Sennoside A

Cat. No.: HY-N0365

CAS No.: 81-27-6

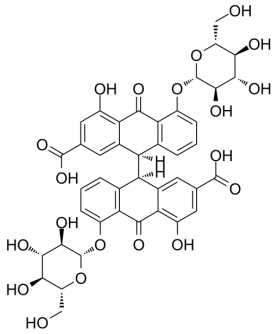
Molecular Formula: $C_{42}H_{38}O_{20}$

Molecular Weight: 862.74

Target: HIV

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

DMSO : 125 mg/mL (144.89 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.1591 mL	5.7955 mL	11.5910 mL
	5 mM	0.2318 mL	1.1591 mL	2.3182 mL
	10 mM	0.1159 mL	0.5795 mL	1.1591 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: 6.25 mg/mL (7.24 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (2.41 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Sennoside A is an anthraquinone glycoside found in senna (Cassia angustifolia). Sennoside A is an HIV-1 inhibitor (IC_{50}=3.8 μM) that inhibits HIV-1 replication. Sennoside A also inhibits HIV-1 reverse transcriptase (RT)-related DNA polymerase (RDDP) and ribonuclease H (Ribonuclease H) with IC_{50}s of 1.9 μM and 5.3 μM, respectively[1][2][3][4].

IC_{50} & Target

HIV-1

In Vitro

Sennoside A inhibits different variants of RDDP and RNase H. Inhibits different variants of RDDP with IC50s of 78 μM (K103N RT), 21.3 μM (Y181C RT), and 64 μM (Y188L RT), respectively. Inhibits different variants of RNase H with IC50s of 18.4 μM (N474A RT) and 17.7 μM (Q475A RT), respectively[3].
Infects Jurka cells with HIV-1 recombinant CAT virus, which is pseudotyped with the envelope glycoprotein from the HXBc2 laboratory-adapted T-tropic virus. Sennoside A (5-20 μM; 72 h) significantly inhibits CAT activity in infected cell[3].

	MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Sennoside A (25 mg/kg, 50 mg/kg; intragastric gavage for 12 weeks) alters the gut microbiome composition of type 2 diabetes (T2D) mice and mediates anti-obesity effects[3]. Sennoside A also reduces inflammation and increases tight junction proteins in the ileum of genetically defective mice[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Int Immunopharmacol. 2023 Jul, 120, 110290.

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REFERENCES

[1]. Rama Reddy NR, et al. Next Generation Sequencing and Transcriptome Analysis Predicts Biosynthetic Pathway of Sennosides from Senna (Cassia angustifolia Vahl.), a Non-Model Plant with Potent Laxative Properties. PLoS One. 2015 Jun 22;10(6):e0129422.

[2]. Esposito F, et al. Sennoside A, derived from the traditional chinese medicine plant Rheum L., is a new dual HIV-1 inhibitor effective on HIV-1 replication. Phytomedicine. 2016 Nov 15;23(12):1383-1391.

[3]. Esposito F, et al. Sennoside A, derived from the traditional chinese medicine plant Rheum L., is a new dual HIV-1 inhibitor effective on HIV-1 replication. Phytomedicine. 2016 Nov 15;23(12):1383-1391.

[4]. Wei Z, et al. Gut Bacteria Selectively Altered by Sennoside A Alleviate Type 2 Diabetes and Obesity Traits. Oxid Med Cell Longev. 2020 Jun 25;2020:2375676.

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