产品名称：扑蛲灵
产品别名：Pyrvinium pamoate

生物活性：

Description	Pyrvinium pamoate is an FDA-approved antihelmintic drug that inhibits WNT pathway signaling.
In Vitro	Pyrvinium pamoate (0-500 nM) inhibits proliferation of MCF-7 (luminal), MDA-MB-231 (claudin-low), MDA-MB-468 (basal-like) and SkBr3 (HER2-OE) cells in a dose-dependent manner, with IC50 value of 1170±105.0 nM against MDA-MB-231 cell line. Pyrvinium pamoate significantly inhibits self-renewal and proliferation of BCSCs, and suppresses BCSC population with a distinct phenotype. Pyrvinium pamoate significantly decreases average expression levels of FZD1, FZD10, WNT1, WNT7B, CTNNB1, MYC, and LRP5 at transcriptional level. Moreover, Pyrvinium pamoate also efficiently down-regulates the expression of other stemness genes including ALDH1, CD44 and ABCG2[1]. Pyrvinium pamoate blocks colon cancer cell growth in vitro in a dose-dependent manner with great differences in the inhibitory concentration (IC50), ranging from 0.6 to 65 μM for colon cancer cells with mutations in WNT signaling. Pyrvinium pamoate decreases messenger RNA (mRNA) and protein levels of known WNT target genes as c-MYC and thereby led to the induction of p21[2]. Pyrvinium pamoate ultimately inhibits Wnt signalling despite its lack of efficacy on CK1[3]. Pyrvinium pamoate imposes specific toxicity on cardiac fibroblasts in ischemia (IC50=9.5 nM). The cytotoxic effect of Pyrvinium pamoate on cardiac fibroblasts specifically under glucose- and glutamine-deficient condition[4].
In Vivo	In the xenograft model, Pyrvinium pamoate (500 nM)-pretreatment strongly delays tumor size and tumor weight, and the tumor volume is markedly decreased[1].
Solvent&Solubility	***In Vitro:*** **DMSO : 16.67 mg/mL** (**28.96 mM;** Need ultrasonic) **H_2O : < 0.1 mg/mL** (insoluble)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.7370 mL	8.6851 mL	17.3702 mL
	5 mM	0.3474 mL	1.7370 mL	3.4740 mL
	10 mM	0.1737 mL	0.8685 mL	1.7370 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；该产品在溶液状态不稳定，建议您现用现配，即刻使用。

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→ 90% (20% SBE-β-CD in saline)

Solubility: 2.08 mg/mL (3.61 mM); Suspended solution; Need ultrasonic

此方案可获得 2.08 mg/mL (3.61 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 20.8 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。

References	[1]. Xu L, et al. WNT pathway inhibitor pyrvinium pamoate inhibits the self-renewal and metastasis of breast cancer stem cells. Int J Oncol. 2016 Mar;48(3):1175-86. [2]. Wiegering A, et al. The impact of pyrvinium pamoate on colon cancer cell viability. Int J Colorectal Dis. 2014 Oct;29(10):1189-98. [3]. Venerando A, et al. Pyrvinium pamoate does not activate protein kinase CK1, but promotes Akt/PKB down-regulation and GSK3 activation. Biochem J. 2013 May 15;452(1):131-7. [4]. Murakoshi M, et al. An anthelmintic drug, pyrvinium pamoate, thwarts fibrosis and ameliorates myocardial contractile dysfunction in a mouse model of myocardial infarction. PLoS One. 2013 Nov 4;8(11):e79374.

实验参考：

Cell Assay	Pyrvinium pamoate is dissolved in DMSO at a concentration of 1 μM and is stocked in aliquots at -20°C. Cells (1×10^4) are suspended in 200 μL culture medium and then seeded into 96-well plates in quintuplicate overnight. Cells are treated with indicated concentrations of Pyrvinium pamoate (0-8,000 μM). After incubating for 3 days, CCK8 (10 μL) is added into each well and incubated at 37°C for 1 h. The absorbance is measured using a microplate reader at 450 nm[1].
Animal Administration	Mice: NOD/SCID mice are housed under aseptic conditions in individually ventilated cages. For xenografting, 5×10^6 Pyrvinium pamoate-pretreated or untreated breast cancer cells (MDA-MB-231) are resuspended in a 1:1 mixture of culture medium and Matrigel and then transplanted into the fourth pair of mammary fat pads of mice (4-6-week-old). After injection, tumor size is measured by calipers each day and tumor growth is plotted. Upon reaching the endpoint, mice are sacrificed and tumors are harvested. All the tumors are formalin-fixed, and paraffin-embedded for hematoxylin and eosin and immunohistochemical staining[1].
References	[1]. Xu L, et al. WNT pathway inhibitor pyrvinium pamoate inhibits the self-renewal and metastasis of breast cancer stem cells. Int J Oncol. 2016 Mar;48(3):1175-86. [2]. Wiegering A, et al. The impact of pyrvinium pamoate on colon cancer cell viability. Int J Colorectal Dis. 2014 Oct;29(10):1189-98. [3]. Venerando A, et al. Pyrvinium pamoate does not activate protein kinase CK1, but promotes Akt/PKB down-regulation and GSK3 activation. Biochem J. 2013 May 15;452(1):131-7. [4]. Murakoshi M, et al. An anthelmintic drug, pyrvinium pamoate, thwarts fibrosis and ameliorates myocardial contractile dysfunction in a mouse model of myocardial infarction. PLoS One. 2013 Nov 4;8(11):e79374.