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产品名称：KIRA6
产品别名：KIRA6

生物活性：

Description	KIRA6 is an advanced small-molecule IRE1α RNase kinase inhibitor with an IC_{50} of 0.6 μM[2]. KIRA6 can trigger an apoptotic response[1].	
IC_{50} & Target	IC50: 0.6 μM (IRE1α RNase kinase)[2]	
In Vitro	KIRA6 (1nM-100μM) bounds to the cytoplasmic domain of KIT with a Kd value of 10.8 μM[1]. KIRA6 (10-1000 nM; 72 hours) strongly compromises the viability of the KIT-dependent cell line HMC-1.1 at the low nM concentration, in a manner that coincided with KIT blockade[1]. KIRA6 (10-1000 nM; 1 hour) reduces signaling output of KIT, including the phosphorylation of KIT as well as its downstream signaling modules, PSTAT5 and phosphorylated ERK1/2[1]. KIRA6 (1 μM; 0-48 hours) inhibits Ins1 mRNA decay from IRE1α hyperactivation at a dose-dependent manner[2]. KIRA6 (0.1-10μM; 72 hours) dose-dependently reduces 1NM-PP1 potentiation of Ins1 apoptosis during ER stress in a dose-dependent manner[2].	
	Cell Viability Assay[1]	
	Cell Line:	HMC-1.1 cells
	Concentration:	10 nM, 30 nM, 100 nM, 300 nM, 1000 nM
	Incubation Time:	72 hours
	Result:	Inhibited cell viability from 30 nM.
	Western Blot Analysis[1]	
	Cell Line:	HMC-1.1 cells
	Concentration:	10 nM, 30 nM, 100 nM, 300 nM, 1000 nM
	Incubation Time:	1 hours
	Result:	Reduced expression of phosphorylated KIT, STAT5 and ERK1/2.
	RT-PCR[2]	
	Cell Line:	INS-1 IRE1α (WT) cells
	Concentration:	1 μM
	Incubation Time:	0 hour, 12 hours, 24 hours, 48 hours
	Result:	Inhibited Ins1 mRNA expression.
	Apoptosis Analysis[2]	
	Cell Line:	INS-1 IRE1α (WT) cells
	Concentration:	1-10 μM
	Incubation Time:	72 hours
	Result:	Reduced 1NM-PP1 potentiation of Ins1 apoptosis during ER stress.
In Vivo	KIRA6 (intraperitoneal injection; 5 mg/kg; 37 days) shows significant amelioration of random glucose levels over several weeks compared to vehicle, both fed ad lib[2]. KIRA6 (intraperitoneal injection; 5 mg/kg; 21 or 18 days postinjections) increases both plasma insulin and C-peptide levels, remains insulin-positive islet areas at high level after stopping injections in the Akita Mouse[2].	

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	Animal Model:	Male Ins2+/Akita mice[2]
	Dosage:	5 mg/kg
	Administration:	Intraperitoneal injection; 5 mg/kg; 21 or 18 days postinjections
	Result:	Attenuates b cell functional loss, increased insulin levels.

Solvent&Solubility

In Vitro:

DMSO : ≥ 5 mg/mL (9.64 mM)

Ethanol : 2 mg/mL (3.86 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	1.9285 mL	9.6426 mL	19.2853 mL
	5 mM	0.3857 mL	1.9285 mL	3.8571 mL
	10 mM	---	---	---

*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: ≥ 0.5 mg/mL (0.96 mM); Clear solution

此方案可获得 ≥ 0.5 mg/mL (0.96 mM，饱和度未知) 的澄清溶液。

以 1 mL 工作液为例，取 100 μL 5.0 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: ≥ 0.5 mg/mL (0.96 mM); Clear solution

此方案可获得 ≥ 0.5 mg/mL (0.96 mM，饱和度未知) 的澄清溶液。

以 1 mL 工作液为例，取 100 μL 5.0 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: ≥ 0.5 mg/mL (0.96 mM); Clear solution

此方案可获得 ≥ 0.5 mg/mL (0.96 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 5.0 mg/mL 的澄清 DMSO 储备液加到 900 μL 玉米油中，混合均匀。

References	[1]. Mahameed M,et al. The unfolded protein response modulators GSK2606414 and KIRA6 are potent KIT inhibitors. Cell Death Dis. 2019 Apr 1;10(4):300. [2]. Ghosh R, et al. Allosteric inhibition of the IRE1α RNase preserves cell viability and function during endoplasmic reticulum stress. Cell. 2014 Jul 31;158(3):534-48.