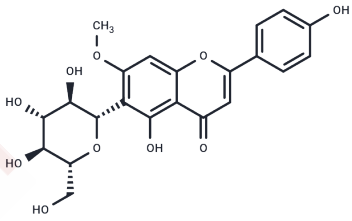
Data Sheet (Cat.No.TN2247)

TargetMol

Swertisin

Chemical Properties



CAS No. : 6991-10-2

Formula: C22H22O10

Molecular Weight: 446.40

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	Swertisin, a novel herbal biomolecule, shows a strong antihyperglycemic action. Swertisin is an adenosine A1 receptor antagonist, is known to have antidiabetic, anti-inflammatory and antioxidant effects.
Targets(IC50)	Adenosine Receptor,HBV,SGLT
In vitro	To identify new agents that stimulate islet differentiation, we screened various compounds isolated from Enicostemma littorale using NIH3T3 cells and morphological changes were observed. Characterization was performed by semiquantitative RT-PCR, Q-PCR, immunocytochemistry, immunoblotting, and insulin secretion assay for functional response in newly generated islet-like cell clusters (ILCC). Reversal of hyperglycemia was monitored after transplanting ILCC in STZ-induced diabetic mice. Among various compounds tested, Swertisin, an isolated flavonoid, was the most effective in differentiating NIH3T3 into endocrine cells. Swertisin efficiently changed the morphology of NIH3T3 cells from fibroblastic to round aggregate cell cluster in huge numbers. Dithizone (DTZ) stain primarily confirmed differentiation and gene expression studies signified rapid onset of differentiation signaling cascade in Swertisin-induced ILCC. Molecular imaging and immunoblotting further confirmed presence of islet specific proteins. Moreover, glucose induced insulin release (in vitro) and decreased fasting blood glucose (FBG) (in vivo) in transplanted diabetic BALB/c mice depicted functional maturity of ILCC. Insulin and glucagon expression in excised islet grafts illustrated survival and functional integrity.

Solubility Information

Solubility	DMSO: 50.00 mg/mL (112.01 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: 1.00 mg/mL (2.24 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	2.2401 mL	11.2007 mL	22.4014 mL
5 mM	0.448 mL	2.2401 mL	4.4803 mL
10 mM	0.224 mL	1.1201 mL	2.2401 mL
50 mM	0.0448 mL	0.224 mL	0.448 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

A Small Molecule Swertisin from Enicostemma littorale Differentiates NIH3T3 Cells into Islet-Like Clusters and Restores Normoglycemia upon Transplantation in Diabetic Balb/c Mice.Evid Based Complement Alternat Med. 2013;2013:280392.