

Coniferaldehyde

Chemical Properties

CAS No.:	20649-42-7
Formula:	C ₁₀ H ₁₀ O ₃
Molecular Weight:	178.2
Appearance:	N/A
Storage:	0-4°C for short term (days to weeks), or -20°C for long term (months).

Biological Description

Description	Coniferaldehyde exerts anti-inflammatory properties by inducing heme oxygenase-1 (HO-1), it inhibits LPS-induced apoptosis through the PKC α/β II/Nrf-2/HO-1 dependent pathway in RAW264.7 macrophage cells. Coniferaldehyde can significantly inhibit the growth of viability of strains of <i>Oenococcus oeni</i> .
Targets(IC ₅₀)	COX: None HO-1: None NOS: None Nrf2: None PKC: None
In vitro	The barks of <i>Eucommia ulmoides</i> (Eucommiae Cortex, Eucommiaceae) have been used as a traditional medicine in Korea, Japan, and China to treat hypertension, reinforce the muscles and bones, and recover the damaged liver and kidney functions. METHODS AND RESULTS: Among these traditional uses, to establish the recovery effects on the damaged organs on the basis of phytochemistry, the barks of <i>E. ulmoides</i> have been investigated to afford three known phenolic compounds, Coniferaldehyde glucoside (1), bartsioside (2), and feretoside (3), which were found in the family Eucommiaceae for the first time. The compounds 1-3 were evaluated for their inducible activities on the heat shock factor 1 (HSF1), and heat shock proteins (HSPs) 27 and 70, along with four compounds, geniposide (4), geniposidic acid (5), pinorensinol diglucoside (6), and liriiodendrin (7), which were previously reported from <i>E. ulmoides</i> . CONCLUSIONS: Compounds 1-7 increased expression of HSF1 by a factor of 1.214, 1.144, 1.153, 1.114, 1.159, 1.041, and 1.167 at 38.197 μ M, respectively. Coniferaldehyde glucoside (1) showed the most effective increase of HSF1 and induced successive expressions of HSP27 and HSP70 in a dose-dependent manner without cellular cytotoxicity, suggesting a possible application as a HSP inducer to act as cytoprotective agent.

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	5.612 mL	28.058 mL	56.117 mL
5 mM	1.122 mL	5.612 mL	11.223 mL
10 mM	0.561 mL	2.806 mL	5.612 mL
50 mM	0.112 mL	0.561 mL	1.122 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. Heat shock factor 1 inducers from the bark of *Eucommia ulmoides* as cytoprotective agents. *Chem Biodivers*. 2013 Jul;10(7):1322-7.
2. Effect of phenolic aldehydes and flavonoids on growth and inactivation of *Oenococcus oeni* and *Lactobacillus hilgardii*. *Food Microbiol*. 2008 Feb;25(1):105-12.

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