

Product Data Sheet

Product Name: Rebaudioside B

Cat. No.: GC37074

Chemical Properties

Cas. No. 58543-17-2

SMILES C[C@]12[C@@]3([H])[C@@](C4)(CC[C@]1([H])[C@@](C)(CCC2)C(O)=O)[C@@](C4=C)(O[C@@]5([H])[C@@H]([C@H]([C@H](O)[C@@H](CO)O5)O[C@]6([H])O[C@@H]([C@@H](O)[C@H](O)[C@H]6O)CO)O[C@]7([H])O[C@@H]([C@@H](O)[C@H](O)[C@H]7O)CO)CC3

Formula $C_{38}H_{60}O_{18}$

M.Wt 804.87

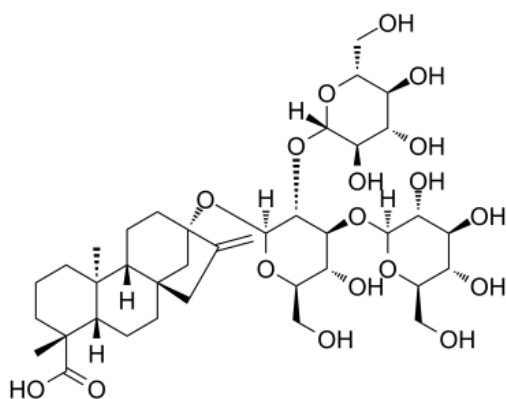
Solubility DMF: 30 mg/ml, DMSO: 30 mg/ml, DMSO: PBS (pH 7.2) (1:4): 0.20 mg/ml, Ethanol: slightly soluble

Storage Store at -20°C, protect from light

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Protocol

Cell experiment [1]:

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Cell lines	A549 cells (human alveolar epithelial cells)
Preparation Method	A549 cells were pretreated with 1μM, 10μM, 100μM, or 1000μM Rebaudioside B for 12 hours, followed by 12 hours of oxygen-glucose deprivation (OGD) and reoxygenation. Cell viability was measured by CCK-8 assay. Apoptosis was analyzed by flow cytometry. Protein expression of caspase-3, cleaved-caspase-3, Bax, and Bcl2 was detected by Western blot.
Reaction Conditions	1-1000μM; 12h pretreatment
Applications	Rebaudioside B increased cell viability, reduced apoptosis rate, downregulated caspase-3, cleaved-caspase-3, and Bax expression, and upregulated Bcl2 expression.
Animal experiment [2]:	
Animal models	Male Sprague-Dawley rats
Preparation Method	Rats were anesthetized with 30mg/kg pentobarbital. Rebaudioside B was dissolved in DMSO and injected via tail vein at 5mg/kg 1 hour before oleic acid induction. Oleic acid was injected via femoral artery to induce acute lung injury. At the end of experiment, rats were euthanized by carbon dioxide asphyxiation. Arterial blood gas was measured. Lung tissue was fixed in 4% paraformaldehyde for H&E staining, IHC with anti-MPO, and IF with anti-SPC and anti-AQP5. BALF protein concentration and lung Wet/Dry weight ratio were measured. TNF-α, IL-1β, IL-6, IL-8 levels in BALF and lung tissue were measured by ELISA. Lung tissue Caspase3/β-actin, Bax, Bcl-2 protein levels were measured by Western blot.

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Dosage form	5mg/kg; i.v.; single injection
Applications	Rebaudioside B improved pH, PaCO ₂ , PaO ₂ , SaO ₂ , PaO ₂ /FiO ₂ and Lac, reduced lung congestion, swelling, exudation, alveolar edema, hemorrhage, alveolar exudate and leukocyte infiltration. Rebaudioside B decreased lung Wet/Dry weight ratio and BALF protein concentration, reduced MPO ⁺ neutrophil infiltration, reduced TNF- α , IL-1 β , IL-6, IL-8 levels, increased AQP5 and SPC expression, reduced Caspase3/ β -actin and Bax/Bcl-2 levels in lung tissue.
References:[1] Wu X, Qiao T, Huang J, et al. Rebaudioside B Attenuates Lung Ischemia-reperfusion Injury Associated Apoptosis and Inflammation. Recent Advances in Inflammation & Allergy Drug Discovery. 2024;18:156-166.[1] Wu X, Liu X, Li J, et al. The mechanism underlying the protective effect of Rebaudioside B against acute lung injury using a network pharmacology-based strategy. International Immunopharmacology. 2025;154:114507.	

Background

Rebaudioside B is a steviol glycoside natural sweetener isolated from *Stevia rebaudiana*.

Rebaudioside B is widely used as a food sweetener^[1-4].

In vitro, A549 human alveolar epithelial cells were pretreated with 1-1000 μ M Rebaudioside B for 12 hours, followed by 12 hours of oxygen-glucose deprivation and reoxygenation. Rebaudioside B increased cell viability, reduced apoptosis rate, downregulated caspase-3, cleaved-caspase-3, and Bax expression, and upregulated Bcl2 expression^[5].

In vivo, male Sprague-Dawley rats received 5mg/kg Rebaudioside B via tail vein injection 1 hour before induction of acute lung injury. Rebaudioside B improved blood gas parameters and oxygenation index, alleviated gross lung congestion, swelling, and exudation, reduced histopathological damage including alveolar edema, hemorrhage, exudate, and leukocyte infiltration, and decreased lung wet/dry weight ratio and bronchoalveolar lavage fluid protein concentration^[6]. Normal Wistar rats and diabetic Wistar rat models received intraperitoneal injection of 20mg/kg

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Rebaudioside B for 28 days. Rebaudioside B produced no antihyperglycemic effect^[7].

References:

- [1] Prakash I, Campbell M, Chaturvedula VS. Catalytic hydrogenation of the sweet principles of Stevia rebaudiana, Rebaudioside B, Rebaudioside C, and Rebaudioside D and sensory evaluation of their reduced derivatives. Int J Mol Sci. 2012 Nov 16;13(11):15126-36.
- [2] Purkayastha S, Pugh G Jr, Lynch B, et al. In vitro metabolism of rebaudioside B, D, and M under anaerobic conditions: comparison with rebaudioside A. Regul Toxicol Pharmacol. 2014 Mar;68(2):259-68.
- [3] Dong J, Yang Z. Characterization of a new hemihydrate rebaudioside B crystal having lower aqueous solubility. Food Chem. 2020 Jan 30;304:125444.
- [4] Chaturvedula VS, Prakash I. Hydrogenation of the exocyclic olefinic bond at C-16/C-17 position of ent-kaurane diterpene glycosides of Stevia rebaudiana using various catalysts. Int J Mol Sci. 2013 Jul 26;14(8):15669-80.
- [5] Wu X, Qiao T, Huang J, et al. Rebaudioside B Attenuates Lung Ischemia-reperfusion Injury Associated Apoptosis and Inflammation. Recent Advances in Inflammation & Allergy Drug Discovery. 2024;18:156-166.
- [6] Wu X, Liu X, Li J, et al. The mechanism underlying the protective effect of Rebaudioside B against acute lung injury using a network pharmacology-based strategy. International Immunopharmacology. 2025;154:114507.
- [7] Aranda-González I, Moguel-Ordóñez Y, Chel-Guerrero L, et al. Evaluation of the Antihyperglycemic Effect of Minor Steviol Glycosides in Normoglycemic and Induced-Diabetic Wistar Rats. J Med Food. 2016;19(12):1125-1133.

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