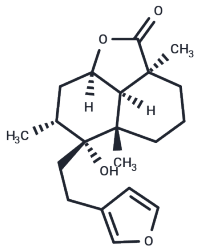
Data Sheet (Cat.No.TN1914)

TargetMol

Marrubiin

Chemical Properties



CAS No. : 465-92-9

Formula: C20H28O4

Molecular Weight: 332.43

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	Marrubiin is a natural terpenoid compound extracted from Marrubium vulgare that exhibits vasodilatory and anti-edematous effects, as well as anti-inflammatory, antioxidant, and antibacterial bioactivity.
Targets(IC50)	Others,Antioxidant
In vitro	Method: Marrubiin at various concentrations (0.0001-0.001 M) was preincubated with lipoxygenase (8000 U/mL) for 5 minutes. Sodium linoleate was then added as a substrate, and changes in absorbance were continuously monitored at 234 nm to calculate the inhibition rate. Results: Marrubiin exhibited moderate inhibitory activity against LOX (IC50 = 173 μg/mL). [1] Methods: Human umbilical vein endothelial cells (HUVECs) were pretreated with marrubiin (39 μM) for 24 hours, then stimulated with TNF-α (50 ng/mL) for 24 hours; GSH levels were measured using a glutathione assay kit. Results: Pretreatment with marrubiin significantly increased GSH levels and antagonized the depleting effect of TNF-α, indicating that marrubiin protects endothelial cells by maintaining cellular antioxidant reserves.[2]
In vivo	Methods: Inflammation was induced in C57BL/6 mice by intraperitoneal injection of carrageenan (1%, 250 μL). Marrubiin (1, 10, 20, 40 mg/kg) was administered intraperitoneally 1 hour prior to carrageenan stimulation, and the animals were sacrificed 4 hours after carrageenan stimulation. Results: Marrubiin dose-dependently reduced the total number of inflammatory cells in the exudate, significantly decreased protein content and MPO activity in the exudate, and maintained or increased GPx activity, but had no significant effect on GSH levels. [1]

Solubility Information

Solubility	DMSO: 80 mg/mL (240.65 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.0082 mL	15.0408 mL	30.0815 mL
5 mM	0.6016 mL	3.0082 mL	6.0163 mL
10 mM	0.3008 mL	1.5041 mL	3.0082 mL
50 mM	0.0602 mL	0.3008 mL	0.6016 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

Radulović NS, et al. Marrubiin Inhibits Peritoneal Inflammatory Response Induced by Carrageenan Application in C57 Mice. Int J Mol Sci. 2024;25(8):4496. Published 2024 Apr 19.
Nakhlband A, et al. Atherosclerosis preventive effects of marrubiin against (TNF-α)-induced oxidative stress and apoptosis. J Cardiovasc Thorac Res. 2023;15(3):174-180.
El Bardai S,et al. The vasorelaxant activity of marrubenol and marrubiin from Marrubium vulgare. Planta Med. 2003;69(1):75-77.
Stulzer HK, et al. Antioedematogenic effect of marrubiin obtained from Marrubium vulgare. J Ethnopharmacol. 2006;108(3):379-384.
N.Mnonopi, et al. Marrubiin, a constituent of Leonotis leonurus, alleviates diabetic symptoms. Phytomedicine. 2012 Apr.