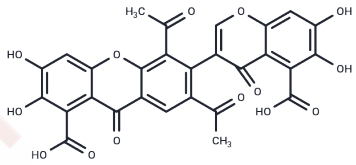
Data Sheet (Cat.No.T70955)

TargetMol

Vinaxanthone

Chemical Properties



CAS No. : 133293-89-7

Formula: C28H16O14

Molecular Weight: 576.42

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Vinaxanthone (SM-345431) is a small molecule compound derived from Penicillium chrysogenum that acts as a selective and potent inhibitor of semaphorin3A, phospholipase C (PLC), and FabI, exhibiting antimicrobial activity by blocking intracellular fatty acid synthesis and inhibiting the growth of Staphylococcus aureus.
Targets(IC50)	Antibacterial,Phospholipase
In vitro	Vinaxanthone exhibits selective inhibitory activity against phospholipase C (PLC) in rat brain, mouse colon 26 adenocarcinoma, and mouse fibroblast NIH3T3 cells, with IC50 values of 5.4, 9.3, and 44 μM, respectively.At a concentration of 0.1 mg/mL for 24 hours, Vinaxanthone enhances peripheral nerve regeneration and induces limited neovascularization in the cornea[1].At a concentration of 0.5 μM for 20 minutes, Vinaxanthone may protect against Doxorubicin-induced apoptosis in foot cells[3].In the range of 0.1-1 μM for 24 hours, Vinaxanthone improves the changes in renal tubular cell characteristics induced by TGF-β1[2].
In vivo	Vinaxanthone (SM-345431), administered by subconjunctival injection at a concentration of 0.1 mg/mL every two days for 3 weeks, accelerates peripheral nerve regeneration and functional recovery in a mouse corneal transplantation model[1]. Vinaxanthone (SEMA3A-I), given by intraperitoneal injection at a dose of 20 μg, protects against podocyte injury induced by Adriamycin in a mouse model through an anti-apoptotic mechanism[3].

Solubility Information

Solubility	DMSO: 80 mg/mL (138.79 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 3.3 mg/mL (5.72 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.7348 mL	8.6742 mL	17.3485 mL
5 mM	0.347 mL	1.7348 mL	3.4697 mL
10 mM	0.1735 mL	0.8674 mL	1.7348 mL
50 mM	0.0347 mL	0.1735 mL	0.347 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Omoto M,et al. The semaphorin 3A inhibitor SM-345431 accelerates peripheral nerve regeneration and sensitivity in a murine corneal transplantation model. PLoS One. 2012;7(11):e47716.
Sang Y, et al. Semaporin3A inhibitor ameliorates renal fibrosis through the regulation of JNK signaling. Am J Physiol Renal Physiol. 2021 Dec 1;321(6):F740-F756.
Sang Y, et al. Semaphorin3A-Inhibitor Ameliorates Doxorubicin-Induced Podocyte Injury. Int J Mol Sci. 2020 Jun 8; 21(11):4099.

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