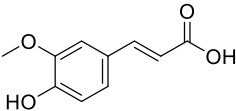


Product data sheet



MedKoo Cat#: 531023 Name: Ferulic Acid CAS#: 1135-24-6 Chemical Formula: C ₁₀ H ₁₀ O ₄ Exact Mass: 194.0579 Molecular Weight: 194.186		
Product supplied as:	Powder	
Purity (by HPLC):	≥ 98%	
Shipping conditions	Ambient temperature	
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.	
	In solvent: -80°C 3 months; -20°C 2 weeks.	

1. Product description:

Ferulic Acid is a fibroblast growth factor receptor 1 (FGFR1) inhibitor that has antioxidant, anti-inflammatory and anticancer properties. Ferulic acid increased monoamine neurotransmitter levels in the brain regions that are relative to mood disorders: the hippocampus and frontal cortex. The increased tend to serotonin and norepinephrine was also found in the hypothalamus after higher dose of ferulic acid treatment. Monoamine oxidase A (MAO-A) activity was inhibited in the frontal cortex and hippocampus when treatment with 40 and 80 mg/kg ferulic acid; while MAO-B activity did not change significantly. Ferulic acid provides neuroprotective effects against a middle cerebral artery occlusion (MCAO)-induced cerebral ischemia.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	51.33	264.33
DMF	20.0	102.99
DMF:PBS (pH 7.2) (1:6)	0.14	0.72
Ethanol	24.5	126.17

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	5.15 mL	25.75 mL	51.50 mL
5 mM	1.03 mL	5.15 mL	10.30 mL
10 mM	0.51 mL	2.57 mL	5.15 mL
50 mM	0.10 mL	0.51 mL	1.03 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Liu M, Zhang C, Xu X, Zhao X, Han Z, Liu D, Bo R, Li J, Liu Z. Ferulic acid inhibits LPS-induced apoptosis in bovine mammary epithelial cells by regulating the NF-κB and Nrf2 signalling pathways to restore mitochondrial dynamics and ROS generation. *Vet Res.* 2021 Jul 13;52(1):104. doi: 10.1186/s13567-021-00973-3. PMID: 34256834; PMCID: PMC8278735.
2. Du K, Fang X, Li Z. Ferulic acid suppresses interleukin-1β-induced degeneration of chondrocytes isolated from patients with osteoarthritis through the SIRT1/AMPK/PGC-1α signaling pathway. *Immun Inflamm Dis.* 2021 Sep;9(3):710-720. doi: 10.1002/iid3.424. Epub 2021 Jun 2. PMID: 34078001.

In vivo study

Product data sheet



1. Wei Z, Xue Y, Xue Y, Cheng J, Lv G, Chu L, Ma Z, Guan S. Ferulic acid attenuates non-alcoholic steatohepatitis by reducing oxidative stress and inflammation through inhibition of the ROCK/NF- κ B signaling pathways. J Pharmacol Sci. 2021 Sep;147(1):72-80. doi: 10.1016/j.jphs.2021.05.006. Epub 2021 May 24. PMID: 34294375.
2. Cao L, Li Z, Yang Z, Wang M, Zhang W, Ren Y, Li L, Hu J, Sun Z, Nie S. Ferulic acid positively modulates the inflammatory response to septic liver injury through the GSK-3 β /NF- κ B/CREB pathway. Life Sci. 2021 Jul 15;277:119584. doi: 10.1016/j.lfs.2021.119584. Epub 2021 May 4. PMID: 33961853.

7. Bioactivity

Biological target:

Ferulic acid is a novel fibroblast growth factor receptor 1 (FGFR1) inhibitor with IC50s of 3.78 and 12.5 μ M for FGFR1 and FGFR2, respectively.

In vitro activity

The cell apoptosis rate and inflammatory cytokine release were examined using flow cytometry and RT-qPCR, respectively, to investigate the protective effect of FA (ferulic acid) on LPS-induced inflammatory injury in BMECs. As shown in Figure 2A, LPS-induced apoptosis of BMECs was obviously inhibited by FA in a dose-dependent manner.

Reference: Vet Res. 2021; 52: 104. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8278735/>

In vivo activity

Compared with the NASH group, the liver coefficient of the NASH + FA group was significantly reduced ($P < 0.05$). 20 mg/kg of FA (ferulic acid) significantly reduced the activity of ALT and AST in the serum of the HCHF-induced NASH rats (Fig. 1D and E). These results indicate that 20 mg/kg FA reduced early liver damage caused by the HCHF diet without significantly affecting body weight.

Reference: J Pharmacol Sci. 2021 Sep;147(1):72-80. <https://pubmed.ncbi.nlm.nih.gov/34294375/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.