Isosteviol

Cat. No.: HY-N0872

CAS No.: 27975-19-5

Molecular Formula: $C_{20}H_{30}O_3$

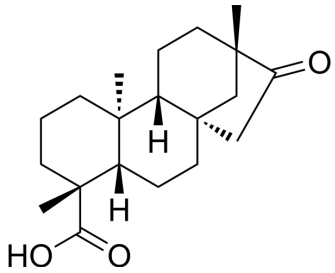
Molecular Weight: 318.45

Target: Reactive Oxygen Species; Topoisomerase; Interleukin Related

Pathway: Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB; Cell Cycle/DNA Damage

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 : ≥ 100 mg/mL (314.02 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.1402 mL	15.7011 mL	31.4021 mL
5 mM	0.6280 mL	3.1402 mL	6.2804 mL
10 mM	0.3140 mL	1.5701 mL	3.1402 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: ≥ 2.75 mg/mL (8.64 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.75 mg/mL (8.64 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.75 mg/mL (8.64 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Isosteviol ((-)-Isosteviol) is a derivative of Stevioside through acid catalyzed hydrolysis of Stevioside. Isosteviol inhibits DNA polymerase and DNA topoisomerase and has antibacterial, anticancer and anti-tuberculosis effects[1][2][3][4].

In Vitro

Isosteviol ((-)-Isosteviol) dose-dependently relaxed the vasopressin (10^{-8} M)-induced vasoconstriction in isolated aortic rings with or without endothelium. However, in the presence of potassium chloride (3×10^{-2} M), the vasodilator effect of isosteviol

on arterial strips disappeared. Only the inhibitors specific for the ATP-sensitive potassium (KATP) channel or small conductance calcium-activated potassium (SKCa) channel inhibited the vasodilator effect of isosteviol in isolated aortic rings contracted with 10^{-8} M vasopressin[1].

The attenuation by isosteviol of the vasopressin- and phenylephrine-induced increase in $[Ca^{2+}]i$ was inhibited by glibenclamide, apamin and 4-aminopyridine but not by charybdotoxin. Furthermore, the inhibitory action of isosteviol on $[Ca^{2+}]i$ was blocked when A7r5 cells co-treated with glibenclamide and apamin in conjunction with 4-aminopyridine were present[2].

Isosteviol (1-100 micromol/l) inhibits angiotensin-II-induced DNA synthesis and endothelin-1 secretion. Measurements of 2'7'-dichlorofluorescin diacetate, a redox-sensitive fluorescent dye, showed an isosteviol-mediated inhibition of intracellular reactive oxygen species generated by the effects of angiotensin II[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Wong KL, et al. Isosteviol acts on potassium channels to relax isolated aortic strips of Wistar rat. Life Sci. 2004 Mar 26;74(19):2379-87.

[2]. Wong KL, et al. Isosteviol as a potassium channel opener to lower intracellular calcium concentrations in cultured aortic smooth muscle cells. Planta Med. 2004 Feb;70(2):108-12.

[3]. Wong KL, et al. Antiproliferative effect of isosteviol on angiotensin-II-treated rat aortic smooth muscle cells. Pharmacology. 2006;76(4):163-9.

[4]. Asad Ullah, et al. Bioactivity Profile of the Diterpene Isosteviol and its Derivatives. Molecules. 2019 Feb 14;24(4):678.

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