上海源叶生物科技有限公司
Shanghai yuanye Bio-Technology Co., Ltd
电话：021-61312973　　传真：021-55068248
网址：www.shyuanye.com
邮箱：shyysw@sina.com

产品名称：RS102895 (hydrochloride)
产品别名：RS102895 hydrochloride

生物活性：

Description

RS102895 hydrochloride is a potent CCR2 antagonist, with an IC_{50} of 360 nM, and shows no effect on CCR1.

IC_{50} & Target

CCR2	CCR1	Human α_{1a} receptor	Human α_{1d} receptor	5HT-1a receptor
360 nM (IC_{50})	17800 nM (IC_{50})	130 nM (IC_{50})	320 nM (IC_{50})	470 nM (IC_{50})

In Vitro

RS102895 hydrochloride is a potent CCR2 antagonist, with an IC50 of 360 nM, and shows no effect on CCR1. RS102895 also inhibits human α1a and α1d receptors, rat brain cortex 5HT1a receptor in cells with IC50s of 130, 320, 470 nM, respectively. RS102895 suppresses wild type and D284N mutant MCP-1 receptor (IC50, 550 nM and 568 nM, respectively), less potently inhibits D284A MCP-1 receptor (IC50, 1892 nM), and has no effects on E291A, E291Q, D284A/E291A or D284N/E291Q (IC50, >100,000 nM)[1]. RS102895 ameliorates the increased extracellular matrix (ECM) protein expression by inhibition of CCR2 at 10 μM, and obviously blocks fibronectin and type IV collagen protein expression in high glucose (HG)-stimulated mesangial cells (MCs) at 1 or 10 μM. RS102895 (10 μM) also abrogates the increased TGF-1 levels in MCs treated with MCP-1[2].

In Vivo

RS102895 (3 g/L) causes progressive decrease in pain threshold in rats with bone cancer pain (BCP) at day 3-9 after surgery via intrathecal injection, but the pain threshold increases after 12 days. RS102895 also potently reverses the pattern of NR2B, nNOS, and SIGIRR expression in spinal cord[3].

Solvent&Solubility

In Vitro:

DMSO : ≥ 28 mg/mL (65.60 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	2.3427 mL	11.7134 mL	23.4269 mL
5 mM	0.4685 mL	2.3427 mL	4.6854 mL
10 mM	0.2343 mL	1.1713 mL	2.3427 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 (5.86 mM); Clear solution

	此方案可获得 ≥ 2.5 mg/mL (5.86 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 (5.86 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (5.86 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 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 (5.86 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (5.86 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]. Mirzadegan T, et al. Identification of the binding site for a novel class of CCR2b chemokine receptor antagonists: binding to a common chemokine receptor motif within the helical bundle. J Biol Chem. 2000 Aug 18;275(33):25562-71. [2]. Park J, et al. MCP-1/CCR2 system is involved in high glucose-induced fibronectin and type IV collagen expression in cultured mesangial cells. Am J Physiol Renal Physiol. 2008 Sep;295(3):F749-57. [3]. Ren F, et al. Analgesic Effect of Intrathecal Administration of Chemokine Receptor CCR2 Antagonist is Related to Change in Spinal NR2B, nNOS, and SIGIRR Expression in Rat with Bone Cancer Pain. Cell Biochem Biophys. 2015 Jun;72(2):611-6.

实验参考：

Cell Assay	Transfected mesangial cells (MCs) are serum restricted for 24 h, after which the medium is replaced by serum-free DMEM containing normal glucose (NG; 5.6 mM), NG+Mannitol (NG+M; 24.4 mM), or high glucose (HG; 30 mM). In addition, nontransfected MCs are cultured under NG, NG+M, or HG with or without RS102895 or anti-TGF-1 antibody (25 μg/mL). Nontransfected MCs are also exposed to medium containing recombinant human MCP-1 (10 ng/mL) or recombinant human TGF-1 (2 ng/mL). At 24 h after the media change, cells are harvested and the conditioned culture media are collected[2].
Animal Administration	Rats[3] CCR2 antagonist RS102895 is dissolved in DMSO. Rats receive daily intrathecal injection of either RS102895 (3 g/L) 10 μL or 10 % DMSO 10 μL between 9 and 20 days after operation. All rats are randomLy divided into five groups (n = 10 per group): Sham group, Sham + RS102895 group, BCP group, BCP + RS102895 group, and BCP + DMSO group. Rats are sacrificed 20 days after operation and the tissue samples from the L4-L5 spinal cord segments are rapidly removed and immediately frozen in liquid nitrogen and stored at −80°C until use for RT-PCR and Western blot[3].
	[1]. Mirzadegan T, et al. Identification of the binding site for a novel class of CCR2b chemokine receptor antagonists: binding to a common chemokine receptor motif within the helical bundle. J Biol

References	Chem. 2000 Aug 18;275(33):25562-71. [2]. Park J, et al. MCP-1/CCR2 system is involved in high glucose-induced fibronectin and type IV collagen expression in cultured mesangial cells. Am J Physiol Renal Physiol. 2008 Sep;295(3):F749-57. [3]. Ren F, et al. Analgesic Effect of Intrathecal Administration of Chemokine Receptor CCR2 Antagonist is Related to Change in Spinal NR2B, nNOS, and SIGIRR Expression in Rat with Bone Cancer Pain. Cell Biochem Biophys. 2015 Jun;72(2):611-6.