Cynarin

Cat. No.: HY-N0359

CAS No.: 30964-13-7

Molecular Formula: $C_{25}H_{24}O_{12}$

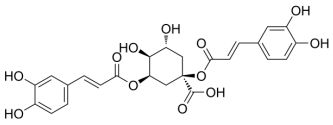
Molecular Weight: 516.45

Target: Reactive Oxygen Species; Influenza Virus

Pathway: Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB; Anti-infection

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 250 mg/mL (484.07 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.9363 mL	9.6815 mL	19.3630 mL
	5 mM	0.3873 mL	1.9363 mL	3.8726 mL
	10 mM	0.1936 mL	0.9681 mL	1.9363 mL

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

BIOLOGICAL ACTIVITY

Description

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

In Vitro

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 $DMPD^+$, $ABTS^+$, O_2^-, $DPPH^1$, and H_2O_2 scavenging effects, reducing capabilities and Fe^{2+} chelating effects. IC_{50} 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].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [2]

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].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Anim Cells Syst. 20 May 2022.

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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.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA