

产品名称：**ZM 447439**
产品别名：**ZM-447439**

生物活性:

Description	ZM-447439 is an aurora kinase inhibitor with IC ₅₀ s of 110 and 130 nM for aurora A and B, respectively.				
IC ₅₀ & Target	Aurora A	Aurora B			
	110 nM (IC ₅₀)	130 nM (IC ₅₀)			
In Vitro	Cells treated with ZM-447439 progress through interphase, enter mitosis normally, and assemble bipolar spindles. However, chromosome alignment, segregation, and cytokinesis all fail. ZM-447439 inhibits cell division and inhibit mitotic phosphorylation of histone H3. ZM-447439 prevents chromosome alignment and segregation. ZM-447439 compromises spindle checkpoint function. ZM-447439 inhibits kinetochore localization of BubR1, Mad2, and Cenp-E[1]. Inhibition of Aurora kinase by ZM-447439 reduces histone H3 phosphorylation at Ser10 in Hep2 carcinoma cells. Multipolar spindles are induced in these ZM-treated G2/M-arrested cells with accumulation of 4N/8N DNA, similar to cells with genetically suppressed Aurora-B. ZM-447439 treatment induces cell apoptosis. ZM-447439 inhibition of Aurora kinase is potently in association with decrease of Akt phosphorylation at Ser473 and its substrates GSK3α/β phosphorylation at Ser21 and Ser9[2].				
Solvent&Solubility	In Vitro: DMSO : ≥ 100 mg/mL (194.71 mM) * "≥" means soluble, but saturation unknown.				
	Preparing Stock Solutions	<div><div>SolventMassConcentration</div><div></div></div>	1 mg	5 mg	10 mg
		1 mM	1.9471 mL	9.7354 mL	19.4708 mL
		5 mM	0.3894 mL	1.9471 mL	3.8942 mL
		10 mM	0.1947 mL	0.9735 mL	1.9471 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℃, 6 months; -20℃, 1 month。 -80℃ 储存时，请在 6 个月内使用， -20℃ 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 (4.87 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (4.87 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。 				

	<p>实验。</p> <p>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。</p>
References	<p>[1]. Ditchfield C, et al. Aurora B couples chromosome alignment with anaphase by targeting BubR1, Mad2, and Cenp-E to kinetochores. J Cell Biol. 2003 Apr 28;161(2):267-80.</p> <p>[2]. Long ZJ, et al. ZM 447439 inhibition of aurora kinase induces Hep2 cancer cell apoptosis in three-dimensional culture. Cell Cycle. 2008 May 15;7(10):1473-9.</p>
实验参考：	
Cell Assay	<p>To determine cloning efficiency, MCF7 cells are plated in phenol red free DME plus 5% stripped serum, and are then treated with or without the anti-estrogen ICI 182780 at 1 μM for 48 h. ZM-447439 is then added at the indicated concentrations for 72 h. The cells are harvested, washed, and ~400 cells plated in each well of a 6-well plate in complete media without ZM-447439. After 10 d, the colonies are fixed, stained with crystal violet, and counted. The cloning efficiency represents the number of colonies on ZM-447439-treated plates compared with DMSO-treated controls[1].</p>
Kinase Assay	<p>1 ng purified recombinant enzyme is added to a reaction cocktail containing buffer, 10 μM peptide substrate, 10 μM for Aurora A or 5 μM ATP for Aurora B, and 0.2 μCi γ[33P]ATP, and is then incubated at room temperature for 60 min. Reactions are stopped by addition of 20% phosphoric acid, and the products are captured on P30 nitrocellulose filters and assayed for incorporation of 33P with a Betaplate counter. No enzyme and no compound control values are used to determine the concentration of ZM-447439, which gave 50% inhibition of enzyme activity [1].</p>
References	<p>[1]. Ditchfield C, et al. Aurora B couples chromosome alignment with anaphase by targeting BubR1, Mad2, and Cenp-E to kinetochores. J Cell Biol. 2003 Apr 28;161(2):267-80.</p> <p>[2]. Long ZJ, et al. ZM 447439 inhibition of aurora kinase induces Hep2 cancer cell apoptosis in three-dimensional culture. Cell Cycle. 2008 May 15;7(10):1473-9.</p>

源叶生物