Rhoifolin

Cat. No.: HY-N0755

CAS No.: 17306-46-6

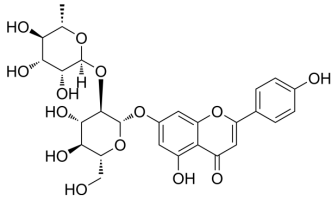
Molecular Formula: $C_{27}H_{30}O_{14}$

Molecular Weight: 578.52

Target: Insulin Receptor; NF-κB; p38 MAPK; Autophagy; GLUT

Pathway: Protein Tyrosine Kinase/RTK; NF-κB; MAPK/ERK Pathway; Autophagy; Membrane Transporter/Ion Channel

Storage: 4°C, protect from light, stored under nitrogen
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light, stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 62.5 mg/mL (108.03 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.7285 mL	8.6427 mL	17.2855 mL
	5 mM	0.3457 mL	1.7285 mL	3.4571 mL
	10 mM	0.1729 mL	0.8643 mL	1.7285 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: ≥ 2.08 mg/mL (3.60 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (3.60 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (3.60 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Rhoifolin is a flavone glycoside can be isolated from Rhus succedanea. Rhoifolin has anti-diabetic effect acting through enhanced adiponectin secretion, tyrosine phosphorylation of insulin receptor-β and glucose transporter 4 (GLUT 4) translocation. Rhoifolin has an anti-inflammatory action via multi-level regulation of inflammatory mediators. Rhoifolin ameliorates titanium particle-stimulated osteolysis and attenuates osteoclastogenesis via RANKL-induced NF-κB and MAPK pathways. Rhoifolin also has cytotoxic activity against different cancer cell lines[1][2][3].

IC_{50} & Target				
	insulin receptor-β	GLUT4	NF-κB	MAPK

In Vitro	Rhoifolin (0-0.1 μM) has cytotoxic activity against different cancer cell lines with 77.0 nM, 60.1 nM, 39.0 nM, 10.7 nM and 10.1 nM in MRC-5, HCT, HepG2, HeLa and Hep2, respectively[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Rhoifolin (12, 24, 30, 36, and 40 mg/kg; PO, for 7 days) has radioprotective effect against radiation-induced decrease of blood platelets and cardiac biochemical lesions in whole body irradiated mice[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Swiss albino mice (10 Gy irradiation induced certain haematological and cardiac biochemical abnormalities)[4]
Dosage:	12, 24, 30, 36, and 40 mg/kg
Administration:	PO, for 7 days
Result:	Diminished the toxic effect of radiation by decreasing the level of lipid peroxides measured as malondialdehyde, ameliorating the alterations in nitric oxide, lactate dehydrogenase, creatine kinase in plasma and tissue and the plasma lipid profile.

REFERENCES

[1]. Eldahshan. O. A, et al. Rhoifolin; A Potent Antiproliferative Effect on Cancer Cell Lines. Journal of Pharmaceutical Research International, 2012, 3(1), pp. 46-53.

[2]. Omama E. El-Shawi, et al. Protective Effect of Rhoifolin on Gamma Irradiation Induced Cardiac Dysfunctions in Albino Mice. Feb 15, 2014.

[3]. Rao YK, et al. Insulin-Mimetic Action of Rhoifolin and Cosmosiin Isolated from Citrus grandis (L.) Osbeck Leaves: Enhanced Adiponectin Secretion and Insulin Receptor Phosphorylation in 3T3-L1 Cells. Evid Based Complement Alternat Med. 2011;2011:624375.

[4]. Liao S, et al. Rhoifolin ameliorates titanium particle-stimulated osteolysis and attenuates osteoclastogenesis via RANKL-induced NF-κB and MAPK pathways. J Cell Physiol. 2019 Aug;234(10):17600-17611.

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