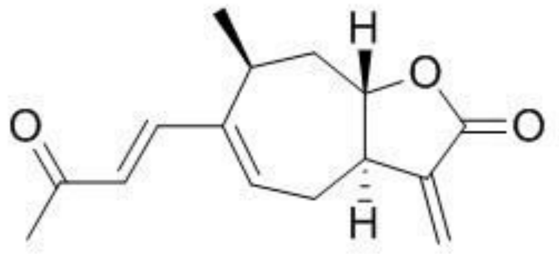
Xanthatin Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Xanthatin

Catalog No.: CFN98315



Cas No.: 26791-73-1

Purity: > 98%

M.F: $C_{15}H_{18}O_3$

M.W: 246.3

Physical Description: Cryst.

Synonyms:(3aR,7S,8aS)-7-methyl-3-methylene-6-[(E)-3-oxobut-1-enyl]-4,7,8,8a-tetrahydro-3aH-cyclohepta[b]furan-2-one; 4-Oxo-1(5),2,11(13)-xanthatrien-12,8-olide.

[Intended Use]

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

[Source]

The fruits of *Xanthium sibiricum.*

[Biological Activity or Inhibitors]

Xanthatin, a natural sesquiterpene lactone, has significant antitumor activity against a variety of cancer cells; it displays significant antitumor effects through cell cycle arrest and apoptosis induction in A549 cells, these effects are associated with intrinsic apoptosis pathway and disrupted NF-κB signaling, suggests that it may have therapeutic potential against human non-small-cell lung cancer.[1]

Xanthatin has bactericidal and fungicidal activity, including against Colletotrichum gloesporoides, Trichothecium roseum, Bacillus cereus and Staphylococcus aureus.[2]

Xanthatin and the crude extracts of Xanthium strumarium have cytotoxic activity.[3]

(−)-Xanthatin is a highly effective inhibitor of MDA-MB-231 cell growth, inducing caspase-independent cell death, and that these effects were independent of FTase inhibition; GADD45γ was selectively induced by (−)-xanthatin and that GADD45γ-primed JNK and p38 signaling pathways are, at least in part, involved in mediating the growth inhibition and potential anticancer activities of this agent; GADD45γ is becoming increasingly recognized for its tumor suppressor function, suggests that the novel possibility that (−)-xanthatin may have therapeutic value as a selective inducer of GADD45γ in human cancer cells, in particular in FTI-resistant aggressive breast cancers.[4]

Xanthatin induces G2/M cell cycle arrest and apoptosis in human gastric carcinoma MKN-45 cells, it may have therapeutic potential against human gastric carcinoma.[5]

Xanthatin is a novel potent inhibitor of VEGFR2 signaling, can inhibit angiogenesis and tumor growth in breast cancer cells.[6]

[Solvent]

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

[HPLC Method][7]

Mobile phase: Methanol-0.1% Formic acid H_2O, gradient elution;

Flow rate: 1.0 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 254 nm..

[Storage]

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

[References]

[1] Zhang L, Ruan J, Yan L, *et al. Molecules, 2012, 17(4):3736-50.*

[2] Ginesta-Peris E, Garcia-Breijo F J, Primo-Yúfera E. *Lett. Appl. Microbiol., 1994, 18(4): 206-8.*

[3] Roussakis C, Chinou I, Vayas C, *et al. Planta Med., 1994, 60(5):473-4.*

[4] Takeda S, Matsuo K, Yaji K, *et al. Chem. Res. Toxicol., 2011, 24(6):855-65.*

[5] Zhang L, Tao L, Ruan J, *et al. Planta Med., 2012, 78(9):890-5.*

[6] Yu Y, Yu J, Pei C G, *et al. Int .J. Clin. Exp. Pathol., 2015, 8(9):10355-64.*

[7] Yan C, Li H, Yu W, *et al. J. Chromatogr. B , 2014, s 947-948(2):57-61.*

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