

产品名称: StemRegenin 1
产品别名: StemRegenin 1; SR1

生物活性:				
Description	StemRegenin 1 is a potent aryl hydrocarbon receptor (AhR) antagonist with IC ₅₀ of 127 nM.			
IC ₅₀ & Target	IC50: 127 nM (AhR)[1]			
In Vitro	StemRegenin 1 (SR1) acts by antagonizing the aryl hydrocarbon receptor (AhR). StemRegenin 1 increases the number of CD34+ cells after 5 to 7 days with an EC50 of ~120 nM. StemRegenin 1 inhibits photoaffinity ligand (PAL) binding (IC50=40 nM) These results support the conclusion that StemRegenin 1 -induced CD34+ cell expansion is mediated through direct binding and inhibition of the AhR[1]. An aryl hydrocarbon receptor antagonist, StemRegenin 1 (SR1), robustly promotes ex vivo expansion of human CD34+ cells. StemRegenin 1 treatment accelerates the proliferation of CD34+ cells and decreases the expression levels of VentX[2].			
Solvent&Solubility	In Vitro: DMSO : ≥ 100 mg/mL (232.81 mM) H₂O : < 0.1 mg/mL (insoluble) * "≥" means soluble, but saturation unknown.			
	Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg
		1 mM	2.3281 mL	11.6404 mL
		5 mM	0.4656 mL	2.3281 mL
		10 mM	0.2328 mL	1.1640 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 (5.82 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (5.82 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 (5.82 mM); Suspended solution; Need ultrasonic 此方案可获得 2.5 mg/mL (5.82 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 生理盐水中, 混合均匀。			

	<p>3.请依序添加每种溶剂： 10% DMSO →90% corn oil</p> <p>Solubility: ≥ 2.5 mg/mL (5.82 mM); Clear solution</p> <p>此方案可获得 ≥ 2.5 mg/mL (5.82 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。</p> <p>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。</p>
References	<p>[1]. Boitano AE, et al. Aryl Hydrocarbon Receptor Antagonists Promote the Expansion of Human Hematopoietic Stem Cells. <i>Science</i>. 2010 Sep 10;329(5997):1345-8.</p> <p>[2]. Gao H, et al. Suppression of homeobox transcription factor VentX promotes expansion of human hematopoietic stem/multipotent progenitor cells. <i>J Biol Chem</i>. 2012 Aug 24;287(35):29979-87.</p>
实验参考：	
Cell Assay	<p>A quantity of 250,000 CB-derived CD34+ cells are cultured with control conditions (DMSO, 0.01%) or StemRegenin 1 (0.75 μM) for 3 weeks. At this point control cultures had expanded 1080-fold and StemRegenin 1 treated cells expanded 2024-fold relative to starting cell numbers. A quantity of 30 to 30,000 uncultured CD34+ CB-derived cells or a fraction of the final culture equivalent to 30 to 10,000 starting cells are transplanted. The cells are injected intravenously via the retro-orbital route into sub-lethally irradiated (300 rads, 200 rads) 6- to 10-week-old NSG mice. Engraftment is performed within 24 h after irradiation. Engraftment is monitored by flow cytometric analysis of blood obtained via retro-orbital sinus or bone marrow using anti-human CD45 and anti-mouse CD45 antibodies. The mice are sacrificed between 13-16 weeks posttransplantation; bone marrow (from both femurs and tibiae), spleen and thymus are collected for analysis. For secondary engraftment, 50% of the bone marrow from each recipient mouse is transplanted into one secondary sub-lethally irradiated NSG mouse. Fifteen weeks after transplantation, bone marrow is harvested from the secondary mice and analyzed by flow cytometry[1].</p>
References	<p>[1]. Boitano AE, et al. Aryl Hydrocarbon Receptor Antagonists Promote the Expansion of Human Hematopoietic Stem Cells. <i>Science</i>. 2010 Sep 10;329(5997):1345-8.</p> <p>[2]. Gao H, et al. Suppression of homeobox transcription factor VentX promotes expansion of human hematopoietic stem/multipotent progenitor cells. <i>J Biol Chem</i>. 2012 Aug 24;287(35):29979-87.</p>