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产品名称：盐酸氯吡胺
产品别名：Chloropyramine hydrochloride

生物活性：

Description	Chloropyramine hydrochloride is a histamine receptor H1 antagonist which can also inhibit the biochemical function of VEGFR-3 and FAK.
IC_{50} & Target	VEGFR-3
In Vitro	BT474 cells are highly sensitive to Chloropyramine hydrochloride (compound 1) treatment, whereby 1 μM concentrations cause a 40% reduction of viability after 48 h of treatment. It is found that at 1 μM concentrations of Chloropyramine hydrochloride, viability of control MCF7-pcDNA3 cells is significantly higher than the viability of MCF7-VEGFR-3 cells ($P<0.01$) and at 10 μM concentration this difference reaches twofold ($P<0.001$). In the BT474 cells treatment with Chloropyramine hydrochloride also leads to a concentration-dependent decrease of cell proliferation. When treatment with Chloropyramine hydrochloride is continued for 48 h, the breast cancer cells that overexpressed VEGFR-3 undergo apoptosis. This effect is dose-dependent, with 10 μM Chloropyramine hydrochloride inducing apoptosis in more than 60% of BT474 cells. In our model cell lines MCF7-pcDNA3 and MCF7-VEGFR-3, treatment with 10 μM Chloropyramine hydrochloride for 48 h leads to a 4-fold increase in apoptotic cell death in the cell line that overexpressed VEGFR-3 (18% versus 76 % respectively)[1].
In Vivo	Chloropyramine hydrochloride causes a dramatic reduction of tumor growth in both model systems whereby the tumor size in the treated groups is approximately 20% of the tumor size in vehicle control groups. Doxorubicin administered at 3 mg/kg causes approximately 60% reduction of tumor growth, but has no effect on tumor growth at 0, 3 mg/kg. In contrast, there is a modest effect of Chloropyramine hydrochloride alone (50% reduction of tumor growth). The low-dose combination of Chloropyramine hydrochloride and doxorubicin has a prolonged anti-tumor effect (85% reduction of tumor growth) that is greater than either drug alone[1].
Solvent&Solubility	***In Vitro:*** **DMSO : 30 mg/mL (91.95 mM;** Need ultrasonic and warming)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.0650 mL	15.3252 mL	30.6504 mL
5 mM	0.6130 mL	3.0650 mL	6.1301 mL
10 mM	0.3065 mL	1.5325 mL	3.0650 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: ≥ 3.33 mg/mL (10.21 mM); Clear solution 此方案可获得 ≥ 3.33 mg/mL (10.21 mM，饱和度未知) 的澄清溶液。 以 1 mL 工作液为例，取 100 μL 33.3 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: ≥ 3.33 mg/mL (10.21 mM); Clear solution 此方案可获得 ≥ 3.33 mg/mL (10.21 mM，饱和度未知) 的澄清溶液。 以 1 mL 工作液为例，取 100 μL 33.3 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: ≥ 3.33 mg/mL (10.21 mM); Clear solution 此方案可获得 ≥ 3.33 mg/mL (10.21 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 33.3 mg/mL 的澄清 DMSO 储备液加到 900 μL 玉米油中，混合均匀。
References	[1]. Kurenova EV, et al. Small molecule chloropyramine hydrochloride (C4) targets the binding site of focal adhesion kinase and vascular endothelial growth factor receptor 3 and suppresses breast cancer growth in vivo. J Med Chem. 2009 Aug 13;52(15):4716-24.

实验参考：

Cell Assay	Cell survival is assayed in MTS assay by measuring mitochondrial dehydrogenase activity of metabolically active cells. 5.0×10^3 (100 μL) cells are plated in 96-well plates and are allowed to attach overnight. One hundred microliters of fresh media with or without Chloropyramine hydrochloride is added to each well. Cells are treated for designated amount of time. MTS assay is performed according the manufacturers protocol[1].
Animal Administration	BT474 and MCF7-VEGFR-3 cells at a concentration of 2 to 5×10^6 cells per 200 μL are subcutaneously injected into the right flank of the 5 to 6 week old mice, 5 in each group. Treatment with Chloropyramine hydrochloride is started next day after cells injection via intraperitoneal injection (IP) once a day. Tumor size is measured thrice weekly and volume is calculated using the formula length×$width^2$×0.5. Animals are sacrificed after 21 days of treatment or when tumor size reaches protocol end point. Tumor is excised, measured and preserved for protein and RNA preparation and cytochemistry[1].
Kinase Assay	Cells are incubated in presence or absence of Chloropyramine hydrochloride and stained with anti-FAK antibody 4.47 or in combination with paxillin or VEGFR-3. Detection is done with Alexa Fluor 546 secondary antibody and for dual staining combination of Alexa Fluor 488 and Alexa Fluor 546 secondary antibody is used[1].
References	[1]. Kurenova EV, et al. Small molecule chloropyramine hydrochloride (C4) targets the binding site of focal adhesion kinase and vascular endothelial growth factor receptor 3 and suppresses breast cancer growth in vivo. J Med Chem. 2009 Aug 13;52(15):4716-24.