产品名称：LDC4297
产品别名：LDC4297

生物活性：

Description	LDC4297 is a potent and selective CDK7 inhibitor with an IC50 of 0.13 nM.
IC_{50} & Target	CDK7
	0.13 nM (IC_{50})
In Vitro	The affinity of LDC4297 for CDK7 proves to be extremely high. Kinase assays performed for CDK1, CDK2, CDK4, CDK6, CDK7, and CDK9 confirms the selective inhibitory activity of LDC4297 for CDK7 in the nano-picomolar range (IC50, 0.13±0.06 nM for CDK7 versus IC50s between 10 nM and 10,000 nM for all other analyzed CDKs). LDC4297 exerts anticytomegaloviral activity. Human cytomegalovirus (HCMV) replication is inhibited by LDC4297 in a concentration-dependent manner with an EC50 value of 24.5±1.3 nM. Inhibition is statistically significant and morphological signs of cytotoxicity only occurrs at concentrations of 3.3 μM or higher. Anti-HCMV activity of LDC4297 is exerted through a multifaceted mode of action that involves an interference with virus-induced Rb phosphorylation. Virus replication is broadly blocked by LDC4297, whereby the antiviral efficacies varied between the viruses used, i.e., strong efficacy for HSV-1 and VZV (EC50s = 0.02 and 0.06 μM, respectively) and intermediate to low efficacy for HSV-2 and EBV (EC50s = 0.27 and 1.21 μM, respectively[1].
In Vivo	An analysis of the PK parameters in CD1 mice reveals positive characteristics after oral administration, as demonstrated for a single-dose treatment (100 mg/kg of LDC4297). The half-life (t1/2z) is determined to be 1.6 h, and a time (Tmax) to a mean peak plasma concentration of 1,297.6 ng/mL is reached 0.5 h after administration, with a continued presence of LDC4297 plasma levels for at least 8 h and a bioavailability of 97.7%[1].
Solvent&Solubility	***In Vitro:*** **DMSO : ≥ 60 mg/mL (138.72 mM)** * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.3120 mL	11.5602 mL	23.1203 mL
	5 mM	0.4624 mL	2.3120 mL	4.6241 mL
	10 mM	0.2312 mL	1.1560 mL	2.3120 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 (5.78 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (5.78 mM，饱和度未知) 的澄清溶液。

	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 (5.78 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (5.78 mM，饱和度未知) 的澄清溶液。 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 (5.78 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (5.78 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]. Hutterer C, et al. A novel CDK7 inhibitor of the Pyrazolotriazine class exerts broad-spectrum antiviral activity at nanomolar concentrations. Antimicrob Agents Chemother. 2015 Apr;59(4):2062-71.
实验参考：	
Cell Assay	A trypan blue exclusion assay is performed with cultured cells seeded in 24-well plates and incubated with increasing concentrations of antiviral compound LDC4297 (range, 0.1 to 50 μM) for the durations indicated. Cell staining is achieved with 0.1% trypan blue for 10 min at room temperature before the percentage of viable cells is determined by microscopic counting[1].
References	[1]. Hutterer C, et al. A novel CDK7 inhibitor of the Pyrazolotriazine class exerts broad-spectrum antiviral activity at nanomolar concentrations. Antimicrob Agents Chemother. 2015 Apr;59(4):2062-71.