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产品名称：ML240
产品别名：ML240

生物活性：

Description	ML240 is a potent p97 inhibitor, inhibiting p97 ATPase with IC50 value of 100 nM.
IC_{50} & Target	IC50: 100 nM (p97)[1]
In Vitro	ML240 is a potent p97 inhibitor, with an IC_{50} of 100 nM. ML240 is active in the UbG76V-GFP stabilization assay (IC_{50}, 0.9 μM). ML240 inhibits p97 competitively with respect to ATP with a K_i values of 0.22 μM. ML240 also inhibits labeling of only three protein kinase domains by >50% when tested at 20 μM: PIP5 K3 (belongs to phosphoinositide-3 kinase family), JAK1 JH2 (N-terminal pseudokinase domain of JAK1), and DNAPK (DNA-dependent protein kinase). ML240 (1.1, 3.3, 10, or 20 μM) induces executioner caspases 3 and 7 and triggers cell death independently of apical caspases 8 and 9[1]. ML240 is cytotoxic to HCT15 and SW403 cells, with GI_{50}s of 0.76 and 0.5 μM after treatment for 24 h, and 0.54 and 0.5 μM after treatment for 72 h, respectively[2].
Solvent&Solubility	***In Vitro:*** **DMSO : 12.5 mg/mL (31.53 mM;** Need ultrasonic) **Ethanol : < 1 mg/mL** (insoluble) **H_2O : < 0.1 mg/mL** (insoluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.5224 mL	12.6122 mL	25.2245 mL
5 mM	0.5045 mL	2.5224 mL	5.0449 mL
10 mM	0.2522 mL	1.2612 mL	2.5224 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 (6.31 mM); Suspended solution; Need ultrasonic

此方案可获得 2.5 mg/mL (6.31 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 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 (6.31 mM); Suspended solution; Need ultrasonic

	此方案可获得 2.5 mg/mL (6.31 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 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 (6.31 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (6.31 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]. Chou TF et al. Structure-activity relationship study reveals ML240 and ML241 as potent and selective inhibitors of p97 ATPase. ChemMedChem, 2013 Feb, 8(2):297-312. [2]. Chou TF, et al. Selective, reversible inhibitors of the AAA ATPase p97. Probe Reports from the NIH Molecular Libraries Program. April 14, 2011.
实验参考：	
Cell Assay	HeLa cells stably expressing ODD-luciferase are seeded onto a 96-well white solid bottom plate (5000 cells/well) and cells are grown for 16 h. Cells are treated with DMEM containing MG132 (4 μM) for 1h and washed with 100 μL PBS twice. DMEM containing 2.5% FBS, cycloheximide (50 μg/mL) and ML240 are added into the well. Four 96-well plates are prepared and one of the plates is taken out from incubator at each time point (70, 90, 120, or 150 min). Luciferin (50 μL of 1 mg/mL in PBS) is added into each well containing 50 μL of medium and incubated at room temperature with shaking at 500 rpm for 5 min. Luminescence intensity is determined with 0.1 ms integration time on the Synergy HT Microplate Reader[2].
References	[1]. Chou TF et al. Structure-activity relationship study reveals ML240 and ML241 as potent and selective inhibitors of p97 ATPase. ChemMedChem, 2013 Feb, 8(2):297-312. [2]. Chou TF, et al. Selective, reversible inhibitors of the AAA ATPase p97. Probe Reports from the NIH Molecular Libraries Program. April 14, 2011.