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产品名称：SIRT2 Inhibitor II, AK-1
产品别名：AK-1

生物活性：

Description	AK-1 is a potent, specific and cell-permeable SIRT2 inhibitor, with an IC50 of 12.5 μM.
IC_{50} & Target	SIRT2
	12.5 μM (IC_{50})
In Vitro	AK-1 achieves significant neuroprotection in Huntington's disease flies at 10 μM, improving the number of rhabdomeres from 5.2 to 5.6[1]. AK-1 is a potent, specific and cell-permeable SIRT2 inhibitor, with an IC50 of 12.5 μM[2]. AK-1 treatment induces proteasomal degradation of the Snail transcription factor through inactivation of the NF-κB/CSN2 pathway. Reduction in the level of Snail results in upregulation of p21, leading to G1 arrest, slow proliferation, and slow wound-healing activity. The regulation of Snail-p21 axis by AK-1 also occurs in HT-29 colon cancer cells[3]. Under hypoxic conditions, AK-1 increases the ubiquitination of HIF-1α in a VHL-dependent manner, leading to the degradation of HIF-1α via a proteasomal pathway. Downregulation of HIF-1α expression reduces its transcriptional activity and, eventually, reduces the expression of BNIP3, one of HIF-1 target genes, in AK-1-treated cells[4].

Solvent&Solubility

In Vitro:

DMSO : ≥ 50 mg/mL (123.93 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.4786 mL	12.3931 mL	24.7862 mL
	5 mM	0.4957 mL	2.4786 mL	4.9572 mL
	10 mM	0.2479 mL	1.2393 mL	2.4786 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 (6.20 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (6.20 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]. Luthi-Carter R, et al. SIRT2 inhibition achieves neuroprotection by decreasing sterol biosynthesis. Proc Natl Acad Sci U S A. 2010 Apr 27;107(17):7927-32. [2]. Lee SD, et al. AK-1, a SIRT2 inhibitor, destabilizes HIF-1α and diminishes its transcriptional activity during hypoxia. Cancer Lett. 2016 Apr 1;373(1):138-45. [3]. David M. Taylor, et al. A Brain-Permeable Small Molecule Reduces Neuronal Cholesterol by Inhibiting Activity of Sirtuin 2 Deacetylase. ACS Chem Biol. 2011 Jun 17;6(6):540-6. [4]. Cheon MG, et al. AK-1, a specific SIRT2 inhibitor, induces cell cycle arrest by downregulating Snail in HCT116 human colon carcinoma cells. Cancer Lett. 2015 Jan 28;356(2 Pt B):637-45.
实验参考：	
Cell Assay	HEK293 cells are co-transfected with 3 μg of pGL2-PGK1-HRE-Luc and 1 μg of pCMV-β-galactosidase plasmids. Twenty-four hours later, the cells are incubated under hypoxic conditions for 24 hr in the presence of 10 μM AK-1 and then lysed with luciferase cell lysis buffer. Luciferase and β-galactosidase activities are measured using luciferin and o-nitrophenyl-β-d-galactopyranoside, respectively, as substrates. Transfection efficiency is normalized according to β-galactosidase activity[3].
References	[1]. Luthi-Carter R, et al. SIRT2 inhibition achieves neuroprotection by decreasing sterol biosynthesis. Proc Natl Acad Sci U S A. 2010 Apr 27;107(17):7927-32. [2]. Lee SD, et al. AK-1, a SIRT2 inhibitor, destabilizes HIF-1α and diminishes its transcriptional activity during hypoxia. Cancer Lett. 2016 Apr 1;373(1):138-45. [3]. David M. Taylor, et al. A Brain-Permeable Small Molecule Reduces Neuronal Cholesterol by Inhibiting Activity of Sirtuin 2 Deacetylase. ACS Chem Biol. 2011 Jun 17;6(6):540-6. [4]. Cheon MG, et al. AK-1, a specific SIRT2 inhibitor, induces cell cycle arrest by downregulating Snail in HCT116 human colon carcinoma cells. Cancer Lett. 2015 Jan 28;356(2 Pt B):637-45.