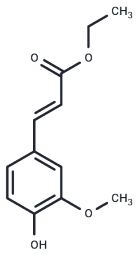
Data Sheet (Cat.No.TN6422)

TargetMol

Ethyl (E)-ferulate

Chemical Properties



CAS No. : 28028-62-8

Formula: C12H14O4

Molecular Weight: 222.24

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	Ethyl ferulate could be used for therapeutic purposes as a potent inducer of HO-1 for the protection of brain cells against oxidative and neurodegenerative conditions.
Targets(IC50)	Nrf2,AMPK
In vitro	In the CNS, the heme oxygenase (HO) system has been reported to be active and to operate as a fundamental defensive mechanism for neurons exposed to an oxidant challenge. We have recently shown that both curcumin and caffeic acid phenethyl ester, two phenolic natural compounds, potently induce HO-1 expression and activity in rat astrocytes. We have extended our previous findings examining the effects of two other plant-derived phenolic compounds, with analogous chemical structures, in rat astrocytes and neurons. METHODS AND RESULTS: Ethyl ferulate (Ethyl (E)-ferulate, ethyl 4-hydroxy-3-methoxycinnamate) (EFE), the naturally occurring ester of ferulic acid, was able to induce HO-1 protein expression. Maximal expression of HO-1 mRNA and protein and a significant increase in HO activity were detected after 6 h of incubation with 15 microM EFE in astrocytes and 5 microM EFE in neurons. Higher concentrations of EFE (50 microM) caused a substantial cytotoxic effect with no change in HO-1 protein expression and activity. Exposure of astrocytes to resveratrol, a phytoalexin derived from grapes, resulted in an increase of HO-1 mRNA, but it was not able to induce HO-1 protein expression and activity. Interestingly, preincubation (12 h) of neurons with EFE resulted in an enhanced cellular resistance to glucose oxidase-mediated oxidative damage; this cytoprotective effect was considerably attenuated by zinc protoporphyrin IX, an inhibitor of HO activity. CONCLUSIONS: This study identifies a novel natural compound that could be used for therapeutic purposes as a potent inducer of HO-1 for the protection of brain cells against oxidative and neurodegenerative conditions.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.4996 mL	22.4982 mL	44.9964 mL
5 mM	0.8999 mL	4.4996 mL	8.9993 mL
10 mM	0.450 mL	2.2498 mL	4.4996 mL
50 mM	0.090 mL	0.450 mL	0.8999 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

Solvent-free enzymatic transesterification of ethyl ferulate and monostearin: Optimized by response surface methodology. Journal of Biotechnology, 2013, 164(2):340-345.