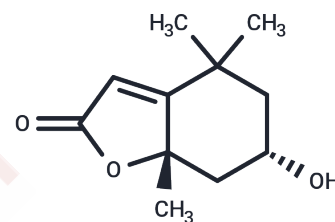


Isololiolide

Chemical Properties

CAS No. :	38274-00-9
Formula:	C ₁₁ H ₁₆ O ₃
Molecular Weight:	196.24
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	Isololiolide has phytotoxicity, it inhibited seedling growth of cress and barnyard grass. It also showed in vitro activity against both trypomastigote and intracellular amastigotes of <i>Trypanosoma cruzi</i> , with IC ₅₀ values of 32 μM and 40 μM, respectively. Isololiolide is an antioxidant response element (ARE) inducer, it has anti-inflammatory activity. It can exert a selective cytotoxic activity on hepatocarcinoma HepG2 cells as well as induce apoptosis through the modulation of apoptosis-related proteins.
In vitro	Organic agriculture emphasized using of biologically originated herbicides and phytotoxic substances are being considered as a replacement to chemical herbicides. <i>Marsilea crenata</i> is an aquatic perennial fern distributed in the South-East Asian countries and is well known for various biological properties. However, to date, there has been no report that addresses the phytotoxicity of <i>Marsilea crenata</i> . METHODS AND RESULTS: Therefore, we explored phytotoxic properties and phytotoxic substances from <i>Marsilea crenata</i> . An aqueous methanol extracts of <i>Marsilea crenata</i> showed inhibition on the seedling growth of cress, lettuce, alfalfa, barnyard grass, Italian ryegrass, and foxtail fescue. Inhibition increased with increasing extract concentration. The extract was purified by several chromatographic steps and two phytotoxic substances were isolated and identified by spectroscopic analysis as loliolide and Isololiolide. At the concentration of 30 μM, loliolide and Isololiolide inhibited seedling growth of cress and barnyard grass by 41.3 to 51.1%, and 58.15 to 87.5% of control seedlings, respectively. The concentrations required for 50% inhibition of cress and barnyard grass seedlings ranged from 32.1 to 128.5 μM for loliolide, 37.0 to 176.2 μM for Isololiolide. CONCLUSIONS: These results suggest these compounds may be responsible for phytotoxic effects of <i>Marsilea crenata</i> extract and could be an important part of organic agriculture.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	5.0958 mL	25.479 mL	50.958 mL
5 mM	1.0192 mL	5.0958 mL	10.1916 mL
10 mM	0.5096 mL	2.5479 mL	5.0958 mL
50 mM	0.1019 mL	0.5096 mL	1.0192 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

Isolation and identification of two potential phytotoxic substances from the aquatic fern *Marsilea crenata*. *Journal of Plant Biology*, 2017, 60(1):75-81.

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