Natural Products

ChemFaces

6-Gingerol Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: 6-Gingerol

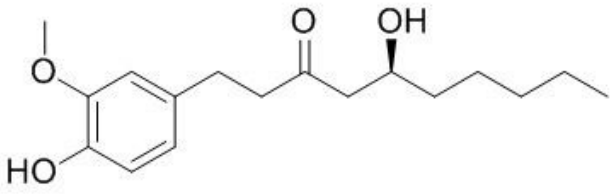
Catalog No.: CFN99931

Cas No.: 23513-14-6

Purity: > 98%

M.F: $C_{17}H_{26}O_4$

M.W: 294.40



Physical Description: Oil

Synonyms: 3-Decanone, 6-Gingerol, 5-hydroxy-1-(4-hydroxy-3-methoxyphenyl)-, (5S)-, 5-Hydroxy-1-(4-hydroxy-3-methoxyphenyl)-3-decanone.

[Intended Use]

1. Reference standards;
2. Pharmacological research;
3. Food and cosmetic research;
4. Synthetic precursor compounds;
5. Intermediates & Fine Chemicals;
6. Ingredient in supplements, beverages;
7. Aromatics;
8. Others.

[Source]

The rhizome of *Zingiber officinale Roscoe.*

[Biological Activity or Inhibitors]

6-Gingerol, a natural product of ginger, has been known to possess anti-tumorigenic and pro-apoptotic activities, it stimulates apoptosis through upregulation of NAG-1 and G1 cell cycle arrest through downregulation of cyclin D1, multiple mechanisms appear to be involved in 6-gingerol action, including protein degradation as well as β-catenin, PKCε, and GSK-3β pathways. [1]

6-Gingerol and 6-shogaol may both exert anti-invasive activity against hepatoma cells through regulation of MMP-9 and TIMP-1, inhibition of the MAPK and PI3k/Akt pathways and NF-κB and STAT3 activities to suppress expression of MMP-2/-9 and uPA and block angiogenesis, and that 6-shogaol could further regulate urokinase-type plasminogen activity.[2,3]

6-Gingerol can repress quorum sensing (QS)-induced genes, specifically those related to the production of virulence factors, inducing exoprotease, rhamnolipid, and pyocyanin.[4]

6-Gingerol has antioxidant and anti-inflammatory activities, it induces genotoxicity probably by oxidative stress; lysosomal and mitochondrial damage were observed in 6-gingerol-induced toxicity.[5]

6-Gingerol has anti-adipogenic activity , can effectively suppress adipogenesis and that it exerts its role mainly through the significant down-regulation of PPARγ and C/EBPα and subsequently inhibits FAS and aP2 expression, also inhibit differentiation in 3T3-L1 cells by attenuating the Akt/GSK3β pathway. [6]

[Solvent]

Chloroform, Dichloromethane, DMSO, Acetone.

[HPLC Method][7]

Mobile phase: Acetonitrile-H2O=40:60;

Flow rate: 1.0 ml/min;

Column temperature: 25 ℃;

The wave length of determination: 280 nm.

[Storage]

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

[References]

[1] Lee S H, Cekanova M, Baek S J. *Mol. Carcinogen., 2008, 47(3):197-208.*

[2] Weng CJ, Wu CF, Huang H W, *et al. Mol. Nut.r Food Res., 2010, 54(11):1618-27.*

[3] Weng C J, Chou C P, Ho C T, *et al. Mol. Nutr. Food Res., 2012, 56(8):1304-14.*

[4] Kim H S, Lee S H, Byun Y, *et al. Sci. Res.-UK, 2015, 5.*

[5] Yang G, Zhong L, Jiang L, *et al. Chem.-Biol. Interact., 2010, 185(1):12-7.*

[6] Tzeng T F, Liu I M. *Phytomedicine International Journal of Phytotherapy & Phytopharmacology, 2013, 20(6):481-7.*

[7] Yan D H. *Chinese Journal of Pharmaceutical Analysis, 2007, 27(5):733-4.*

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