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产品名称：NB-598 (Maleate)
产品别名：NB-598 Maleate

生物活性：

Description	NB-598 Maleate is a potent and competitive inhibitor of squalene epoxidase (SE), and suppresses triglyceride biosynthesis through the farnesol pathway.
In Vitro	NB-598 (10 μM) causes a 36±7% reduction in total cholesterol level of MIN6 cells. NB-598 causes a significant decrease in cholesterol by 49±2%, 46±7%, and 48±2% from PM, ER, and SG, respectively. NB-598 dose-dependently inhibits insulin secretion under both basal (1 mM glucose) and glucose-stimulated (16.7 mM glucose) conditions. NB598 at concentrations up to 10 μM does not affect peak outward KV currents or the voltage dependence of activation but increases current inactivation[1]. NB-598 (10 μM) inhibits the synthesis of sterol and sterol ester from [^{14}C]acetate without affecting the synthesis of other lipids such as phospholipids (PL), free fatty acids (FFA) and triacylglycerol (TG). In the absence of exogenous liposomal cholesterol, NB-598 reduces ACAT activity by 31%. NB-598 reduces ACAT activity by 22% even in the presence of a 600 PM concentration of liposomal cholesterol[2]. NB-598 suppresses the secretion of cholesterol and triacylglycerol from HepG2 cells into the medium[3].
Solvent&Solubility	***In Vitro:***

DMSO : 100 mg/mL (**176.76 mM;** Need ultrasonic)

H_2O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.7676 mL	8.8380 mL	17.6760 mL
	5 mM	0.3535 mL	1.7676 mL	3.5352 mL
	10 mM	0.1768 mL	0.8838 mL	1.7676 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 (4.42 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (4.42 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% (20% SBE-β-CD in saline)

	Solubility: 2.5 mg/mL (4.42 mM); Suspended solution; Need ultrasonic 此方案可获得 2.5 mg/mL (4.42 mM)的均匀悬浊液，悬浊液可用于口服和腹腔注射。 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 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: ≥ 2.5 mg/mL (4.42 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (4.42 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]. Xia F, et al. Inhibition of cholesterol biosynthesis impairs insulin secretion and voltage-gated calcium channel function in pancreatic beta-cells. Endocrinology. 2008 Oct;149(10):5136-45. [2]. Horie M, et al. Effects of NB-598, a potent squalene epoxidase inhibitor, on the apical membrane uptake of cholesterol and basolateral membrane secretion of lipids in Caco-2 cells. Biochem Pharmacol. 1993 Jul 20;46(2):297-305. [3]. Horie M, et al. An inhibitor of squalene epoxidase, NB-598, suppresses the secretion of cholesterol and triacylglycerol and simultaneously reduces apolipoprotein B in HepG2 cells. Biochim Biophys Acta. 1993 May 20;1168(1):45-51.
实验参考：	
Kinase Assay	Caco-2 cells are grown in a 58-cm2 plastic dish with medium A for 13 days. The cells are washed with medium B, and then cultured with medium B including cholesterol-micelle and each compound. The compound is dissolved in Me_2SO, and the final concentration of Me_2SO is 0.1%(v/v). After 18 hr of incubation, the cells are washed extensively with phosphate-buffered saline (PBS) to remove the compound. Microsomes are prepared as described above. The reaction mixture (0.2 mL) consisted of 0.1 mg microsomes, 0.25% BSA and 40 PM [^{14}C]oleoyl CoA in buffer A. To avoid the effects of endogenous cholesterol, liposome (2 mol of cholesterol: 1 mol of phosphatidylcholine) [15] is added to the reaction mixture. The microsomes are preincubated for 1 hr with or without exogenous cholesterol, and ACAT activity is determined as described above. [2]
References	[1]. Xia F, et al. Inhibition of cholesterol biosynthesis impairs insulin secretion and voltage-gated calcium channel function in pancreatic beta-cells. Endocrinology. 2008 Oct;149(10):5136-45. [2]. Horie M, et al. Effects of NB-598, a potent squalene epoxidase inhibitor, on the apical membrane uptake of cholesterol and basolateral membrane secretion of lipids in Caco-2 cells. Biochem Pharmacol. 1993 Jul 20;46(2):297-305. [3]. Horie M, et al. An inhibitor of squalene epoxidase, NB-598, suppresses the secretion of cholesterol and triacylglycerol and simultaneously reduces apolipoprotein B in HepG2 cells. Biochim Biophys Acta. 1993 May 20;1168(1):45-51.