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产品名称：2,3',4,5'-四甲氧基二苯乙烯
产品别名：TMS ；(E)-2,3',4,5'-tetramethoxystilbene

生物活性：

Description	TMS is a selective inhibitor of CYP1B1 activity.
IC_{50} & Target	CYP1B1
In Vitro	TMS, an analogue of resveratrol, is considered to be a potential cancer preventive agent since it is a potent inhibitor of CYP1B1. To assess survival of MCF-7 cells exposed to 1 μM benzo[a]pyrene (BP), 1 μM BP+1 μM TMS and 1 μM BP+4 μM TMS, cells ae incubated for up to 72 h without a media change. Luminescence units from exposed cells, expressed as a percentage of luminescence units from solvent (DMSO)-treated cells at the same time intervals. In all exposure groups, cell viability remains >90% for the first 24 h, but by 72 h, cell survival drops to 60-70%[1].
In Vivo	To determine the contribution of CYP1B1 in development of hypertension in spontaneously hypertensive rats (SHR), the effect of TMS is examined on in SHR and WKY rats. Systolic BP steadily increases in SHR from 4 weeks of age. Starting from 8 weeks of age, daily injections of TMS reduce systolic BP in SHR to levels observed at the beginning of the experiment (207±7 vs. 129±2 mmHg). Systolic BP is not altered in WKY injected with TMS or its vehicle (129±7 vs. 127±4 mmHg) [1].

Solvent&Solubility

In Vitro:

DMSO : ≥ 50 mg/mL (166.47 mM)

H_2O : < 0.1 mg/mL (insoluble)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.3294 mL	16.6472 mL	33.2945 mL
5 mM	0.6659 mL	3.3294 mL	6.6589 mL
10 mM	0.3329 mL	1.6647 mL	3.3294 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 (8.32 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (8.32 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 (8.32 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (8.32 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]. Einem Lindeman T, et al. The resveratrol analogue, 2,3',4,5'-tetramethoxystilbene, does not inhibit CYP gene expression, enzyme activity and benzo[a]pyrene-DNA adduct formation in MCF-7 cells exposed to benzo[a]pyrene. Mutagenesis. 2011 Sep;26(5):629-35. [2]. Jennings BL, et al. Cytochrome P450 1B1 contributes to increased blood pressure and cardiovascular and renal dysfunction in spontaneously hypertensive rats. Cardiovasc Drugs Ther. 2014 Apr;28(2):145-61.

实验参考：

Cell Assay	Cell viability is determined using the Cell Titer Glo Luminescent Cell Viability Assay. In brief, MCF-7 cells are seeded in 12-well plates (75 000 cells per well) in triplicate. Attached cells are exposed to 1 μM BP in the presence of 0, 1 or 4 μM TMS. At 4, 12, 24 or 72 h, RIPA Lysis Buffer (1x) is added to lyse the cells. A diluted sample of homogeneous cell lysate is transferred in duplicate to a 96-well plate and combined with an equivalent volume of Cell Titer Glo Luminescence. Luminescence measure using the Tropix 717 Microplate Luminometer. To examine viability of cells exposed to BP alone, the 72-h treatment is repeated twice, and for each experiment cells are assayed in triplicate. The values are expressed as % of the DMSO-alone solvent control[1].
Animal Administration	Mice[1] 36 three-weeks-old male spontaneously hypertensive rats (SHR) and 36 age-matched WKY are used throughout this research. Each strain of rats is split into two groups; one group is injected daily with TMS (600 μg/kg) and the other with vehicle (DMSO; 100 μL) beginning at 8 weeks of age. Systolic BP and mean arterial pressure (MAP) are measured twice a week from 4 weeks of age; a noninvasive tail cuff method is used[1].
References	[1]. Einem Lindeman T, et al. The resveratrol analogue, 2,3',4,5'-tetramethoxystilbene, does not inhibit CYP gene expression, enzyme activity and benzo[a]pyrene-DNA adduct formation in MCF-7 cells exposed to benzo[a]pyrene. Mutagenesis. 2011 Sep;26(5):629-35. [2]. Jennings BL, et al. Cytochrome P450 1B1 contributes to increased blood pressure and cardiovascular and renal dysfunction in spontaneously hypertensive rats. Cardiovasc Drugs Ther. 2014 Apr;28(2):145-61.