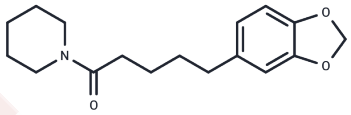
Data Sheet (Cat.No.T5786)

TargetMol

TETRAHYDROPIPERINE

Chemical Properties



CAS No. : 23434-88-0

Formula: C17H23NO3

Molecular Weight: 289.37

Storage: Keep away from direct sunlight
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	Tetrahydropiperine (Cosmoperine) is a natural product derived from piperine, can be used to treat convulsion, epilepsy, relieve pain, and control insects.
Targets(IC50)	Cytochromes P450,TRP/TRPV Channel
In vivo	TETRAHYDROPIPERINE is an agonist of transient receptor potential vanilloid type 1 (TRPV1; EC50 = 6.3 μM)[1]. It inhibits the cytochrome P450 (CYP) isoform CYP1A1/arylhydrocarbon hydroxylase (AHH; IC50 = 23 μM) and 7-methoxycoumarin O-demethylase (MOCD) activity (IC50 = 25 μM) in rat liver microsomes[2]. Tetrahydropiperine increases skin pigmentation in a mouse model of vitiligo when 100 μl of a 175 mM solution is administered topically, an effect that can be enhanced by subsequent suberythemal ultraviolet radiation (UVR)[3].
Animal Research	The test compounds were PIP [5-(3,4-methylenedioxyphenyl)-2,4-pentadienoylpiperidine], tetrahydropiperine [THP, 5-(3,4-methylenedioxyphenyl)-pentanoylpiperidine], a cyclohexyl analogue of piperine [CHP, 5-(3,4-methylenedioxyphenyl)-2,4-pentadienoylcyclohexylamine], and reduced CHP [rCHP, 5-(3,4-methylenedioxyphenyl)-2,4-pentanoylcyclohexylamine].?Sparsely pigmented, HRA/Skh-II mice were randomized to receive topical treatment with test compounds or vehicle twice a day for five days a week, with or without ultraviolet (UV) irradiation on 3 days a week.?Treatment was either continuous or interrupted to evaluate fading and repigmentation.?Skin inflammation and pigmentation were evaluated regularly during treatment.?DOPA+ melanocytes were determined histologically at the termination of treatment[3].

Solubility Information

Solubility	DMSO: 57 mg/mL (196.98 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.4558 mL	17.2789 mL	34.5578 mL
5 mM	0.6912 mL	3.4558 mL	6.9116 mL
10 mM	0.3456 mL	1.7279 mL	3.4558 mL
50 mM	0.0691 mL	0.3456 mL	0.6912 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

Edwin Andrés Correa, H?Gest?Tt E D , Sterner O , et al. In vitro TRPV1 activity of piperine derived amides[J]. Bioorganic & Medicinal Chemistry, 2010, 18(9):3299-3306.

Koul S , , Koul J L , Taneja S C , et al. Structure-activity relationship of piperine and its synthetic analogues for their inhibitory potentials of rat hepatic microsomal constitutive and inducible cytochrome P450 activities.[J]. Bioorganic & Medicinal Chemistry, 2000, 8(1):251-268.

Faas L , Venkatasamy R , Hider R C , et al. In vivo evaluation of piperine and synthetic analogues as potential treatments for vitiligo using a sparsely pigmented mouse model[J]. British Journal of Dermatology, 2008, 158(5): 941-950.