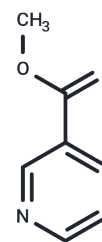


Methyl nicotinate

Chemical Properties

CAS No. :	93-60-7
Formula:	C7H7NO2
Molecular Weight:	137.14
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	Methyl nicotinate (methyl pyridine-3-carboxylate) is the methyl ester of that is used as an active ingredient as a rubefacient in over-the-counter topical preparations indicated for muscle and joint pain. The action of methyl nicotinate as a rubefacient is thought to involve peripheral vasodilation.
Targets(IC50)	Others
In vivo	the topical combination of comfrey root extract and methyl nicotinate has a clinically relevant, favourable impact on the outcomes of patients suffering from acute upper or low back pain. Patients treated with the combination had statistically significant and clinically relevant reductions in pain scores and increases in tenderness.
Animal Research	Patients were randomised and subsequently treated until Day 5 (fourth day after enrolment). One group of patients received a combination cream containing 35% of comfrey root extract (1:2, extractant 60 v/v%), and 1.2% methyl nicotinate (Kytta-Balsam? f, Merck Selbstmedikation GmbH, Darmstadt, Germany), the second group a cream containing 1.2% methyl nicotinate, and the third a placebo cream. Treatment was started after trial enrolment. Patients were seen for evaluation of treatment effects after 1 h and after 3 and 5 days (\pm 1 day)

Solubility Information

Solubility	DMSO: 45 mg/mL (328.13 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: 2 mg/mL (14.58 mM),Sonication is recommended. <i>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.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	7.2918 mL	36.4591 mL	72.9182 mL
5 mM	1.4584 mL	7.2918 mL	14.5836 mL
10 mM	0.7292 mL	3.6459 mL	7.2918 mL
50 mM	0.1458 mL	0.7292 mL	1.4584 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

Pabst H , Schaefer A , Staiger C , et al. Combination of Comfrey Root Extract Plus Methyl Nicotinate in Patients with Conditions of Acute Upper or Low Back Pain: A Multicentre Randomised Controlled Trial[J]. Phytotherapy Research, 2013, 27(6):811-817.

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