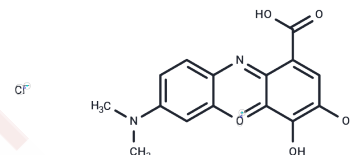


Gallocyanine

Chemical Properties

CAS No. :	1562-85-2
Formula:	C ₁₅ H ₁₃ ClN ₂ O ₅
Molecular Weight:	336.73
Storage:	Keep away from direct sunlight Powder: -20°C for 3 years In solvent: -80°C for 1 year <i>Actual storage temperature shall be subject to the COA.</i>



Biological Description

Description	Gallocyanine is a synthetic azine-based blue dye and a potent inhibitor of DKK1/LRP6 interaction (IC ₅₀ = 6.38 μM). It selectively activates the Wnt signaling pathway by blocking the binding of DKK1 to its receptor LRP6, thereby inhibiting the antagonistic effects of this pathway and inducing intracellular β-catenin accumulation. Gallocyanine exhibits antitumor metastasis, anti-inflammatory, and antifibrotic activities and can be used in research related to tumors, inflammatory injuries, and neurodegenerative diseases. Gallocyanine is a histological stain that specifically labels nucleic acids and cell nuclei; it can also serve as a biochemical fluorescent probe for the detection of superoxide anion radicals.
Targets(IC50)	Wnt/beta-catenin
In vitro	<p>Methods: MDA-MB-231 and 4T1 cells were co-treated with BCSC-CM and gallocyanine at various concentrations (0–20 μM) for 48 hours. Cell viability was assessed, levels of reactive oxygen species (ROS) were measured using BODIPY-C11 staining, glutathione (GSH) levels were determined, and SLC7A11 protein expression levels were analyzed by Western blot.</p> <p>Results: Gallocyanine promoted the proliferation of breast cancer cells MDA-MB-231 and 4T1, inhibited lipid peroxidation, and increased GSH and SLC7A11 levels. [1]</p> <p>Methods: Primary AEC2 cells (overexpressing RAB6) were treated with 5 μM Gallocyanine for 48 hours. Western blot analysis was performed to detect β-catenin, SOX2, and nuclear β-catenin, and cell proliferation and colony-forming efficiency (CFE) were assessed.</p> <p>Results: Gallocyanine treatment significantly increased β-catenin and SOX2 protein expression, elevated nuclear β-catenin levels, and promoted the proliferation and clonogenic formation of RAB6-overexpressing AEC2 cells.[2]</p>
In vivo	<p>Methods: To investigate the effect of Gallocyanine on lung metastasis following orthotopic transplantation, MDA-MB-231-luc cells were injected orthotopically into the mammary fat pad of BALB/c nude mice. Starting on the fourth day after tumor visibility, Gallocyanine (10 mg/kg) was administered intravenously every two days for four consecutive weeks.</p> <p>Results: Gallocyanine significantly reduced the lung metastasis burden, significantly decreased the size of metastatic lesions, and significantly prolonged the survival of the mice. [1]</p>

A DRUG SCREENING EXPERT

In vivo	<p>Methods: To investigate the therapeutic effects of Gallocyanine on PM2.5-induced pulmonary fibrosis, C57BL/6J mice were administered PM2.5 via intratracheal instillation (100 mg/kg, once weekly for 4 weeks) concurrently with Gallocyanine via intratracheal instillation (1 mg/kg, once weekly for 4 weeks).</p> <p>Results: Gallocyanine treatment significantly reduced PM2.5-induced collagen deposition in lung tissue, decreased hydroxyproline content in lung tissue, lowered α-SMA mRNA and protein levels, and reduced IL-1β and TNF-α levels in bronchoalveolar lavage fluid.[2]</p>
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Solubility Information

Solubility	DMSO: 74 mg/mL (219.76 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 mg/mL (2.97 mM), Sonication is recommended. <i>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.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.9697 mL	14.8487 mL	29.6974 mL
5 mM	0.5939 mL	2.9697 mL	5.9395 mL
10 mM	0.297 mL	1.4849 mL	2.9697 mL
50 mM	0.0594 mL	0.297 mL	0.5939 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

Wu M, Zhang X, Zhang W, et al. Cancer stem cell regulated phenotypic plasticity protects metastasized cancer cells from ferroptosis. *Nat Commun.* 2022;13(1):1371

Yang L, et al. Small GTPase RAB6 deficiency promotes alveolar progenitor cell renewal and attenuates PM2.5-induced lung injury and fibrosis. *Cell Death Dis.* 2020;11(10):827.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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