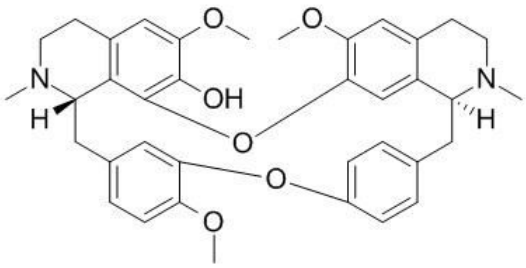
Natural Products

ChemFaces

Fangchinoline Datasheet

4th Edition (Revised in July, 2016)

[Product Information]



Name: Fangchinoline

Catalog No.: CFN99167

Cas No.: 436-77-1

Purity: > 98%

M.F: $C_{37}H_{40}N_2O_6$

M.W: 608.71

Physical Description: Cryst.

Synonyms:7-O-demethyltetrandrine; Demethyltetrandrine;Tetrandrine B;(+)-limacine; Hanfangichin B;6,6',12-Trimethoxy-2,2'-dimethylberbaman-7-ol.

[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. Others.

[Source]

The vines of *Cocculus orbiculatus (L.) DC.*

[Biological Activity or Inhibitors]

Fangchinoline (Fan) and tetrandrine are the major alkaloids from Stephania tetrandrae S. they showsanti-inflammatory effects on mouse ear edema induced by croton oil, the biochemical mechanisms of fangchinoline and tetrandrine on anti-inflammation are significantly different even though they are similar in chemical structure.[1]

Fangchinoline and tetrandrine have vasodilating and hypotensive effects on the rat aorta and the stroke-prone spontaneously hypertensive rat.[2]

Fangchinoline is a highly specific agent inducing autophagic cell death via p53/sestrin2/AMPK signalling in hepatocellular carcinoma cells with a novel mechanism, which elucidates the potential of fangchinoline to potentiate programmed cell death in cancer cells.[3]

Fangchinoline is a nonspecific Ca^{2+} channel blocker, it reduces both FBS-and PDGF-BB-induced RASMCs proliferation by perturbing cell cycle progression; this antiproliferative effect of FAN is dependent on the MAP kinase pathway, but cannot be limited to its Ca^{2+} modulation.[4]

Fangchinoline has anti-tumorigenic activity in vivo, including reduction of tumor volume and pro-apoptotic and anti-proliferative effects in a PC3 nude mouse xenograft, it inhibits human prostate cancer cell lines (PC3) cell proliferation in a dose- and time-dependent manner, the anti-proliferative effect is associated with an increase in the G1/S phase of PC3 cells, suggests that Fan is an effective anti-proliferative agent that modulates cell growth regulators in prostate cancer cells.[5]

Fangchinoline can enhance the cytotoxicity of multidrug resistance-related drugs via modulation of P-glycoprotein.[6]

Fangchinoline has effective antioxidant and radical scavenging activity, also has protective effects on hydrogen peroxide-induced oxidative neuronal cell damage in cultured rat cerebellar granule cells.[7]

Fangchinoline can inhibit human immunodeficiency virus type 1 replication by interfering with gp160 proteolytic processing.[8]

[Solvent]

Chloroform, Dichloromethane, DMSO, Acetone.

[HPLC Method][9]

Mobile phase: Methanol-H2O (pH 3.0, adjusted by glacial acetic acid)=65:35;

Flow rate: 1.0 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 280 nm.

[Storage]

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

[References]

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[4] Zhang Y H, Fang L H, Ku B S. *Biochem. Pharmacol., 2003, 66(9):1853-60.*

[5] Wang CD, Huang JG, Gao X, *et al.Biosci. Biotech. Bioch., 2010, 74(3):488-93.*

[6] Choi S U, Park S H, Kim K H, *et al. Anti-cancer Drugs, 1998, 9(3):255-61.*

[7] Koh S B, Ban J Y, Lee B Y, *et al. Planta Med., 2003, 69(6):506-12.*

[8] Wan Z, Lu Y, Liao Q, *et al. Plos One, 2012, 7(6):286-286.*

[9] Lu X G, Zhang R X, Feng F, *et al. J. Chromatogr. Sci., 2015, 53(8):1-5.*

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