

ETHYL CAFFEATE

Chemical Properties

CAS No. :	102-37-4
Formula:	C ₁₁ H ₁₂ O ₄
Molecular Weight:	208.211
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 Caffeate (ETHYL 3,4-DIHYDROXYCINNAMATE) suppressed the differentiation of naive CD4+ T cells into Th1 in vitro. Furthermore, Ethyl Caffeate intensely blocked the transcriptional expression in interferon- γ -related signaling, including IFN- γ , T-bet, STAT1, and STAT4.
Targets(IC50)	NF- κ B,NO Synthase,COX,PGE Synthase
In vitro	In vivo, ETHYL CAFFEATE(ECF) treatment reduced the severity of collagen-induced arthritis (CIA), inhibited IFN- γ and IL-6 secretion, and decreased the proportion of CD11b+Gr-1+ splenic neutrophil. Meanwhile, ECF treatment significantly inhibited the IFN- γ expression in CD4+T cell without obviously influencing the development of Th17 cells and T regulatory cells.
In vivo	Shikui X , Aixue Z , Zengjun G , et al. Ethyl Caffeate Ameliorates Collagen-Induced Arthritis by Suppressing Th1 Immune Response[J]. Journal of Immunology Research, 2017, 2017:1-11.
Kinase Assay	The proliferation of splenocytes or T cells in response to ConA, LPS, and anti-CD3/28 was measured by CCK-8 Kit. Briefly, BALB/c splenocyte suspension (5 \times 10 ⁵ cells/well) was cultured with ConA (5 μ g/ml), LPS (10 μ g/ml), and anti-CD3 (5 μ g/ml; 145-2C11) in the presence of ECF at indicated concentrations. The cultures were incubated for 48h, 20 μ l of CCK-8 was then added to each well before the end of culture, and OD value was read at 450nm. The MTT method was used to measure the cytotoxicity of the sample. Splenocytes (5 \times 10 ⁵ cells/well) were cultured in triplicates in the absence or presence of ECF in a 96-well flat-bottomed plate (Costar) for 48h. MTT (5mg/ml) was pulsed for 4h prior to the end of the culture. Upon removal of MTT/medium, 150 μ l of DMSO was added to each well, and the plate was agitated on an oscillator for 5min to dissolve the precipitate. The assay plate was read at 570nm using a microplate reader.
Cell Research	Collagen was dissolved in 0.1 M acetic acid at 4°C overnight. Male DBA/1 mice were immunized at the tail base with 125 μ g of collagen emulsified in complete Freund's adjuvant (CFA) containing Mycobacterium tuberculosis strain H37Rv. Each mouse was then boosted with the same amount of collagen plus CFA 21 days later (taken as day 0). Starting from day 9 for 10 consecutive days, the mice were administered daily with ECF (50mg/kg) or methotrexate (2mg/kg)

Solubility Information

Solubility	DMSO: 250.00 mg/mL (1200.71 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 10.00 mg/mL (48.03 mM),Solution. 10% DMSO+90% Saline: < 10 mg/mL (48.03 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.8028 mL	24.0142 mL	48.0284 mL
5 mM	0.9606 mL	4.8028 mL	9.6057 mL
10 mM	0.4803 mL	2.4014 mL	4.8028 mL
50 mM	0.0961 mL	0.4803 mL	0.9606 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

Shikui X , Aixue Z , Zengjun G , et al. Ethyl Caffeate Ameliorates Collagen-Induced Arthritis by Suppressing Th1 Immune Response[J]. Journal of Immunology Research, 2017, 2017:1-11.

Chen Z, Yuan Y, Yang D, et al. Antiviral activities of Polygonum Perfoliatum L. extract and related phenolic acid constituents against hepatitis B virus. Journal of Medical Virology. 2022

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