产品名称：1400 W Dihydrochloride
产品别名：1400W Dihydrochloride

生物活性：

Description	1400W dihydrochloride is a potent and selective inhibitor of human inducible NO synthase with Ki values of 7 nM.
IC_{50} & Target	Ki: 7 nM (iNOS), 2 μM (nNOS), 50 μM (eNOS)[1]
In Vitro	1400W is a slow, tight binding inhibitor of human inducible nitric- oxide synthase (iNOS). The slow onset of inhibition by 1400W shows saturation kinetics with a maximal rate constant of 0.028 s^{-1} and a binding constant of 2.0 μM. Inhibition is dependent on the cofactor NADPH. 1400W is at least 5000-fold selective for iNOS versus eNOS. In contrast, inhibition of human neuronal NOS and endothelial NOS (eNOS) is relatively weaker, rapidly reversible, and competitive with L-arginine, with K_i values of 2 μM and 50 μM, respectively[1]. 1400W treatment inhibits iNOS expression without affecting nNOS or eNOS. 1400W also reduces NO, 3-NT and MDA production, and prevents neuronal cell apoptosis in cerebral cortex[2].
In Vivo	1400W potently (ED_{50}=0.3 mg/kg) reduces the delayed vascular injury in rats attributable to LPS-induced iNOS but fails to exacerbate acute vascular leakage when given concurrently with LPS[1]. Administration of 1400W lowers NOx levels in all the experimental groups. In addition, lipid peroxidation, the percentage of apoptotic cells, and nitrated protein expression fall in the late post-hypoxia period (48 h and 5 days)[3].

Solvent&Solubility

In Vitro:

DMSO : 20 mg/mL (79.95 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.9973 mL	19.9864 mL	39.9728 mL
	5 mM	0.7995 mL	3.9973 mL	7.9946 mL
	10 mM	0.3997 mL	1.9986 mL	3.9973 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 mg/mL (7.99 mM); Clear solution

此方案可获得 ≥ 2 mg/mL (7.99 mM，饱和度未知) 的澄清溶液。

以 1 mL 工作液为例，取 100 μL 20.0 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: ≥ 2 mg/mL (7.99 mM); Clear solution

此方案可获得 ≥ 2 mg/mL (7.99 mM，饱和度未知) 的澄清溶液。

	以 1 mL 工作液为例，取 100 μL 20.0 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: ≥ 2 mg/mL (7.99 mM); Clear solution 此方案可获得 ≥ 2 mg/mL (7.99 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 20.0 mg/mL 的澄清 DMSO 储备液加到 900 μL 玉米油中，混合均匀。
References	[1]. Garvey EP, et al. 1400W is a slow, tight binding, and highly selective inhibitor of inducible nitric-oxide synthase in vitro and in vivo. J Biol Chem. 1997 Feb 21;272(8):4959-63. [2]. Shi Q, et al. 1400W ameliorates acute hypobaric hypoxia/reoxygenation-induced cognitive deficits by suppressing the induction of inducible nitric oxide synthase in rat cerebral cortex microglia. Behav Brain Res. 2017 Feb 15;319:188-199. [3]. Rus A, et al. Inducible NOS inhibitor 1400W reduces hypoxia/re-oxygenation injury in rat lung. Redox Rep. 2010;15(4):169-78.

实验参考：

Animal Administration	Rats: The effects of 1400W on plasma leakage are assessed in rats by determining the leakage of [^{125}I]human serum albumin from plasma into organs. 1400W (0.1-10 mg/kg, subcutaneous) is dissolved in isotonic saline and administered either concurrently with endotoxin or 3 h following LPS administration (E. coli LPS, 3 mg/kg intravenously). Plasma leakage is then assessed 1 or 5 h after delivery of 1400W[1].
References	[1]. Garvey EP, et al. 1400W is a slow, tight binding, and highly selective inhibitor of inducible nitric-oxide synthase in vitro and in vivo. J Biol Chem. 1997 Feb 21;272(8):4959-63. [2]. Shi Q, et al. 1400W ameliorates acute hypobaric hypoxia/reoxygenation-induced cognitive deficits by suppressing the induction of inducible nitric oxide synthase in rat cerebral cortex microglia. Behav Brain Res. 2017 Feb 15;319:188-199. [3]. Rus A, et al. Inducible NOS inhibitor 1400W reduces hypoxia/re-oxygenation injury in rat lung. Redox Rep. 2010;15(4):169-78.