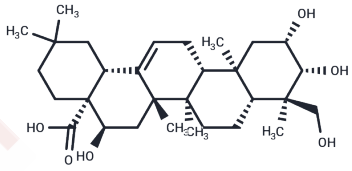
# Data Sheet (Cat.No.T3767)

TargetMol

## Polygalacic acid

### Chemical Properties



CAS No. : 22338-71-2

Formula: C30H48O6

Molecular Weight: 504.70

Storage: Store at low temperature,Keep away from direct sunlight
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

### Biological Description

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| Description | Polygalacic acid (Virgaureagenin G) is a triterpenoid isolated from the root of Polygala tenuifolia Willd that inhibits MMP expression. Polygalacic acid (Virgaureagenin G) can significantly improve the responsiveness of the cholinergic system, such as decreased acetylcholinesterase (AChE) activity, increased choline acetyltransferase (ChAT) activity, and increased acetylcholine (ACh) levels in the hippocampus and frontal cortex. Polygalacic acid (Virgaureagenin G) can also inhibit IL-1β-induced Wnt/β-catenin activation and mitogen-activated protein kinase (MAPK) signaling pathways in chondrocytes, and is used in osteoarthritis (OA) related research. |
| Targets(IC50) | MMP,AChR,Cholinesterase (ChE) |
| In vitro | Method: Polygalacic acid (Virgaureagenin G) (1,5,10,20,30,40,50μM) was used to treat BV2 and N2a cells, and Polygalacic acid (Virgaureagenin G) (50μM) was selected to treat Aβ42 (10,30,40μM). Treated BV2 cells and observed cell viability.<br>**RESULTS** Polygalacic acid (Virgaureagenin G) has no toxicity to BV2 and N2a cells; the conditioned medium pretreated with 50 μM Polygalacic acid (Virgaureagenin G) can significantly increase the viability of N2a cells and significantly reduce the apoptosis of N2a neurons induced by Aβ42. Mortality rate. [2] |
| In vivo | **METHODS**: Polygalacic acid (Virgaureagenin G) (3, 6 and 12 mg/kg, oral, 14 days), and intraperitoneal injection of scopolamine (1 mg/kg, 14 days) were used to induce memory impairment. Memory-related behaviors were assessed using the Morris water maze; cholinergic and neuroinflammatory activities were measured in brain tissue; superoxide dismutase activity malondialdehyde and reduced glutathione content in the brain were measured.<br>**RESULTS** Scopolamine treatment significantly increased escape latency, reduced the number of crossovers, and shortened the time spent in the target quadrant, and Polygalacic acid (Virgaureagenin G) reversed these scopolamine-induced effects; Polygalacic acid (Virgaureagenin G) significantly Improved cholinergic system reactivity, such as reduced acetylcholinesterase (AChE) activity, increased choline acetyltransferase (ChAT) activity, and increased acetylcholine (ACh) levels in the hippocampus and frontal cortex; Polygalacic acid (Virgaureagenin G) also showed Significantly improved neuroinflammation and oxidative stress in mice. [3] |

## Solubility Information

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| Solubility | DMSO: 91.00 mg/mL (180.31 mM),Sonication is recommended.<br>(< 1 mg/ml refers to the product slightly soluble or insoluble) |

Preparing Stock Solutions

| | 1mg | 5mg | 10mg |
|---|---|---|---|
| 1 mM | 1.9814 mL | 9.9069 mL | 19.8138 mL |
| 5 mM | 0.3963 mL | 1.9814 mL | 3.9628 mL |
| 10 mM | 0.1981 mL | 0.9907 mL | 1.9814 mL |
| 50 mM | 0.0396 mL | 0.1981 mL | 0.3963 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

Choi YH, et al. Antiproliferative effects of saponins from the roots of Platycodon grandiflorum on cultured human tumor cells. J Nat Prod. 2010 Nov 29;73(11):1863-7.
Zhao T, et al. Polygalacic acid attenuates cognitive impairment by regulating inflammation through PPARγ/NF-κB signaling pathway. CNS Neurosci Ther. 2024 Feb;30(2):e14581.
Guo C, et al. Neuroprotective effects of polygalacic acid on scopolamine-induced memory deficits in mice. Phytomedicine. 2016 Feb 15;23(2):149-55.
Xu K, et al. Polygalacic acid inhibits MMPs expression and osteoarthritis via Wnt/β-catenin and MAPK signal pathways suppression. Int Immunopharmacol. 2018 Oct;63:246-252.