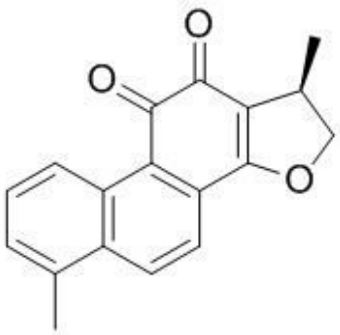
Natural Products

ChemFaces

Dihydrotanshinone I Datasheet

4th Edition (Revised in July, 2016)

[Product Information]



Name: Dihydrotanshinone I

Catalog No.: CFN97435

Cas No.: 87205-99-0

Purity: > 98%

M.F: $C_{18}H_{14}O_3$

M.W: 278.3

Physical Description: Red powder

Synonyms: 1,6-Dimethyl-1,2-dihydronaphtho[1,2-g]benzofuran-10,11-dione.

[Intended Use]

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

[Source]

The root of *Salvia miltiorrhiza Bge.*

[Biological Activity or Inhibitors]

Dihydrotanshinone I(DI) and cryptotanshinone, constituents of a medicinal plant, Salvia miltiorrhiza Bunge, have antibacterial activity against a broad range of Gram positive bacteria, they generates superoxide radicals in Bacillus subtilis lysates, the superoxide radicals are important in the antibacterial actions of the agents.[1]

Dihydrotanshinone I induces topoisomerase I-mediated DNA cleavage as strongly as camptothecin, but topoisomerase II-mediated DNA cleavage was not affected, dihydrotanshinone I inhibits the catalytic activity of topoisomerase I by the formation of a cleavable complex and at least in part through the intercalation into DNA.[2]

Dihydrotanshinone I has cytotoxicity to a variety of tumor cells, it induces a potent cytotoxicity to human umbilical vein endothelial cells with an IC 50 value of approximately 1.28 ug/ml; it can inhibit angio-genesis through suppressing endothelial cell proliferation, migration, invasion and tube formation, indicating that DI has a potential to be developed as a novel anti-angiogenic agent.[3]

Dihydrotanshinone I significantly impaires activation of extracellular signal-regulated kinase 1/2 (ERK1/2), p38 and stress-activated protein kinase/c-Jun NH2-terminal kinase (JNK/SAPK), it suppresses the growth of HeLa cells in a xenograft tumor model, which could be correlated with its modulation of TNF-α production, suggests that dihydrotanshinone I could be a valuable candidate for the intervention of NF-κB-dependent pathological conditions such as inflammation and cancer.[4]

Dihydrotanshinone I induces cell growth arrest during the S phase and subsequently, apoptosis, following its application to K562/ADR cells, exhibits cytotoxicity against various tumor cell lines. [5]

Dihydrotanshinone I combines irradiation, which can enhance apoptotic effects in human cervical cancer by HPV E6 down-regulation and caspases activation.[6]

Dihydrotanshinone I and cryptotanshinone exhibit strong inhibition towards human liver microsome (HLM)-catalyzed propofol glucuronidation, and dihydrotanshinone I exhibits strong inhibition towards UDP-glucuronosyltransferase (UGT) 1A7.[7,8]

Dihydrotanshinone-I interferes with the RNA-binding activity of HuR affecting its post-transcriptional function.[9]

Dihydrotanshinone I induces caspase and ROS dependent apoptosis and autophagy,

mediated by mitochondria in colon cancer; it could be a promising leading compound for the development of anti-tumor agent or be developed as an adjuvant drug for colon cancer therapy.[10]

Dihydrotanshinone I has inhibitory effects on CYP4A11 and CYP4F3A mediated ω-hydroxylation of arachidonic acid.[11]

[Solvent]

Chloroform, Dichloromethane, Diethyl ether, DMSO, Acetone, etc.

[HPLC Method][12]

Mobile phase: Acetonitrile- H2O= 55:45 ;

Flow rate: 1.0 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 245 nm.

[Storage]

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

[References]

[1] Lee D S, Lee S H, Noh J G, *et al. Biosci. Biotech. Biochem., 2014, 63(12):2236-9.*

[2] Lee D S, Lee S H, Kwon G S, *et al. Biosci. Biotech. Biochem., 1999, 63(8):1370-3.*

[3] Weipeng, Bian, Chen, *et al. Acta Bioch. Bioph. Sin., 2008, 40(1):1–6.*

[4] Wang F, Ma J, Wang KS, *et al. Int. Immunopharmacol., 2015, 28(1):764-72.*

[5] Lee D S, Lee S H. *J. Biosci. Bioeng., 2000, 89(3):292-3.*

[6] Ye Y, Xu W, Zhong W, *et al.Mol. Cell .Biochem., 2012, 363(1-2):191-202.*

[7] Cong M, Hu C M, Cao Y F, *et al. Fitoterapia, 2013, 85(1):109-13.*

[8] Gong G, Zhang S Y, Lin J J, *et al. Latin Am. J. Pharm., 2012, 31(7):1060-3.*

[9] D'Agostino V G, Lal P, Mantelli B, *et al. Sci. Rep., 2015, 5(3):1215-392.*

[10] Lin W, Tao H, Jing S, *et al.Phytomed. Int. J. Phytother. Phytopharmacol., 2015, 22(12):1079-87.*

[11] Xu M J, Jiang LF, Ju W Z, *et al. Eur. J. Integr. Med., 2014, 6(6):735*.

[12] Zhu D, Tan S. *China Pharmacist, 2008, 11(03):301-3.*

[Contact]

Address:
S5-3 Building, No. 111, Dongfeng Rd.,
Wuhan Economic and Technological Development Zone,
Wuhan, Hubei 430056,
China

Email: info@chemfaces.com
Tel: +86-27-84237783
Fax: +86-27-84254680
Web: www.chemfaces.com
Tech Support: service@chemfaces.com