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产品名称：Mirogabalin
产品别名：DS5565

生物活性：

Description	Mirogabalin (DS-5565) is a novel, preferentially selective α2δ-1 ligand characterized by high potency and selectivity to the α2δ-1 subunit of voltage-sensitive calcium channel complexes in the CNS.
IC_{50} & Target	α 2δ-1 Calcium Channel[1]
In Vitro	Mirogabalin (DS-5565) is a novel, preferentially selective α2δ-1 ligand characterized by high potency and selectivity to the α2δ-1 subunit of voltage-sensitive calcium-channel complexes in the central nervous system (CNS). In vitro experiments using membrane preparations from human and rat α2δ subunit-expressed cells show that Mirogabalin had a slower dissociation rate from α2δ-1 than α2δ-2, in particular, α2δ-1 compared with Pregabalin. Additionally, Mirogabalin shows potent, sustained analgesic effects in streptozotocin-induced diabetic rats with induces pain, and the superior analgesic effects and wider CNS safety margin relative to Pregabalin are attributed to its selectivity for and slow dissociation from α2δ-1 compared with Pregabalin[1]. Mirogabalin (DS-5565) is an α2δ-1 ligand being developed for pain associated with diabetic peripheral neuropathy, fibromyalgia, and postherpetic neuralgia. Mirogabalin targets α2δ-1, an auxiliary protein associated with voltage-sensitive calcium channel complexes in the central nervous system. This binding reduces calcium influx at nerve terminals, therefore reducing the release of several pain neurotransmitters. The ED50 (on the transformed scale) for Mirogabalin is estimated to be 20.5 mg with a 90% confidence interval (CI) of 10.1-41.7 mg[2].
In Vivo	Additionally, Mirogabalin shows potent, sustained analgesic effects in streptozotocin-induced diabetic rats with induced pain, and the superior analgesic effects and wider central nervous system (CNS) safety margin relative to Pregabalin are attributed to its selectivity for and slow dissociation from α2δ-1 compared with Pregabalin[1].
Solvent&Solubility	***In Vitro:*** **Methanol : 16 mg/mL** (**76.45 mM;** Need ultrasonic) **H_2O : 7.71 mg/mL** (**36.84 mM;** Need ultrasonic) **DMSO : < 1 mg/mL** (insoluble or slightly soluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	4.7783 mL	23.8914 mL	47.7829 mL
5 mM	0.9557 mL	4.7783 mL	9.5566 mL
10 mM	0.4778 mL	2.3891 mL	4.7783 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: ≥ 0.83 mg/mL (3.97 mM); Clear solution 此方案可获得 ≥ 0.83 mg/mL (3.97 mM，饱和度未知) 的澄清溶液。 以 1 mL 工作液为例，取 100 μL 8.3 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: ≥ 0.83 mg/mL (3.97 mM); Clear solution 此方案可获得 ≥ 0.83 mg/mL (3.97 mM，饱和度未知) 的澄清溶液。 以 1 mL 工作液为例，取 100 μL 8.3 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: ≥ 0.83 mg/mL (3.97 mM); Clear solution 此方案可获得 ≥ 0.83 mg/mL (3.97 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 8.3 mg/mL 的澄清 DMSO 储备液加到 900 μL 玉米油中，混合均匀。
References	[1]. Vinik A, et al. Efficacy and safety of Mirogabalin (DS-5565) for the treatment of diabetic peripheral neuropathic pain: a randomized, double-blind, placebo- and active comparator-controlled, adaptive proof-of-concept phase 2 study. Diabetes Care. 2014 Dec [2]. Hutmacher MM, et al. Exposure-response modeling of average daily pain score, and dizziness and somnolence, forMirogabalin (DS-5565) in patients with diabetic peripheral neuropathic pain. J Clin Pharmacol. 2016 Jan;56(1):67-77.