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产品名称：1-(2,3-二氯苯基)-N-[[2-[(吡啶-2-基)氧基]苯基]甲基]-1H-四唑-5-胺
产品别名：A 839977

生物活性：

Description	A 839977 is a P2X7 selective antagonist; it blocks BzATP-evoked calcium influx at recombinant human, rat and mouse P2X7 receptors (IC50 values are 20 nM, 42 nM and 150 nM respectively) and reduces inflammatory and neuropathic pain in animal models; the antihyperalgesic effects of P2X7 receptor blockade are mediated by blocking the release of IL-1beta[1].
IC_{50} & Target	IC50: of 20 nM (human P2X7 receptor), 42 nM (rat P2X7 receptor), 150 nM (mouse P2X7 receptor)[1]
In Vitro	A 839977 selectively blocks BzATP-evoked calcium influx at mammalian P2X7 receptors, (IC50=20-150 nM), which blocks agonist-evoked YO-PRO uptake and IL-1beta release from differentiated human THP-1 cells, it has been shown to reduce inflammatory and neuropathic pain in animal models[1]. A 839977 (50 nM, pre-treatment 1 hour) significantly prevents pressure-induced rise of IL-1β priming in optic nerve astrocytes[2].

RT-PCR[2]	
Cell Line:	Optic nerve astrocyte cells
Concentration:	50 nM
Incubation Time:	1 hour(pre-treatment)
Result:	Prevented the IL-1β priming in astrocyte cells

In Vivo	A 839977 (30 μmol/kg, 100 μmol/kg, 300 μmol/kg; pre-injected 30mins) dose-dependently reduces thermal hyperalgesia produced by intraplantar administration of complete Freund's adjuvant (CFA) in rats[1]. A 839977 (10 μmol/kg, 30 μmol/kg, 100 μmol/kg; pre-injected 30mins) produces robust antihyperalgesia in the CFA model of inflammatory pain in wild-type mice, but it has no effect on IL-1alphabeta knockout mice[1]. A 839977 attenuates dorsal horn neuronal responses in cancer bearing animals[3].
Animal Model:	Male Sprague-Dawley, BALB/c mice and IL-$1^{(-/-)}$ mice for CFA-induced chronic inflammatory
Dosage:	30 μmol/kg, 100 μmol/kg, 300 μmol/kg (rat); 10 μmol/kg, 30 μmol/kg, 100 μmol/kg (mice)
Administration:	Injection; pre-injected 30mins
Result:	Attenuated CFA-induced thermal hyperalgesia in a dose-related manner in rat and mice, but has no effect on IL-$1^{(-/-)}$ mice.

In Vitro:

DMSO : ≥ 100 mg/mL (241.98 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	2.4198 mL	12.0989 mL	24.1978 mL
5 mM	0.4840 mL	2.4198 mL	4.8396 mL
10 mM	0.2420 mL	1.2099 mL	2.4198 mL

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Solvent&Solubility	*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 (6.05 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (6.05 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 (6.05 mM); Suspended solution; Need ultrasonic 此方案可获得 2.5 mg/mL (6.05 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 (6.05 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (6.05 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]. Honore P, et al. The antihyperalgesic activity of a selective P2X7 receptor antagonist, A-839977, is lost in IL-1alphabeta knockout mice. Behav Brain Res. 2009 Dec 1;204(1):77-81. [2]. Albalawi F et.al, The P2X7 Receptor Primes IL-1β and the NLRP3 Inflammasome in Astrocytes Exposed to Mechanical Strain. Front Cell Neurosci. 2017 Aug 8;11:227 [3]. Falk S et al.P2X7 receptor-mediated analgesia in cancer-induced bone pain. Neuroscience. 2015 Apr 16; 291:93-105.