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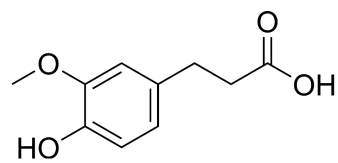
Product Data Sheet

Inhibitors • Screening Libraries • Proteins

Dihydroferulic acid

Cat. No.:	HY-N7080
CAS No.:	1135-23-5
Molecular Formula:	$C_{10}H_{12}O_4$
Molecular Weight:	196.2
Target:	Others
Pathway:	Others
Storage:	Powder -20°C 3 years; 4°C 2 years; In solvent -80°C 2 years; -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

H_2O : 100 mg/mL (509.68 mM; Need ultrasonic)
DMSO : 100 mg/mL (509.68 mM; Need ultrasonic)

Preparing Stock Solutions	Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
	1 mM	5.0968 mL	25.4842 mL	50.9684 mL
	5 mM	1.0194 mL	5.0968 mL	10.1937 mL
	10 mM	0.5097 mL	2.5484 mL	5.0968 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 10 mg/mL (50.97 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (12.74 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (12.74 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (12.74 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Dihydroferulic acid (Hydroferulic acid) is one of the main metabolites of curcumin and antioxidant/radical-scavenging properties with an IC_{50} value of 19.5 μM. Dihydroferulic acid is a metabolite of human gut microflora as well as a precursor of vanillic acid[1][2].

In Vitro	Uptake of hydroxycinnamic acids by control, organic anion transporter 1 (OAT1), OAT2, OAT3, and OAT4 over expressing 293H cells. In 293H control cells, there was significant uptake of Dihydroferulic acid. The uptake of Dihydroferulic acid is also enhanced ~2-fold in the OAT1-expressing cells[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Assessing the influence of an 11 weeks intervention with a resistant starch-enriched whole grain diet (HI-RS-WG, 25% RS) compared to a WG control diet (LOW-RS-WG, 6.9% RS) on serum profile of polyphenols (PPs) in 20 Zucker Diabetic Fatty rats. Five PPs were identified and quantified in serum samples of rats belonging to both intervention groups. HI-RS-WG rats had 2.6 folds higher serum concentrations of total PPs than LOW-RS-WG rats. An explorative data reduction approach, based on the Principal Component Analysis identified two principal components related to the gut microbiota fermentation and food intake, respectively. Results showed that the abundance of hippuric acid and Dihydroferulic acid in HI-RS-WG rats was explained by the stronger gut microbiota fermentation in those rats than in LOW-RS-WG rats[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Deters M, et al. Different curcuminoids inhibit T-lymphocyte proliferation independently of their radical scavenging activities. Pharm Res. 2008 Aug;25(8):1822-7.

[2]. Paola Vitaglionea, et al. Gut fermentation induced by a resistant starch rich whole grain diet explains serum concentration of dihydroferulic acid and hippuric acid in a model of ZDF rats. Journal of Functional Foods. 53 (2019): 286-291.

[3]. Wong CC, et al. Interaction of hydroxycinnamic acids and their conjugates with organic anion transporters and ATP-binding cassette transporters. Mol Nutr Food Res. 2011 Jul;55(7):979-88.

[4]. Beck JJ, et al. Fungicidal activities of dihydroferulic acid alkyl ester analogues. J Nat Prod. 2007 May;70(5):779-82.

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