产品名称：Troglitazone
产品别名：曲格列酮 ；CS-045

生物活性：

Description	Troglitazone is a PPARγ agonist, with EC_{50}s of 550 nM and 780 nM for human and murine PPARγ receptor, respectively.
IC_{50} & Target	PPARγ
	550 nM (EC_{50}, Human PPARγ)
In Vitro	Troglitazone is a PPARγ agonist, with EC_{50} of 550 nM and 780 nM for human and murine PPARγ receptor, respectively[1]. Troglitazone (2-200 μM) is cytotoxic to the pancreatic cancer cell lines (MIA Paca2 and PANC-1 cells), with IC_{50}s of 49.9 ± 1.2 and 51.3 ± 5.3 μM, respectively. Troglitazone (50 μM) increases chromatin condensation in MIA Paca2 and PANC-1 cells, enhances the activity of caspase-3 and decreases Bcl-2 expression[2]. Troglitazone (0, 1, 2, and 4 μM) sensitizes TRAIL-mediated apoptosis in human lung adenocarcinoma cells. Troglitazone enhancement of TRAIL-induced apoptosis is blocked by inhibition of autophagy, via activation of autophagy flux. In addition, the effects of troglitazone are induced by PPARγ activation in A549 cells[3].
In Vivo	Troglitazone (200 mg/kg, p.o.) shows inhibitory effects on the growth of tumor in the MIA Paca2 xenograft model[2].
Solvent&Solubility	***In Vitro:*** **DMSO： ≥ 100 mg/mL (226.48 mM)** * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.2648 mL	11.3240 mL	22.6480 mL
5 mM	0.4530 mL	2.2648 mL	4.5296 mL
10 mM	0.2265 mL	1.1324 mL	2.2648 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 (5.66 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (5.66 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 (5.66 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (5.66 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 (5.66 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (5.66 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]. Willson TM, et al. The PPARs: from orphan receptors to drug discovery. J Med Chem. 2000 Feb 24;43(4):527-50. [2]. Fujita M, et al. In vitro and in vivo cytotoxicity of troglitazone in pancreatic cancer. J Exp Clin Cancer Res. 2017 Jul 3;36(1):91. [3]. Nazim UM, et al. PPARγ activation by troglitazone enhances human lung cancer cells to TRAIL-induced apoptosis via autophagy flux. Oncotarget. 2017 Apr 18;8(16):26819-26831.

实验参考：

Cell Assay	Briefly, cells are seeded into 96-well plates at a density of 1 × 10^5 cells/well and incubated for 24 h. The cells are treated with Troglitazone in the presence or absence of other chemicals for a further 24 h using FBS-free medium. The assay utilizes the conversion of alamar blue reagent to fluorescent resorufin by metabolically active cells. The resorufin signal is measured at an excitation wavelength of 530 nm and an emission wavelength of 580 nm. The 50% growth inhibitory concentrations (IC_{50}) are calculated according to the sigmoid inhibitory effect model $E = IC_{50}γ/(IC_{50}\ γ + Cγ)$, where E represents the surviving fraction (% of control), C represents the drug concentration in the medium, and γ represents the Hill coefficient. For co-exposure studies, the Troglitazone dosage is set to approximately the IC_{50} value for each cell line［2］
Animal Administration	Balb/c male mice (4 weeks old) are subcutaneously inoculated in the back with MIA Paca2 cells (5 × 10^6 cells/100 μL in PBS) 14 days prior to starting Troglitazone administration. Mice are then orally administered 200 mg/kg Troglitazone in 0.5% methylcellulose solution or vehicle daily for 5 weeks. Tumor size is measured bi-dimensionally and the volume is calculated using the formula (length × $width^2$) × 0.5. Body weights of mice are also monitored throughout the experiment[2]
References	1]. Willson TM, et al. The PPARs: from orphan receptors to drug discovery. J Med Chem. 2000 Feb 24;43(4):527-50. [2]. Fujita M, et al. In vitro and in vivo cytotoxicity of troglitazone in pancreatic cancer. J Exp Clin Cancer Res. 2017 Jul 3;36(1):91. [3]. Nazim UM, et al. PPARγ activation by troglitazone enhances human lung cancer cells to TRAIL-induced apoptosis via autophagy flux. Oncotarget. 2017 Apr 18;8(16):26819-26831.