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产品名称：SC 66
产品别名：SC 66

生物活性：

Description	SC66 is an Akt inhibitor, reduces cell viability in a dose- and time-dependent manner, inhibits colony formation and induces apoptosis in hepatocellular carcinoma (HCC) cells.
IC_{50} & Target	Akt
In Vitro	SC66 inhibits cell viability and colony forming capacity of HCC cells with IC50s of 0.77，0.47，0.92，0.75 and 2.85 μg/mL at 72 hours for HepG2, Hep3B, PLC/PRF/5，HA22T/VGH and Huh7 cells. HepG2, HA22T/VGH and PLC/PRF/5 cells have similar IC50s of approximately 0.85 and 0.75 μg/mL at 48 and 72 hours, respectively. To determine whether the decrease in cell viability is related to apoptosis induction, TUNEL assays are performed in Hep3B and Huh7 cells treated with 1, 2 and 4 μg/mL of SC66 for 24 hours. In Hep3B cells the number of TUNEL-positive cells increased with increasing concentrations of SC66, whereas in Huh7 cells very few light brown-colored cells are observed only after treatment with 4 μg/mL SC66[1].
In Vivo	To demonstrate the effectiveness in vivo of SC66 on HCC, a mouse xenograft tumor model of Hep3B cells is used. When tumors became palpable, at a size of about 150 mm^3, mice are randomized into three groups of 6 animals each. The treated group receive SC66 at 15 and 25 mg/kg twice a week via i.p. injection, while the untreated group receive the vehicle alone. Treatment with 25 mg/Kg SC66 significantly reduces tumor volume to 37% on day 17 when compared with tumors of the untreated group[1].
Solvent&Solubility	***In Vitro:*** **DMSO : 25 mg/mL (90.47 mM;** Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.6189 mL	18.0943 mL	36.1886 mL
	5 mM	0.7238 mL	3.6189 mL	7.2377 mL
	10 mM	0.3619 mL	1.8094 mL	3.6189 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 (9.05 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (9.05 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 (9.05 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (9.05 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 (9.05 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (9.05 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]. Cusimano A, et al. Cytotoxic activity of the novel small molecule AKT inhibitor SC66 in hepatocellular carcinoma cells. Oncotarget. 2015 Jan 30;6(3):1707-22.

实验参考：

Cell Assay	Cells (5 ×10^3/well) are distributed into each well of 96-well microtiter plates and then incubated overnight. At time 0, the medium is replaced with fresh complete medium and different doses of SC66 are added. Cells are cultured for 24, 48 and 72 hours. At the end of treatment, MTS assays are performed using the CellTiter Aqueous OneSolution kit. Cell viability is expressed as a percentage of the absorbance measured in the control cells. Values are expressed as means±SD of three separate experiments, each performed in triplicate[1].
Animal Administration	Mice[1] Male nude athymic mice (Fox1 nu/nu) aged 4 weeks are used. Suspensions of 1×10^7 Hep3B cells in 0.2 mL of PBS are inoculated into the right flank of the animal. When tumors became palpable (around 150 mm^3), the mice are randomly divided into three groups of 6 animals each, with the various tumor volumes equally distributed among the three groups. Two groups of mice are treated twice a week with 15 and 25 mg/kg SC66 suspended in DMSO, further diluted in a solution of 25% ethanol and administered via i.p. injection. The control group receive the vehicle alone. Tumor volumes are determined twice a week using calipers. Primary tumor volumes are calculated.
References	[1]. Cusimano A, et al. Cytotoxic activity of the novel small molecule AKT inhibitor SC66 in hepatocellular carcinoma cells. Oncotarget. 2015 Jan 30;6(3):1707-22.