L-Chicoric Acid

Cat. No.: HY-N0457A

CAS No.: 70831-56-0

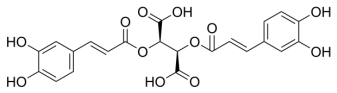
Molecular Formula: $C_{22}H_{18}O_{12}$

Molecular Weight: 474.37

Target: HIV Integrase; HIV; Endogenous Metabolite

Pathway: Metabolic Enzyme/Protease; Anti-infection

Storage: -20°C, stored under nitrogen
* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



Rotation(-)

SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (210.81 mM; Need ultrasonic)
H_2O : 3.33 mg/mL (7.02 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.1081 mL	10.5403 mL	21.0806 mL
5 mM	0.4216 mL	2.1081 mL	4.2161 mL
10 mM	0.2108 mL	1.0540 mL	2.1081 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (5.27 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (5.27 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.27 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

L-Chicoric Acid ((-)-Chicoric acid) is a dicaffeoyltartaric acid and a potent, selective and reversible HIV-1 integrase inhibitor with an IC_{50} of ~100 nM. L-Chicoric Acid inhibits HIV-1 replication in tissue culture[1][2][3].

IC_{50} & Target

HIV-1

In Vitro

L-Chicoric Acid inhibits integration at concentrations from 500 nM to 10 μM but also inhibits entry at concentrations above 1 μM. L-Chicoric Acid clearly affects viral entry at concentrations of 5 μM and higher. L-Chicoric Acid also inhibits integration as indicated both by an increased ratio of two LTR circle DNA to cDNA and an accompanying decrease in integrated provirus.

The EC_{50} of L-Chicoric Acid against HIV is approximately 500 nM, a concentration that does not inhibit HIV entry in H9 cells[1]. The ED_{50} of L-Chicoric Acid against HIV_{NL4-3} control virus is 400 nM, while HIV_{NL4-3} passaged in the presence of 8 μM L-Chicoric Acid is completely resistant to the compound[2].

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

CUSTOMER VALIDATION

- Biomed Pharmacother. 2019 Oct;118:109144.

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REFERENCES

[1]. Reinke RA, et al. L-chicoric acid inhibits human immunodeficiency virus type 1 integration in vivo and is a noncompetitive but reversible inhibitor of HIV-1 integrase in vitro. Virology. 2004 Sep 1;326(2):203-19.

[2]. King PJ, et al. Resistance to the anti-human immunodeficiency virus type 1 compound L-chicoric acid results from a single mutation at amino acid 140 of integrase. J Virol. 1998 Oct;72(10):8420-4.

[3]. Robinson WE Jr. L-chicoric acid, an inhibitor of human immunodeficiency virus type 1 (HIV-1) integrase, improves on the in vitro anti-HIV-1 effect of a protease inhibitor (AG1350). Antiviral Res. 1998 Aug;39(2):101-11.

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