
Product Data Sheet

Product Name: 1,5-Dicaffeoylquinic acid
 Cat. No.: GN10728

Chemical Properties

Cas. No. 30964-13-7

Chemical Name (1S,3R,4R,5R)-1,3-bis[[[(E)-3-(3,4-dihydroxyphenyl)prop-2-enoyl]oxy]-4,5-dihydroxycyclohexane-1-carboxylic acid

SMILES C1C(C(C(CC1(C(=O)O)OC(=O)C=CC2=CC(=C(C=C2)O)O)OC(=O)C=CC3=CC(=C(C=C3)O)O)O)O

Formula C₂₅H₂₄O₁₂

M.Wt 516.46

Solubility DMF: 71 mg/ml, DMSO: 50 mg/ml, Ethanol: 50 mg/ml, PBS (pH 7.2): 25 mg/ml

Storage Store at 2-8°C, protect from light

General For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure

Protocol**Cell experiment:**

The cytotoxicity of cynarin treatment of T-cells is measured by MTT colorimetric assay. 100 µL Jurkat cells are incubated with cynarin (0-1000 µg/mL) for 24 h at 37°C. The cell solution is then centrifuged and the supernatant removed. 200 µL of MTT is added and the cell solution is incubated again for 4 h at 37°C. 200 µL of DMSO lysis buffer is added into the cell medium and the concentration of dissolved MTT crystals is measured by plate reader at 560 nm[2].

Caution: Product has not been fully validated for medical applications. For research use only.

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Address: 10292 Central Ave. #205, Montclair, CA, USA

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References:

- [1]. Topal M, et al. Antioxidant, antiradical, and anticholinergic properties of cynarin purified from the Illyrian thistle (Onopordum illyricum L.). J Enzyme Inhib Med Chem. 2016;31(2):266-75.
- [2]. Dong GC, et al. Blocking effect of an immuno-suppressive agent, cynarin, on CD28 of T-cell receptor. Pharm Res. 2009 Feb;26(2):375-81.

Background

Cynarin is an antichoke agent with a variety of biological activities including antioxidant, antihistamic and antiviral activities.

Cynarin inhibits taste receptors, making water to be sweet. It has been shown to have some pharmacological properties including hypocholesterolemic, hepatoprotective, antiviral, antibacterial, and antihistamic effects. Cynarin has marked antioxidant, anticholinergic, reducing ability, radical-scavenging, and metal-binding activities. Cynarin demonstrates 87.72% inhibition of linoleic acid lipid peroxidation at 30 mg/mL concentration. Cynarin exhibits effective DMPD+, ABTS+, O₂⁻, DPPH1, and H₂O₂ scavenging effects, reducing capabilities and Fe²⁺ chelating effects. IC₅₀ and K_i of cynarin for acetylcholinesterase enzyme inhibition are 243.67nM and 39.34±13.88 nM, respectively[1]. Cynarin is a potential immunosuppressant that blocks the interaction between the CD28 of T-cell receptor and CD80 of antigen presenting cells. Cynarin blocks about 87% of the CD28-dependent "signal 2" pathway of T-cell activation under the condition of one to one ratio of T-cell and B-cell. Cynarin binds to the "G-pocket" of CD28 and thus interrupts the site of interaction between CD28 and CD80[2].

References:

- [1]. Topal M, et al. Antioxidant, antiradical, and anticholinergic properties of cynarin purified from the Illyrian thistle (Onopordum illyricum L.). J Enzyme Inhib Med Chem. 2016;31(2):266-75.
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