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产品名称：AC260584
产品别名：AC260584

生物活性：

Description	AC260584 is an M1 muscarinic receptor allosteric agonist with a pEC_{50} of 7.6.
IC_{50} & Target	pEC50: 7.6 (M1)[1]
In Vitro	AC260584 is found to be a potent (pEC50=7.6-7.7) and efficacious (90-98% of carbachol) muscarinic M1 receptor agonist. AC260584 shows functional selectivity for the M1 receptor over the M2, M3, M4 and M5 muscarinic receptor subtypes. Its selectivity is found to be similar in native tissues expressing mAChRs to its profile in recombinant systems[1].
In Vivo	In rodents, AC260584 activates extracellular signal regulated kinase 1 and 2 (ERK1/2) phosphorylation in the hippocampus, prefrontal cortex and perirhinal cortex. The ERK1/2 activation is dependent upon muscarinic M1 receptor activation since it is not observed in M1 knockout mice. AC260584 also improves the cognitive performance of mice in the novel object recognition assay and its action is blocked by the muscarinic receptor antagonist pirenzepine. In addition, AC260584 is found to be orally bioavailable in rodents[1]. AC260584 at 3 and 10 mg/kg significantly increases dopamine release in the medial prefrontal cortex and hippocampus. However, only the high dose of AC260584, 10 mg/kg (s.c.), significantly increases acetylcholine release in these regions[2].
Solvent&Solubility	***In Vitro:*** **DMSO : ≥ 50 mg/mL (143.49 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	2.8699 mL	14.3493 mL	28.6985 mL
5 mM	0.5740 mL	2.8699 mL	5.7397 mL
10 mM	0.2870 mL	1.4349 mL	2.8699 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 (7.17 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (7.17 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% corn oil Solubility: ≥ 2.5 mg/mL (7.17 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (7.17 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]. Bradley SR, et al. AC260584, an orally bioavailable M(1) muscarinic receptor allosteric agonist, improves cognitive performance in an animal model. Neuropharmacology. 2010 Feb;58(2):365-73. [2]. Li Z, et al. AC260584 (4-[3-(4-butylpiperidin-1-yl)-propyl]-7-fluoro-4H-benzo[1,4]oxazin-3-one), a selective muscarinic M1 receptor agonist, increases acetylcholine and dopamine release in rat medial prefrontal cortex and hippocampus. Eur J Pharmacol. 2007 Oct 31;572(2-3):129-37.

实验参考：

Animal Administration	Rats: AC260584 is formulated in 100% 50 mM sodium acetate buffer pH 4.5 at a concentration of 1 mg/mL. Dosing solution is at room temperature prior to dosing. Three rats are administered AC260584 (2 mg/kg) intravenously and three rats are administered the drug orally (10 mg/kg). Rats dosed intravenously are catheterized at the jugular and femoral vein, while those dosed orally are catheterized only at the femoral vein. Rats are housed individually, fasted overnight and dosed by individual body weight. Plasma samples are collected at several time points and analyzed by LC/MS/MS[1].
References	[1]. Bradley SR, et al. AC260584, an orally bioavailable M(1) muscarinic receptor allosteric agonist, improves cognitive performance in an animal model. Neuropharmacology. 2010 Feb;58(2):365-73. [2]. Li Z, et al. AC260584 (4-[3-(4-butylpiperidin-1-yl)-propyl]-7-fluoro-4H-benzo[1,4]oxazin-3-one), a selective muscarinic M1 receptor agonist, increases acetylcholine and dopamine release in rat medial prefrontal cortex and hippocampus. Eur J Pharmacol. 2007 Oct 31;572(2-3):129-37.