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产品名称：1-O-Hexyl-2,3,5-trimethylhydroquinone
产品别名：HTHQ

生物活性：		
Description	HTHQ (1-O-hexyl-2,3,5-trimethylhydroquinone) is a potent lipophilic phenolic antioxidant. HTHQ has considerable anti-oxidative activity by directly reacting with reactive oxygen species (ROS) and scavenging ROS to form more stable free radicals[1][2].	
IC_{50} & Target	ROS[1]	
In Vitro	HTHQ (0-100 μM; 24 hours; PC12 cells) treatment increases cell viabilities in a dose-dependent manner[1]. HTHQ (10 μM; 0.6-24 hours; PC12 cells) inhibits 3,4-L-Dihydroxyphenylalanine (L-DOPA) -induced phosphorylation of sustaines extracellular signal-regulated kinases (ERK1/2), p38 mitogen-activated protein kinase (MAPK), and c-Jun N-terminal kinase (JNK1/2). HTHQ also normalizes L-DOPA-reduced Bcl-2-associated death protein (Bad) phosphorylation and Bcl-2-associated X protein (Bax) expression, promoting cell survival[1].	
	Cell Viability Assay[1]	
	Cell Line:	PC12 cells
	Concentration:	0 μM, 1 μM, 10 μM, and 100 μM
	Incubation Time:	24 hours
	Result:	Reduced cell viability at 24 hours caused by both 100 and 200 μM L-DOPA was significantly attenuated.
	Western Blot Analysis[1]	
	Cell Line:	PC12 cells
	Concentration:	10 μM
	Incubation Time:	0.6-24 hours
	Result:	Inhibited L-DOPA-induced phosphorylation of sustained extracellular signal-regulated kinases (ERK1/2), p38 mitogen-activated protein kinase (MAPK), and c-Jun N-terminal kinase (JNK1/2). And also normalized L-DOPA-reduced Bcl-2-associated death protein (Bad) phosphorylation and Bcl-2-associated X protein (Bax) expression.
In Vivo	HTHQ (50-200 mg/kg; oral administration; for 4 weeks; specific pathogen-free male Sprague Dawley rats) treatment significantly improves liver weight and serum chemistry level. HTHQ reduces hydroxyproline and malondialdehyde level in the liver. HTHQ treatment also reduces fibrotic septa. HTHQ administration shows reduced mRNA level of PDGF (Plateletderived growth factor) , α-SMA (α-smooth muscle actin) and TGF-β (transforming growth factor-β) than DMN-induced hepetic fibrosis animals in the liver tissue[2].	
	Animal Model:	48 specific pathogen-free male Sprague Dawley (SD) rats (6-week-old) with dimethylnitrosamine (DMN) [2]
	Dosage:	50 mg/kg, 100 mg/kg, 200 mg/kg
	Administration:	Oral administration; for 4 weeks
	Result:	Improved against DMN-induced liver fibrosis in male SD rats.
	In Vitro: **DMSO : ≥ 100 mg/mL (423.10 mM)**	

Solvent&Solubility

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	4.2310 mL	21.1551 mL	42.3101 mL
	5 mM	0.8462 mL	4.2310 mL	8.4620 mL
	10 mM	0.4231 mL	2.1155 mL	4.2310 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 (10.58 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (10.58 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% corn oil

Solubility: ≥ 2.5 mg/mL (10.58 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (10.58 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]. Park HJ, et al. 1-O-Hexyl-2,3,5-Trimethylhydroquinone Ameliorates l-DOPA-Induced Cytotoxicity in PC12 Cells. Molecules. 2019 Mar 1;24(5). pii: E867.

[2]. Jung YR et al. Inhibitory Effect of 1-O-Hexyl-2,3,5-Trimethylhydroquinone on Dimethylnitrosamine-induced Liver Fibrosis in Male SD Rats. Toxicol Res. 2010 Sep;26(3):193-201.