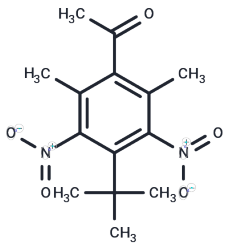
Data Sheet (Cat.No.T5654)

TargetMol

Musk ketone

Chemical Properties



CAS No. : 81-14-1

Formula: C14H18N2O5

Molecular Weight: 294.30

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	Musk ketone can induce the growth repression and the apoptosis of cancer cells. Musk ketone increases activity of glutathione S-transferase and thus may prove to be useful cancer chemoprotectant.
Targets(IC50)	Apoptosis,Others,Akt,Cytochromes P450,PI3K
In vitro	Similar to native musk, synthetic musk ketone induced the growth repression and the apoptosis of cancer cells. Additionally, numerous genes were differentially expressed in lung cancer cells after native musk treatment. These differentially expressed genes were involved in many signalling pathways. Among these pathways, apoptosis-related pathways included interleukin family, tumor necrosis factor family, and MAPK signalling pathway. Native musk and synthetic musk ketone can up-regulate IL-24 (interleukin family) and DDIT3 (MAPK signalling pathway) in lung cancer cells[1].
In vivo	Musk ketone can reduce secondary damage after spinal cord injury and promote nerve recovery in rats[2].
Cell Research	Twenty two cancer cell lines were treated with musk. Cell proliferation and apoptosis analyses were carried out. Native musk and synthetic?musk ketone?were analyzed by gas chromatograph-mass spectrometer (GC-MS) assay. Differentially expressed genes were determined by microarray and quantitative real-time polymerase chain reaction.
Animal Research	The rats weighed from 200 to 250 g and ?were randomly divided into five treatment groups: saline (NS group), methylprednisolone (MP group), and musk ketone groups (MO1, MO2, and MO3 groups).?The Swash plate test and BBB behavioral score were used to determine neurological function recovery after spinal cord injury.?Hematoxylin-eosin (HE) staining was used to detect general structural changes in spinal cord tissue.?The enzyme-linked immunosorbent assay was used for the determination of interleukin 10 (IL-10) in spinal cord tissue.??Compared with the NS control group, critical angle, BBB score and IL-10 levels in rat spinal cord tissue significantly increased in the MP group and MO groups 7 and 14 days after the operation.?HE staining showed that in the NS group, there was hemorrhage, edema, necrosis, axonal demyelination, inflammatory cell infiltration and glial cell response in spinal cord tissue.?After 7 days, spinal cord edema and inflammation were reduced and neuronal degeneration and necrosis were not evident in the MP and MO groups[2].

Solubility Information

Solubility	DMSO: 25 mg/mL (84.95 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Corn Oil: 2 mg/mL (6.8 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	3.3979 mL	16.9895 mL	33.9789 mL
5 mM	0.6796 mL	3.3979 mL	6.7958 mL
10 mM	0.3398 mL	1.6989 mL	3.3979 mL
50 mM	0.068 mL	0.3398 mL	0.6796 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

Xu L , Cao Y . Native musk and synthetic musk ketone strongly induced the growth repression and the apoptosis of cancer cells[J]. BMC Complementary and Alternative Medicine, 2016, 16(1).

Guo L , Quan Z X , Zhao Z H , et al. Effects of musk ketone on nerve recovery after spinal cord injury[J]. Genetics and molecular research: GMR, 2015, 14(2):2958-2963.