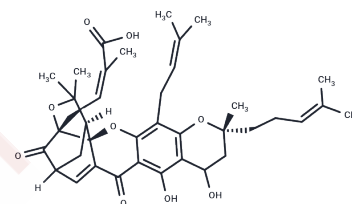


Neogambogic acid

Chemical Properties

CAS No. :	93772-31-7
Formula:	C38H46O9
Molecular Weight:	646.77
Storage:	Keep away from direct sunlight Powder: -20°C for 3 years In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>



Biological Description

Description	Neogambogic acid, an active ingredient in garcinia, can inhibit the growth of some solid tumors [resulting in an anticancer effect], and may be responsible for the inhibition of proliferation of human breast cancer cell line MCF-7 cells.
Targets(IC50)	Apoptosis, Antibacterial
In vitro	Neo-gambogic acid(NGA) significantly reduced the proliferation of MCF-7 cells in a dose-dependent manner. NGA could increase the expression of the apoptosis-related proteins FasL, caspase-3, caspase-8, caspase-9, and Bax and decrease the expression of anti-apoptotic protein Bcl-2 accompanied by the mitochondrial transmembrane damage. The antiproliferative effect of NGA on MCF-7 cells is due to the G(0)/G(1) arrest, increased apoptosis and activation of Fas/FasL and cytochrome C pathway[1].
In vivo	Neo-gambogic acid(NGA) dose of $\leq 0.4 \mu\text{g/ml}$ had no significant effect on the proliferation of mouse BMMs in vitro ($P > 0.05$); concentrations of between $0.1-0.4 \mu\text{g/ml}$ significantly inhibited RANKL-induced osteoclastogenesis ($P < 0.01$) in a dose-dependent manner. Compared with the control group, NGA significantly reduced RANKL-induced bone resorption in vitro ($P < 0.01$), and downregulated the expression of osteoclast-related mRNAs of TRAP, CTR, CTSK, and NFATc1. NGA suppressed the activation of JNK but not the p38 signaling pathway and significantly reduced NF- κB p65 phosphorylation and the nuclear transport of NF- κB molecules, which inhibited NFATc1 expression. CONCLUSIONS NGA suppressed RANKL-induced osteoclastogenesis by inhibiting the JNK and NF- κB pathways in mouse BMMs in vitro and reduced osteoclastic bone resorption [2].
Cell Research	MCF-7 cells (5×10^4) were seeded into 96-well plates. Four hours later, 10 μl NGA in DMSO was added into the wells at various concentrations (0.5-24 $\mu\text{g/ml}$) and 0.1% DMSO was set as a negative control. After 72 h, 50 μl MTT was added and cells were incubated for another 4 h. Then, media was removed and 150 μl DMSO was added and the plates were placed on a shaking table at 150 rpm for 10 min. Optical density (OD) was measured at 490 nm. The experiment was repeated thrice and the rate of cell inhibition was calculated using the following formula: inhibition rate $[1 - (\text{OD test} / \text{OD negative control})] \times 100\%$ [1].
Animal Research	Primary mouse BMMs were cultured with increasing concentrations of NGA. Real-time polymerase chain reaction was used to study the expression of mRNAs corresponding to gene products specific to receptor activator of NF- κB ligand (RANKL)-induced osteoclast

Animal Research	differentiation, including tartrate-resistant acid phosphatase (TRAP), calcitonin receptor (CTR), cathepsin K (CTSK), and nuclear factor of activated T cells c1 (NFATc1).?A cell counting kit-8 assay was used to evaluate cell proliferation.?Western blotting and confocal immunofluorescence microscopy were used to investigate the signaling pathways.?A bone resorption model was used to quantify bone resorption[2].
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Solubility Information

Solubility	DMSO: 6.47 mg/mL (10 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.5461 mL	7.7307 mL	15.4614 mL
5 mM	0.3092 mL	1.5461 mL	3.0923 mL
10 mM	0.1546 mL	0.7731 mL	1.5461 mL
50 mM	0.0309 mL	0.1546 mL	0.3092 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

Wang K, Tang Y, Sun M, et al. The mechanism of neogambogic acid-induced apoptosis in human MCF-7 cells[J]. Acta Biochim Biophys Sin (Shanghai). 2011 Sep;43(9):698-702.

Jin G, Wang F F, Li T, et al. Neogambogic Acid Suppresses Receptor Activator of Nuclear Factor κB Ligand (RANKL)-Induced Osteoclastogenesis by Inhibiting the JNK and NF-κB Pathways in Mouse Bone Marrow-Derived Monocyte/Macrophages[J]. Medical Science Monitor International Medical Journal of Experimental & Clinical Research, 2018, 24:2569-2577.

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