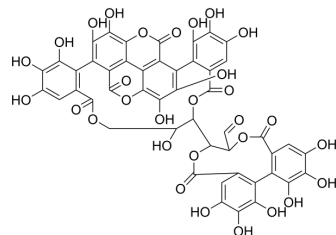


Punicalagin

Cat. No.:	HY-N0063
CAS No.:	65995-63-3
Molecular Formula:	C ₄₈ H ₂₈ O ₃₀
Molecular Weight:	1084.72
Target:	HBV; SARS-CoV
Pathway:	Anti-infection
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro	H ₂ O : 100 mg/mL (92.19 mM; Need ultrasonic)					
	DMSO : 50 mg/mL (46.09 mM; Need ultrasonic)					
	Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg
			1 mM	0.9219 mL	4.6095 mL	9.2190 mL
			5 mM	0.1844 mL	0.9219 mL	1.8438 mL
10 mM			0.0922 mL	0.4609 mL	0.9219 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: ≥ 2.17 mg/mL (2.00 mM); Clear solution					
	2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.17 mg/mL (2.00 mM); Clear solution					

BIOLOGICAL ACTIVITY

Description	Punicalagin is a polyphenol ingredient isolated from Pomegranate (<i>Punica granatum</i> L.) or the leaves of <i>Terminalia catappa</i> L.. Punicalagin is a reversible and non-competitive 3CL ^{PRO} inhibitor and inhibits SARS-CoV-2 replication in vitro. Punicalagin is an anti-hepatitis B virus (HBV) agent and has antioxidant, anti-inflammatory, and anticancer effects. Punicalagin has the potential for the research of COVID-19 ^{[1][2][3]} .
In Vitro	Punicalagin (100 mg/ml) induces apoptosis in HT-29, HCT116 colon cells ^[1] . Punicalagin slightly inhibits the PL ^{PRO} activity with an IC ₅₀ of over 50 μM. Punicalagin inhibits the plaque formation of SARS-CoV-2 in a dose-dependent manner, with EC ₅₀ values of 7.20 μM ^[4] . Punicalagin binds at an allosteric site in the dimer interface. Punicalagin inhibit SARS-CoV-2 replication by a mechanism other than preventing S-mediated viral entry ^[4] .

	MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Punicalagin (10 mg/kg) inhibits the edema rate of 58.15% in rats ^[2] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Antioxid Redox Signal. 2021 Apr 28.
- Antivir Res. 2021, 105075.
- J Chromatogr A. 24 December 2021, 462784.
- BMC Complement Med Ther. 2024 Feb 16;24(1):93.
- Exp Cell Res. 2023 Jul 8;113717.

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- [1]. Seeram NP, et al. In vitro antiproliferative, apoptotic and antioxidant activities of punicalagin, ellagic acid and a total pomegranate tannin extract are enhanced in combination with other polyphenols as found in pomegranate juice. J Nutr Biochem. 2005 Jun;16(6):360-7.
- [2]. Lin CC, et al. Effects of punicalagin and punicalin on carrageenan-induced inflammation in rats. Am J Chin Med. 1999;27(3-4):371-6.
- [3]. Liu C, et al. Identification of hydrolyzable tannins (punicalagin, punicalin and geraniin) as novel inhibitors of hepatitis B virus covalently closed circular DNA. Antiviral Res. 2016 Oct;134:97-107.
- [4]. Ruikun Du, et al. Discovery of Chebulagic Acid and Punicalagin as Novel Allosteric Inhibitors of SARS-CoV-2 3CLpro. Antivir Res. 2021, 105075.

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

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