Product data sheet



MedKoo Cat#: 206103				
Name: Gambogic acid				
CAS#: 2752-65-0				
Chemical Formula: C ₃₈ H ₄₄ O ₈				
Exact Mass: 628.30362				
Molecular Weight: 628.75				
Product supplied as:	Powder			
Purity (by HPLC):	$\geq 98\%$			
Shipping conditions	Ambient temperature			
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.			
-	In solvent: -80°C 3 months; -20°C 2 weeks.			



1. Product description:

Gambogic acid is a xanthonoid that is derived from the brownish or orange resin from Garcinia hanburyi. This natural chemical has shown promising antitumor activity in clinical trials. Gambogic acid inhibits cell proliferation, angiogenesis and metastasis. Gambogic acid is currently in clinical trials in China.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM		
DMSO	65.93	104.86		
Ethanol	62.62	99.59		

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.59 mL	7.95 mL	15.90 mL
5 mM	0.32 mL	1.59 mL	3.18 mL
10 mM	0.16 mL	0.80 mL	1.59 mL
50 mM	0.03 mL	0.16 mL	0.32 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Suksen K, Janpipatkul K, Reabroi S, Anantachoke N, Reutrakul V, Chairoungdua A, Thongon N, Bhukhai K. Gambogic Acid Inhibits Wnt/β-catenin Signaling and Induces ER Stress-Mediated Apoptosis in Human Cholangiocarcinoma. Asian Pac J Cancer Prev. 2021 Jun 1;22(6):1913-1920. doi: 10.31557/APJCP.2021.22.6.1913. PMID: 34181351.

2. Gao X, Dai J, Li G, Dai X. Gambogic acid protects LPS-induced apoptosis and inflammation in a cell model of neonatal pneumonia through the regulation of TrkA/Akt signaling pathway. BMC Pharmacol Toxicol. 2021 May 11;22(1):28. doi: 10.1186/s40360-021-00496-9. PMID: 33971977; PMCID: PMC8112032.

In vivo study

1. Tang X, Liu C, Li T, Lin C, Hao Z, Zhang H, Zhao G, Chen Y, Guo A, Hu C. Gambogic acid alleviates inflammation and apoptosis and protects the blood-milk barrier in mastitis induced by LPS. Int Immunopharmacol. 2020 Sep;86:106697. doi: 10.1016/j.intimp.2020.106697. Epub 2020 Jun 22. PMID: 32585608.

2. Yu Z, Jv Y, Cai L, Tian X, Huo X, Wang C, Zhang B, Sun C, Ning J, Feng L, Zhang H, Ma X. Gambogic acid attenuates liver fibrosis by inhibiting the PI3K/AKT and MAPK signaling pathways via inhibiting HSP90. Toxicol Appl Pharmacol. 2019 May 15;371:63-73. doi: 10.1016/j.taap.2019.03.028. Epub 2019 Apr 3. PMID: 30953615.

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7. Bioactivity

Biological target:

Gambogic Acid (Beta-Guttiferrin) inhibits Bcl-XL, Bcl-2, Bcl-W, Bcl-B, Bfl-1 and Mcl-1 with IC50s of 1.47 µM, 1.21 µM, 2.02 µM, 0.66 µM, 1.06 µM and 0.79 µM.

In vitro activity

GA (gambogic acid) exhibited potent cytotoxicity in CCA cells which was associated with significantly inhibited cell proliferation, promoted G1 arrest, and activated caspase 3 mediated-apoptosis. GA attenuated β -catenin transcriptional levels, decreased β -catenin protein, and suppressed the expression of c-Myc, a downstream target gene of Wnt/ β -catenin signaling.

Reference: Asian Pac J Cancer Prev. 2021 Jun 1;22(6):1913-1920. https://pubmed.ncbi.nlm.nih.gov/34181351/

In vivo activity

GA could significantly ameliorate liver fibrosis associated with improving serum markers, decrease in extracellular matrix accumulation and HSCs activation in vivo.

Reference: Toxicol Appl Pharmacol. 2019 May 15;371:63-73. https://pubmed.ncbi.nlm.nih.gov/30953615/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.