed with IRAK-1-4 Inhibitor I (IRAK-1 IC_{50}=0.3 μM)[1]. IRAK-1/4 inhibitor eliminates the LPS-induced increases in Bcl10, NF-κB, and IL-8. IRAK-1/4 mediates LPS-induced IL-8 activation and functions upstream of Bcl10. The LPS-induced increase in Bcl10 declines by 73% (from 5.18±0.22 to 2.36±0.08 ng/mL), and the IL-8 response decline by 60% (from 2.64±0.31 to 1.14±0.08 ng/mL)[2].
Solvent&Solubility	***In Vitro:*** **DMSO： 14.29 mg/mL (36.14 mM;** Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.5290 mL	12.6451 mL	25.2902 mL
	5 mM	0.5058 mL	2.5290 mL	5.0580 mL
	10 mM	0.2529 mL	1.2645 mL	2.5290 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: 1.43 mg/mL (3.62 mM); Suspended solution; Need ultrasonic

此方案可获得 1.43 mg/mL (3.62 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 14.299999 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]. Powers JP, et al. Discovery and initial SAR of inhibitors of interleukin-1 receptor-associated kinase-4. Bioorg Med Chem Lett. 2006 Jun 1;16(11):2842-2845. [2]. Bhattacharyya S, et al. Bcl10 mediates LPS-induced activation of NF-kappaB and IL-8 in human

	intestinal epithelial cells. Am J Physiol Gastrointest Liver Physiol. 2007 Aug;293(2):G429-37.
实验参考：	
Cell Assay	NCM460 cells, grown in 24-well plates, are incubated with 50 μM IRAK-1/4 inhibitor for 2 h. After 2 h, the media are changed, and new media with or without LPS (10 ng/mL) added. Treatment is terminated at 6 h, and spent media and cells are collected for IL-8 and other assays[2].
References	[1]. Powers JP, et al. Discovery and initial SAR of inhibitors of interleukin-1 receptor-associated kinase-4. Bioorg Med Chem Lett. 2006 Jun 1;16(11):2842-2845. [2]. Bhattacharyya S, et al. Bcl10 mediates LPS-induced activation of NF-kappaB and IL-8 in human intestinal epithelial cells. Am J Physiol Gastrointest Liver Physiol. 2007 Aug;293(2):G429-37.