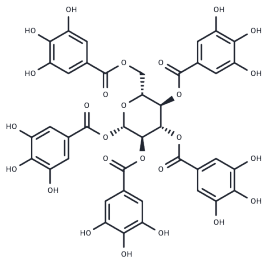
Data Sheet (Cat.No.T3794)

TargetMol

Pentagalloylglucose

Chemical Properties



CAS No. : 14937-32-7

Formula: C41H32O26

Molecular Weight: 940.68

Storage: Store at low temperature,Keep away from direct sunlight,Keep away from moisture
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	Pentagalloylglucose (Penta-O-galloyl-β-D-glucose) is a natural product functioning as an apoptosis and autophagy inducer. Possessing oral bioavailability, this compound exhibits diverse pharmacological effects including antiviral and antitumor activities through modulation of the GSK3β/β-catenin and p53 signaling pathways.
Targets(IC50)	Apoptosis,Reactive Oxygen Species,Nrf2,Influenza Virus,JAK,ROS,Wnt/beta-catenin
In vitro	**Methods**: Human triple-negative breast cancer doxorubicin-resistant cells MDA-MB-231/ADR were treated with 12.5-50 μg/mL pentagalloylglucose for 24-48 h. Cell viability, apoptosis, migration, invasion, and EMT-related proteins were detected by MTT assay, Annexin V/PI staining, Transwell, and Western blot. **Results**: Pentagalloylglucose concentration-dependently inhibited cell viability, migration, and invasion, induced apoptosis, upregulated E-cadherin, downregulated ZEB1 and vimentin, and reversed the EMT phenotype. [1] **Methods**: Human colorectal cancer cells HCT116, RKO, and others were treated with various concentrations of PGG for 72 h. Cell proliferation was detected by CellTiter 96 AQueous One Solution cell viability assay. **Results**: PGG concentration-dependently inhibited cell viability with IC50 values of 5.4-16.9 μmol/L, and decreased total RNA m1A levels and ONECUT2 expression. [2]
In vivo	**Methods**: Subcutaneous xenograft tumor models of human colorectal cancer HCT116 and RKO cells, AOM/DSS-induced colorectal cancer model, and ApcMin/+ spontaneous intestinal adenoma model were established. Pentagalloylglucose (PGG) (20 mg/kg, dissolved in PBS) was administered by intraperitoneal injection 2-3 times per week. **Results**: Pentagalloylglucose (PGG) significantly inhibited xenograft tumor growth and intestinal tumor formation, reduced tumor cell proliferation, promoted apoptosis, and showed no obvious toxicity. [2] **Methods**: KC pancreatic cancer precursor lesion and KPC pancreatic ductal adenocarcinoma mouse models were used. Pentagalloylglucose (PGG) (40 mg/kg, dissolved in PBS) was administered orally once daily. **Results**: Pentagalloylglucose (PGG) significantly reduced the area and grade of pancreatic cancer precursor lesions, decreased Ki67 levels in PDAC tissue, and inhibited malignant tumor progression. [3]

Solubility Information

Solubility	DMSO: 142 mg/mL (150.95 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	5% DMSO+95% Saline: 5 mg/mL (5.32 mM),Solution. *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	1.0631 mL	5.3153 mL	10.6306 mL
5 mM	0.2126 mL	1.0631 mL	2.1261 mL
10 mM	0.1063 mL	0.5315 mL	1.0631 mL
50 mM	0.0213 mL	0.1063 mL	0.2126 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

Kantapan, Jiraporn et al. Pentagalloyl glucose reverses chemoresistance in triple-negative breast cancer via EMT inhibition and miRNA modulation. Biomedicine & pharmacotherapy = Biomedecine & pharmacotherapie vol. 192 (2025): 118572.

Hwang Y H, Jang S A, Kim T, et al. Anti-osteoporotic and Anti-adipogenic Effects of Rhus chinensis Nutgalls in Ovariectomized Mice Fed with a High-fat Diet. Planta Medica. 2019, 85(14/15): 1128-1135

Zhang, Xiaoting et al. RNA m1A methyltransferase TRMT61A promotes colorectal tumorigenesis by enhancing ONECUT2 mRNA stability and is a potential therapeutic target. Cancer communications (London, England) vol. 45,12 (2025): 1616-1644.

Jiang, Xiangyan et al. KRASG12D-driven pentose phosphate pathway remodeling imparts a targetable vulnerability synergizing with MRTX1133 for durable remissions in PDAC. Cell reports. Medicine vol. 6,2 (2025): 101966.

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