Natural Products

ChemFaces

Gambogic acid Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Gambogic acid

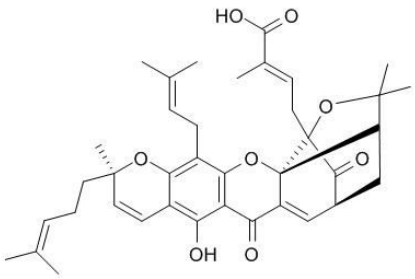
Catalog No.: CFN90172

Cas No.: 2752-65-0

Purity: >=98%

M.F: $C_{38}H_{44}O_8$

M.W: 628.75



Physical Description: Yellow cryst.

Synonyms:B"-Guttiferin;beta-Guttiferin;1,5-Methano-1H,3H,11H-furo(3,4-g)pyrano(3,2-b) xanthene-1-crotonicacid, 3a,4,5,7-tetrahydro-8-hydroxy-alpha,3,3,11-tetramethyl-13-(3-methyl-2-butenyl)-11-(4-methyl-3-pentenyl)-7,15-dioxo-, (Z)-; (2Z)-4-[(11R,14aS)-8-hydroxy-3,3,11-trimethyl-13-(3-methylbut-2-en-1-yl)-11-(4-methylpent-3-en-1-yl)-7,15-dioxo-3a,4,5,7-tetrahydro-3H,11H-1,5-methanofuro[3,4-g]pyrano[3,2-b]xanthen-1-yl]-2-methylbut-2-enoic acid.

[Intended Use]

1. Reference standards;
2. Pharmacological research;
3. Synthetic precursor compounds;
4. Intermediates & Fine Chemicals;
5. Others.

[Source]

The herbs of *Garcinia hanburyi Hook. f.*

[Biological Activity or Inhibitors]

Gambogic acid (GA), a xanthone derived from the resin of the Garcinia hanburyi, has been recently demonstrated to bind transferrin receptor and exhibit potential anticancer effects through a signaling mechanism that is not fully understood; GA inhibits NF-kappaB signaling pathway and potentiates apoptosis through its interaction with the transferrin receptor.[1]

Gambogic acid is a potent apoptosis inducer, it has an EC(50) of 0.78 microM in the caspase activation assay in T47D breast cancer cells, it induces apoptosis independent of cell cycle, which is different from paclitaxel that arrests cells in the G2/M phase.[2]

Gambogic acid can effectively inhibit tumor angiogenesis and suppress tumor growth with low side effects using metronomic chemotherapy with GA in a xenograft prostate tumor model;GA is more effective in activating apoptosis and inhibiting proliferation and migration in HUVECs than in human prostate cancer cells (PC3) ; furthermore, GA inhibits the activations of vascular endothelial growth factor receptor 2 and its downstream protein kinases, such as c-Src, focal adhesion kinase, and AKT; suggests that GA inhibits angiogenesis and may be a viable drug candidate in antiangiogenesis and anticancer therapies. [3]

Gambogic acid is a tissue-specific proteasome inhibitor in vitro and in vivo, it can therefore produce tissue-specific proteasome inhibition and tumor-specific toxicity, with clinical significance for designing novel strategies for cancer treatment.[4]

[Solvent]

Chloroform, Dichloromethane, Ethyl Acetate, DMSO, Acetone, etc.

[HPLC Method][5]

Mobile phase: Methanol-0.1% Acetic acid H2O=93:7 ;

Flow rate: 1.0 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 360 nm.

[Storage]

2-8℃, Protected from air and light, refrigerate or freeze.

[References]

[1] Pandey M K, Sung B, Ahn K S*, et al. Blood, 2007, 110(10):3517-25.*

[2] Zhang H Z, Kasibhatla S, Wang Y, *et al. ChemInform, 2004, 35(22):309-17.*

[3] Yi T, Yi Z, Cho S G*, et al. Cancer Res., 2008, 68(6):1843-50.*

[4] Li X, Liu S, Huang H, *et al. Cell Rep., 2013, 3(1):211-22.*

[5] Zhou A, Li Q L , Peng D Y. *Chinese Journal of Information on Traditional Chinese Medicine,2008, 15(8):53-4.*

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