Limonin

Cat. No.: HY-17411

CAS No.: 1180-71-8

Molecular Formula: $C_{26}H_{30}O_8$

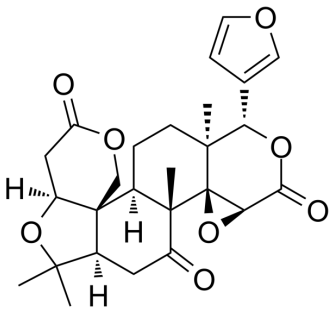
Molecular Weight: 470.51

Target: HIV; Apoptosis; Endogenous Metabolite; Cytochrome P450; P-glycoprotein

Pathway: Anti-infection; Apoptosis; Metabolic Enzyme/Protease; Membrane Transporter/Ion Channel

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 41.67 mg/mL (88.56 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.1254 mL	10.6268 mL	21.2535 mL
	5 mM	0.4251 mL	2.1254 mL	4.2507 mL
	10 mM	0.2125 mL	1.0627 mL	2.1254 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (4.42 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (4.42 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Limonin inhibits HIV-1 with an EC_{50} of 60.0 μM. Limonin induces human colon adenocarcinoma cells apoptosis with an IC_{50} of 54.74 μM. Limonin has antiviral and antitumor activities[1][2][4].

IC_{50} & Target

HIV-1

In Vitro

Limonin (100 μM) exhibits cytotoxic effect and inhibits SW480 cells proliferation [2].
Limonin (40 μM) inhibits HIV-1 protease in PBMC of HIV-1 infected patients[4].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[2]

Cell Line:	SW480 cells
Concentration:	25, 50, 75, 100 μM
Incubation Time:	4, 6 days
Result:	Inhibited cell proliferation by 89% at 4 days with 100 μM. Inhibited cell proliferation by 75% at 6 days with 100 μM.

CUSTOMER VALIDATION

- Biomed Pharmacother. 2020 Nov;131:110541.
- Br J Pharmacol. 2022 Jun 21.
- Int Immunopharmacol. 2023 Jul 21;122:110678.
- Front Cell Dev Biol. 2021 Jun 11;9:684393.
- J Pharm Pharmacol. 2023 Feb 28;rgac094.

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REFERENCES

[1]. Han YL, Yu HL, Li D, et al. Inhibitory effects of limonin on six human cytochrome P450 enzymes and P-glycoprotein in vitro. Toxicol In Vitro. 2011 Dec;25(8):1828-33.

[2]. Kotamballi N. Chidambara Murthy, Jayaprakasha, Vinod Kumar, et al. Citrus Limonin and Its Glucoside Inhibit Colon Adenocarcinoma Cell Proliferation through Apoptosis. J. Agric. Food Chem., 2011, 59 (6):2314-2323.

[3]. Mahmoud Zaki El-Readi, Dalia Hamdana, Nawal Farrag, et al. Inhibition of P-glycoprotein activity by limonin and other secondary metabolites from Citrus species in human colon and leukaemia cell lines. European Journal of Pharmacology. 2010,626 (2-3): 139-145.

[4]. Battinelli L, Mengoni F, Lichtner M, et al. Effect of limonin and nomilin on HIV-1 replication on infected human mononuclear cells. Planta Med. 2003 Oct;69(10):910-3.

[5]. Tanaka T, Kohno H, Tsukio Y, et al. Citrus limonoids obacunone and limonin inhibit azoxymethane-induced colon carcinogenesis in rats. Biofactors. 2000;13(1-4):213-8.

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