Stachyose tetrahydrate

Cat. No.: HY-113529

CAS No.: 10094-58-3

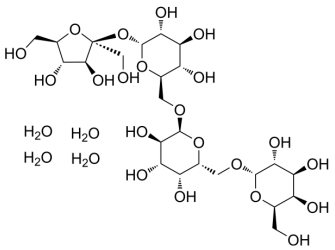
Molecular Formula: $C_{24}H_{50}O_{25}$

Molecular Weight: 738.64

Target: Apoptosis; Endogenous Metabolite

Pathway: Apoptosis; Metabolic Enzyme/Protease

Storage: 4°C, sealed storage, away from moisture and light
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 250 mg/mL (338.46 mM; Need ultrasonic)
H_2O : 100 mg/mL (135.38 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.3538 mL	6.7692 mL	13.5384 mL
	5 mM	0.2708 mL	1.3538 mL	2.7077 mL
	10 mM	0.1354 mL	0.6769 mL	1.3538 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (135.38 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (2.82 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (2.82 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (2.82 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Stachyose tetrahydrate, a functional oligosaccharide, acts as a prebiotic. Stachyose tetrahydrate can prevent indirectly colon cancer cell growth by promoting the proliferation of probiotics or producing beneficial materials in the intestine[1][2].

IC_{50} & Target		
	Human Endogenous Metabolite	Human Endogenous Metabolite

In Vitro	Stachyose tetrahydrate inhibits Caco-2 cell proliferation and induces apoptosis in a dose-dependent manner[1]. Stachyose highly promotes proliferation of lactic acid bacteria (LAB) by inducing LAB to produce more α-galactosidase to hydrolyze stachyose[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Animal Administration [1]	Mice[1] Male Kunming mice in each group (n=8) are administered by intragastric gavage with saline, stachyose (250 mg/kg bw), genistein (100 mg/kg bw), and stachyose (50, 250, and 500 mg/kg bw) together with genistein (100 mg/kg bw) for 4 consecutive weeks, respectively, and then their urine, feces, blood, gut, and liver are collected[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Huang G, et al. Stachyose-induced apoptosis of Caco-2 cells via the caspase-dependent mitochondrial pathway. Food Funct. 2015;6(3):765-771.

[2]. Pan Q, et al. The Proliferation Mechanism of Lactobacillus plantarum RB1 Stimulated by Stachyose. Curr Microbiol. 2017 Jun;74(6):732-738.

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

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