

Methyl orsellinate

Chemical Properties

CAS No.:	3187-58-4
Formula:	C ₉ H ₁₀ O ₄
Molecular Weight:	182.2
Appearance:	N/A
Storage:	0-4°C for short term (days to weeks), or -20°C for long term (months).

Biological Description

Description	Methyl orsellinate is a phytotoxic compound, it exhibits antifungal activity, it can cause significant inhibition of radicle growth of <i>Amaranthus hypochondriacus</i> and <i>Echinochloa crus-galli</i> , interact with bovine-brain calmodulin and inhibit the activation of the calmodulin-dependent enzyme cAMP phosphodiesterase. Methyl orsellinate can inhibit PTP1B activity with 50% inhibitory concentration values of 277 +/- 8.6 microM, the selective inhibition of PTP1B has been widely recognized as a potential drug target for the treatment of type 2 diabetes and obesity, methyl orsellinate may can treat the type 2 diabetes and obesity.
Targets(IC ₅₀)	Antifection: None cAMP: None PTP1B: None
In vitro	<p>METHODS AND RESULTS: The orcinol derivatives tenuiorin (1) and Methyl orsellinate (2) were identified as active components of an extract from the lichen <i>Peltigera leucophlebia</i> (Nyl.) Gyeln. showing in vitro inhibitory activity against 15-lipoxygenase from soybeans. The compounds were subsequently tested for in vitro activity against 5-lipoxygenase from porcine leucocytes and proved to be moderately active, with IC₅₀ values of 41.6 microM and 59.6 microM respectively. Tenuiorin is a known constituent of several <i>Peltigera</i> species but has not previously been isolated from <i>P. leucophlebia</i>. As correlation between 5-lipoxygenase inhibition and antiproliferative effects has earlier been witnessed for related lichen metabolites, tenuiorin and Methyl orsellinate were further tested for antiproliferative activity on cultured human breast (T-47D)-, pancreatic (PANC-1)- and colon (WIDR) cancer cell lines. CONCLUSIONS: The monomeric Methyl orsellinate exhibited no detectable antiproliferative activity whereas the trimeric tenuiorin caused moderate/weak reduction in [3H]-thymidine uptake of the pancreatic- and colon cancer cells, with ED₅₀ values of 87.9 and 98.3 microM respectively.</p>

Solubility Information

Solubility	< 1 mg/ml refers to the product slightly soluble or insoluble
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	5.488 mL	27.442 mL	54.885 mL
5 mM	1.098 mL	5.488 mL	10.977 mL
10 mM	0.549 mL	2.744 mL	5.488 mL
50 mM	0.110 mL	0.549 mL	1.098 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. The storage conditions and period of the stock solution: - 80 °C for 6 months; - 20 °C for 1 month. Please use it as soon as possible.

Reference

1. Effects of tenuiorin and methyl orsellinate from the lichen *Peltigera leucophlebia* on 5-/15-lipoxygenases and proliferation of malignant cell lines in vitro. *Phytomedicine*. 2002 Oct;9(7):654-8.
2. Phytotoxic compounds from *Flourensia cernua*. *Phytochemistry*. 2003 Sep;64(1):285-91.
3. Two new antifungal metabolites produced by *Sparassis crispa* in culture and in decayed trees. *J. Gen.Microbiol.*,1993,139(1):153-9.

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Tel:781-999-4286

E-mail:info@targetmol.com

Address:36 Washington Street,Wellesley Hills,MA 02481