

产品名称: **HS-173**

产品别名: **HS-173**

生物活性:				
Description	HS-173 is a novel PI3K inhibitor, that is used for cancer treatment.			
IC ₅₀ & Target	PI3K α			
	0.8 nM (IC ₅₀)			
In Vitro	HS-173 (0.1-10 μ M) reduces the cell viability in a dose- and time-dependent manner. HS-173 shows a significant drug response by the inhibition of colony formation in pancreatic cancer cells dose-dependently. HS-173 inhibits TGF- β -induced cell migration and invasion in pancreatic cancer cells. HS-173 suppresses TGF- β -induced epithelial mesenchymal transition (EMT)[1]. HS-173 treatment reduces cell viability in two hepatic stellate cell lines in a dose and time dependent manner. HS-173 induces cell cycle arrest in the G2/M phase. HS-173 treatment increases the expression of cleaved caspase-3 and decreased that of Bcl-2 in the HSC-T6 cells. HS-173 inhibits the expression of profibrotic mediators and ECM degradation modulators in HSCs[2]. The combination of Sorafenib and HS-173 synergistically inhibits cell proliferation in pancreatic cancer cell lines. The combination of Sorafenib and HS-173 inhibits key enzymes in both RAF/MAPK and PI3K/AKT signaling pathways[3].			
In Vivo	HS-173 (10 mg/kg, i.p.) significantly increases expression of TUNEL, cleaves caspase-3 along with decreased expression of PCNA in tumor tissues. HS-173 treatment decreases p-AKT and p-Smad2 in tumor tissues. HS-173 (10 and 30 mg/kg) significantly decreases the metastatic burdens on the lung and liver[1]. HS-173 (10 and 20 mg/kg) inhibits ECM accumulation and PI3K/Akt signaling in mice with CCl ₄ -induced liver fibrosis animal model. HS-173 clearly suppresses the expression of p-Akt and p-P70S6K along with decreasing expression of collagen I and vimentin in the mice with CCl ₄ -induced liver fibrosis[2].			
Solvent&Solubility	In Vitro: DMSO : 50 mg/mL (118.35 mM; Need ultrasonic) H₂O : < 0.1 mg/mL (insoluble)			
		Solvent Mass Concentration	1 mg	5 mg
	Preparing	1 mM	2.3671 mL	11.8354 mL
	Stock Solutions	5 mM	0.4734 mL	2.3671 mL
		10 mM	0.2367 mL	1.1835 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℃, 6 months; -20℃, 1 month。-80℃ 储存时，请在 6 个月内使用，-20℃ 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 (5.92 mM); Suspended solution; Need ultrasonic			

	<p>此方案可获得 2.5 mg/mL (5.92 mM)的均匀悬浊液，悬浊液可用于口服和腹腔注射。</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 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。</p> <p>2.请依序添加每种溶剂： 10% DMSO→ 90% (20% SBE-β-CD in saline)</p> <p>Solubility: 2.5 mg/mL (5.92 mM); Suspended solution; Need ultrasonic</p> <p>此方案可获得 2.5 mg/mL (5.92 mM)的均匀悬浊液，悬浊液可用于口服和腹腔注射。</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 20% 的 SBE-β-CD 生理盐水溶液中，混合均匀。</p>
References	<p>[1]. Rumman M, et al. HS-173, a novel PI3K inhibitor suppresses EMT and metastasis in pancreatic cancer. <i>Oncotarget</i>. 2016 Oct 25</p> <p>[2]. Son MK, et al. HS-173, a novel PI3K inhibitor, attenuates the activation of hepatic stellate cells in liver fibrosis. <i>Sci Rep</i>. 2013 Dec 11;3:3470</p> <p>[3]. Yun SM, et al. Synergistic anticancer activity of HS-173, a novel PI3K inhibitor in combination with Sorafenib against pancreatic cancer cells. <i>Cancer Lett</i>. 2013 May 1;331(2):250-61</p> <p>[4]. Kim O, et al. Design and synthesis of imidazopyridine analogues as inhibitors of phosphoinositide 3-kinase signaling and angiogenesis. <i>J Med Chem</i>. 2011 Apr 14;54(7):2455-66.</p>
实验参考：	
Cell Assay	<p>Cell viability is performed using an MTT assay. In brief, cells are seeded at a density of 5000-7000 cells/well in a 96-well plates following to 24 h incubation. On the following day the media are removed and the cells are treated with either vehicle as a negative control or various concentrations of HS-173 (0.5-10 μM) following an incubation for 24, 48, or 72 h. After incubation of respective time 10% of an MTT solution (2 mg/mL) is added to each well and the cells are incubated for another 4 h at 37°C. The formazan crystals that formed are dissolved in DMSO (100 or 300 μL/well) with constant shaking for 5 min. The absorbance of the plate is then read with a microplate reader at 540 nm. Three replicate wells are evaluated for each analysis. [1]</p>
Animal Administration	<p>Male BALB/c mice (4 week old, weighing 18-20 g) are fed with standard rat chow and tap water ad libitum, and are maintained with a 12 h dark/light cycle at 21°C. After one week of adaptation period, Panc-1 cells (5×10^6 cells/mice) are inoculated in the right flank of the mouse. After reaching an average tumor volume of 50 mm³, mice are randomly divided into two groups with five mice in each group; the control group is treated with vehicle and the experimental group is treated with HS-173 (10 mg/kg) intraperitoneally thrice a week for 26 days. The body weight and tumor size are measured thrice a week. At the end of the experiment, mice are sacrificed and primary tumor is harvested. Tumors are weighed, photographed, and divided into two parts for Western blot and IHC analysis. For IHC analysis, tissues are immediately fixed in 4% PFA for overnight and for Western blotting analysis, tissues are snap-frozen in liquid nitrogen. [1]</p>
References	<p>[1]. Rumman M, et al. HS-173, a novel PI3K inhibitor suppresses EMT and metastasis in pancreatic cancer. <i>Oncotarget</i>. 2016 Oct 25</p> <p>[2]. Son MK, et al. HS-173, a novel PI3K inhibitor, attenuates the activation of hepatic stellate cells in liver fibrosis. <i>Sci Rep</i>. 2013 Dec 11;3:3470</p> <p>[3]. Yun SM, et al. Synergistic anticancer activity of HS-173, a novel PI3K inhibitor in combination with Sorafenib against pancreatic cancer cells. <i>Cancer Lett</i>. 2013 May 1;331(2):250-61</p>

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源叶生物