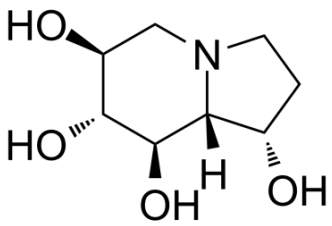
Castanospermine

Cat. No.:	HY-N2022
CAS No.:	79831-76-8
Molecular Formula:	$C_8H_{15}NO_4$
Molecular Weight:	189.21
Target:	Glucosidase
Pathway:	Metabolic Enzyme/Protease
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

H_2O : 100 mg/mL (528.51 mM; Need ultrasonic)
DMSO : 100 mg/mL (528.51 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	5.2851 mL	26.4257 mL	52.8513 mL
5 mM	1.0570 mL	5.2851 mL	10.5703 mL
10 mM	0.5285 mL	2.6426 mL	5.2851 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 (13.21 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (13.21 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (13.21 mM); Clear solution
4. Add each solvent one by one: PBS
   Solubility: 120 mg/mL (634.22 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Castanospermine inhibits all forms of α- and β-glucosidases, especially glucosidase l (required for glucoprotein processing by transfer of mannose and glucose from asparagine-linked lipids).target⊠α- and β-glucosidases.IC 50: 1.2 uM [2] in vitro :Castanospermine, [(1 S,6S,7R,8R,8aR)-1 ,6,7,8-tetrahydroxyoctahydroindolizine]is a potent and specific inhibitor of mammalian and plant α-and β-D-glucosidases in vitro [1] in vivo: Experiments in vivo with castanospermine, an inhibitor of

the glucosidases that convert protein N-linked high mannose carbohydrates to complex oligosaccharides, resulted in significant inhibition of tumor growth in nude mice.[3]

CUSTOMER VALIDATION

- Glycobiology. 2020 Sep 26;cwaa091.

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REFERENCES

[1]. Bryan G, Anthony C et al. The structural basis of the inhibition of human glycosidases bycastanospermine analogues. Biochem. J. (1990) 269, 227-231.

[2]. Eisaku Tsujii et al. Nectrisine Is a Potent Inhibitor of a-Glucosidases, DemonstratingActivities Similarly at Enzyme and Cellular Levels. Biochemical and Biophysical Research Communications 220, 459-466 (1996)

[3]. Pili R et al. The alpha-glucosidase I inhibitor castanospermine alters endothelial cell glycosylation, preventsangiogenesis, and inhibits tumor growth. Cancer Res. 1995 Jul 1;55(13):2920-6.

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