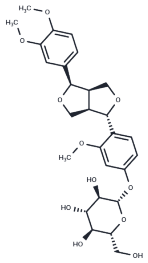
Data Sheet (Cat.No.T2854)

TargetMol

Phillyrin

Chemical Properties



CAS No. : 487-41-2

Formula: C27H34O11

Molecular Weight: 534.55

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Phillyrin (Forsythin) is a novel AMPK activator, has anti-obesity effects in nutritive obesity mice, it can prevent lipid accumulation in HepG2 cells by blocking the expression of SREBP-1c and FAS through LKB1/AMPK activation. Phillyrin(Forsythin) may be a new preventive agent of acute lung injury in the clinical setting, it potentially contributes to the suppression of the activation of MAPK and NF-κB pathways, it also has protective effects on H2O2-induced oxidative stress and apoptosis in PC12 cells.
Targets(IC50)	Antibacterial,AMPK,Cytochromes P450,Influenza Virus
In vitro	Phillyrin suppressed high glucose-induced lipid accumulation in HepG2 cells. Phillyrin strongly inhibited high glucose-induced fatty acid synthase (FAS) expression by modulating sterol regulatory element-binding protein-1c (SREBP-1c) activation. Moreover, use of the pharmacological AMP-activated protein kinase (AMPK) inhibitor revealed that AMPK is essential for suppressing SREBP-1c expression in Phillyrin-treated cells. Liver kinase B1 (LKB1) phosphorylation is required for the Phillyrin-enhanced activation of AMPK in HepG2 hepatocytes.
In vivo	Phillyrin has anti-obesity effect in nutritive obesity mice. Phillyrin could lower wet weight of fat ($P < 0.01$), fat index ($P < 0.05$ or $P < 0.01$), the diameter of fat cell and Lee's index ($P < 0.05$), decrease the jejunum microvillus area, lower the level of serum triglyceride and cholesterol.

Solubility Information

Solubility	DMSO: 245 mg/mL (458.33 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 3.3 mg/mL (6.17 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.8707 mL	9.3537 mL	18.7073 mL
5 mM	0.3741 mL	1.8707 mL	3.7415 mL
10 mM	0.1871 mL	0.9354 mL	1.8707 mL
50 mM	0.0374 mL	0.1871 mL	0.3741 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Do MT, et al. Phillyrin attenuates high glucose-induced lipid accumulation in human HepG2 hepatocytes through the activation of LKB1/AMP-activated protein kinase-dependent signalling. Food Chem. 2013 Jan 15;136(2):415-25.

Jiang H, Chen J, Li X, et al.Systematic identification of chemical components in Fufang Shuanghua oral liquid and screening of potential active components against SARS-CoV-2 protease.Journal of Pharmaceutical and Biomedical Analysis.2023, 223: 115118.

Wei T, et al. Protective effects of phillyrin on H2O 2-induced oxidative stress and apoptosis in PC12 cells. Cell Mol Neurobiol. 2014 Nov;34(8):1165-73.

Zhong WT, et al. Phillyrin attenuates LPS-induced pulmonary inflammation via suppression of MAPK and NF-κB activation in acute lung injury mice. Fitoterapia. 2013 Oct;90:132-9.