

产品名称: (Z)-4-羟基三苯氧胺
产品别名: 4-Hydroxytamoxifen; 4-羟基他莫昔芬

生物活性:					
Description	4-Hydroxytamoxifen is a selective estrogen receptor modulator (SERM).				
IC ₅₀ & Target	Estrogen receptor	CRISPR/Cas9			
	3.3 nM (IC ₅₀)				
In Vitro	4-Hydroxytamoxifen (Monohydroxytamoxifen) is a selective oestrogen receptor antagonist, with an IC ₅₀ of 3.3 nM for the [3H]oestradiol binding to oestrogen receptor. 4-Hydroxytamoxifen (10, 100 nM) enables to inhibit the binding of [3H]oestradiol to the human 8 S oestrogen receptor[1]. 4-Hydroxytamoxifen activates intein-linked inactive Cas9, reduces off-target CRISPR-mediated gene editing. In human cells, conditionally active Cas9s modify target genomic sites with up to 25-fold higher specificity than wild-type Cas9[2].				
In Vivo	4-Hydroxytamoxifen (0.2, 1 and 5 µg/day, p.o.) causes a dose-related decrease in uterine wet weight of immature rats[1]. 4-Hydroxytamoxifen (6 µg/0.1 mL sesame oil/day, s.c.) effectively attenuates methamphetamine-induced nigrostriatal dopamine depletions in bothsexes of intact and gonadectomized C57BL/6 J mice. 4-Hydroxytamoxifen does not alter the dopamine content levels in the striatum[3].				
Solvent&Solubility	In Vitro: DMSO : ≥ 28 mg/mL (72.26 mM) H ₂ O : < 0.1 mg/mL (insoluble) * "≥" means soluble, but saturation unknown.				
	Preparing Stock Solutions	<div>Solvent Concentration</div> <div>Mass</div>	1 mg	5 mg	10 mg
		1 mM	2.5806 mL	12.9029 mL	25.8058 mL
		5 mM	0.5161 mL	2.5806 mL	5.1612 mL
		10 mM	0.2581 mL	1.2903 mL	2.5806 mL
	<p>*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。</p> <p>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。</p> <p>In Vivo:</p> <p>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：</p> <p>——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</p>				
	<p>1.请依序添加每种溶剂： 10% DMSO→40% PEG300 →5% Tween-80 → 45% saline</p> <p>Solubility: ≥ 2.08 mg/mL (5.37 mM); Clear solution</p> <p>此方案可获得 ≥ 2.08 mg/mL (5.37 mM, 饱和度未知) 的澄清溶液。</p> <p>以 1 mL 工作液为例，取 100 µL 20.8 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>				
	<p>2.请依序添加每种溶剂： 10% DMSO→ 90% (20% SBE-β-CD in saline)</p> <p>Solubility: 2.08 mg/mL (5.37 mM); Suspended solution; Need ultrasonic</p> <p>此方案可获得 2.08 mg/mL (5.37 mM)的均匀悬浊液，悬浊液可用于口服和腹腔注射。</p>				

	<p>以 1 mL 工作液为例，取 100 μL 20.8 mg/mL 的澄清 DMSO 储备液加到 900 μL 20% 的 SBE-β-CD 生理盐水溶液中，混合均匀。</p> <p>3.请依序添加每种溶剂： 10% DMSO \rightarrow90% corn oil</p> <p>Solubility: \geq 2.08 mg/mL (5.37 mM); Clear solution</p> <p>此方案可获得 \geq 2.08 mg/mL (5.37 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。</p> <p>以 1 mL 工作液为例，取 100 μL 20.8 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]. Jordan VC, et al. A monohydroxylated metabolite of tamoxifen with potent antioestrogenic activity. <i>J Endocrinol.</i> 1977 Nov;75(2):305-16.</p> <p>[2]. Davis KM, et al. Small molecule-triggered Cas9 protein with improved genome-editing specificity. <i>Nat Chem Biol.</i> 2015 May;11(5):316-8.</p> <p>[3]. Kuo YM, et al. 4-Hydroxytamoxifen attenuates methamphetamine-induced nigrostriatal dopaminergic toxicity in intact and gonadectomized mice. <i>J Neurochem.</i> 2003 Dec;87(6):1436-43.</p>
实验参考：	
Animal Administration	<p>Mice[3]</p> <p>Animals of each sex are divided into two groups: one group receives 4-Hydroxytamoxifen [6 μg/0.1 mL sesame oil/day, subcutaneously (s.c.) starting at 06.00 h] injections for three consecutive days, while the other group receives an equivalent amount of sesame oil injection for 3 days. Four hours following the third injection, each group is then subdivided into two groups: one receives four cumulative doses of methamphetamine hydrochloride (10 mg/kg, s.c.), and the other receives a comparable volume of saline at 2-h intervals. Bilateral gonadectomy is performed under pentobarbital anesthesia (50 mg/kg, intraperitoneally). Five weeks after surgery, gonadectomized mice of each sex are randomly divided into six groups. Five groups of each sex receive three daily injections of various concentrations of 4-Hydroxytamoxifen (0, 1.5, 3.0, 6.0, and 12.0 μg/0.1 mL sesame oil/day). Four hours following the third injection, mice receive four doses of methamphetamine (MA, 10 mg/kg) at 2-h intervals. The remaining group of each sex receives sesame oil pretreatment for three consecutive days, followed by saline injections, and serves as the control group[3].</p>
Kinase Assay	<p>Cytosol (200 μL) is incubated for 30 min at 4°C with different concentrations of oestradiol, tamoxifen and (4-Hydroxytamoxifen) or dihydroxytamoxifen administered in 10 μL methanol. Control tubes are incubated with 10 μL methanol alone and non-specific binding is determined in a parallel incubation of cytosol (200 μL) with methanol (10 μL) containing DES (5×10^6 M). [2,4,6,7-3H]Oestradiol solution (50 μL) in TED buffer is added to each tube to give a final concentration of 2×10^{-9} M. Incubation is continued for 4 h (4°C) and then 400 μL of a suspension of dextran-coated charcoal (250 mg % Norit A, 2.5 mg % dextran) in TED buffer are added and allowed to stand for 20 min. Tubes are centrifuged at 800 g for 10 min (4°C) and 400 μL samples of the supernatant are added to 10 mL tritium scintillator (6 g butyl PBD, 135 mL toluene, 720 mL dioxan, 100 g naphthalene, 45 mL absolute methanol). Samples are counted for 10 min in a liquid scintillation spectrometer. Counting efficiency is determined by external standardization (35-36 %). Results are represented as a percentage of the specifically bound radioactivity (c.p.m.) in the control tubes[1].</p>
	<p>[1]. Jordan VC, et al. A monohydroxylated metabolite of tamoxifen with potent antioestrogenic</p>

References	<p><u>activity. J Endocrinol. 1977 Nov;75(2):305-16.</u></p> <p>[2]. <u>Davis KM, et al. Small molecule-triggered Cas9 protein with improved genome-editing specificity. Nat Chem Biol. 2015 May;11(5):316-8.</u></p> <p>[3]. <u>Kuo YM, et al. 4-Hydroxytamoxifen attenuates methamphetamine-induced nigrostriatal dopaminergic toxicity in intact and gonadectomized mice. J Neurochem. 2003 Dec;87(6):1436-43.</u></p>
-------------------	---



源叶生物