产品名称：**N-[6-(4-氯苯氧基)己基]-N'-氰基-N''-4-吡啶基胍**
产品别名：**CHS-828**

生物活性：

Description	CHS-828 (GMX1778) is a competitive inhibitor of nicotinamide phosphoribosyltransferase (NAMPT), with an IC50 less than 25 nM. CHS-828 (GMX1778) exerts a cytotoxic effect by decreasing the cellular level of NAD+ and exhibits a potent anticancer activity[1].
IC_{50} & Target	IC50: < 25 nM (NAMPT)[1].
In Vitro	The phosphoribosyltransferase activity of recombinant NAMPT was sensitive to inhibition by CHS-828 (GMX1778) (IC50 < 25 nM) whereas the adenyltransferase activity of recombinant NMNAT1 was not. The Kd of recombinant NAMPT for GMX1778 labeled with a fluorescent tag (CHS-828 (GMX1778)-Alexa Fluor) was 120 nM. Overexpression of wild-type NAMPT was able to maintain a certain level of NAD+ under conditions of challenge with 3 nM GMX1778, but this effect was lost when cells were exposed to 300 nM CHS-828 (GMX1778)[1]. CHS-828 (GMX1778) increases intracellular ROS in cancer cells by elevating the superoxide level while decreasing the intracellular NAD(+) level. Notably, CHS-828 (GMX1778) treatment does not induce ROS in normal cells. CHS-828 (GMX1778)-induced ROS can be diminished by adding nicotinic acid (NA) in a NA phosphoribosyltransferase 1 (NAPRT1)-dependent manner[2].
In Vivo	A 4-h iv infusion of NA (120 mg/kg of body weight) did not adversely affect the antitumor activity of a 24-h iv infusion of CHS-828 (GMX1778) at a dose of 150 mg/kg or 650 mg/kg in the NAPRT1-deficient xenograft experiments. CHS-828 (GMX1778) at 650 mg/kg is above the maximum tolerated dose. The administration of NA as a 4-h iv infusion immediately following treatment with 750 mg/kg CHS-828 (GMX1778) reduced the mortality associated with toxic doses of GMX1777[2].
Solvent&Solubility	***In Vitro:*** **DMSO： ≥ 39 mg/mL (104.88 mM)** * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.6892 mL	13.4459 mL	26.8918 mL
	5 mM	0.5378 mL	2.6892 mL	5.3784 mL
	10 mM	0.2689 mL	1.3446 mL	2.6892 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 →90% corn oil

Solubility: ≥ 2.5 mg/mL (6.72 mM); Clear solution

	此方案可获得 ≥ 2.5 mg/mL (6.72 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]. Watson M, et al. The small molecule GMX1778 is a potent inhibitor of NAD+ biosynthesis: strategy for enhanced therapy in nicotinic acid phosphoribosyltransferase 1-deficient tumors. Mol Cell Biol. 2009 Nov;29(21):5872-88. [2]. Cerna D, et al. Inhibition of nicotinamide phosphoribosyltransferase (NAMPT) activity by small molecule GMX1778 regulates reactive oxygen species (ROS)-mediated cytotoxicity in a p53- and nicotinic acid phosphoribosyltransferase1 (NAPRT1)-dependent manner. J Biol Chem. 2012 Jun 22;287(26):22408-17.