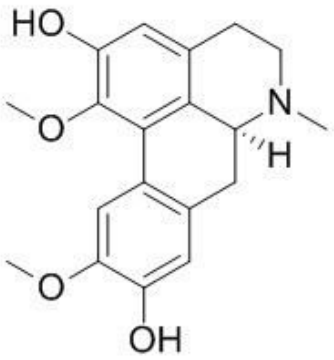
Natural Products

ChemFaces

Boldine Datasheet

4th Edition (Revised in July, 2016)

[Product Information]



Name: Boldine

Catalog No.: CFN98718

Cas No.: 476-70-0

Purity: > 95%

M.F: $C_{19}H_{21}NO_4$

M.W: 327.4

Physical Description: Powder

Synonyms:5,6,6a,7-Tetrahydro-1,10-dimethoxy-6-methyl-4H-dibenzo[de,g]quinoline-2,9-diol;2,9-Dihydroxy-1,10-dimethoxyaporphine.

[Intended Use]

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

[Source]

The herbs of *Litsea glutinosa.*

[Biological Activity or Inhibitors]

Boldine, the major and most characteristic alkaloidal constituent of Boldo (Peumus boldus Mol.), it is an effective antioxidant in both biological and non-biological systems has opened up the perspective of a broad range of uses in medicine and industry. [1]

Boldine, in low micromolar concentrations, is able to prevent brain homogenate autooxidation, the 2,2'-azobis(2-amidinopropane)(AAP)-induced lipid peroxidation of red cell plasma membranes, and the AAP-induced inactivation of lysozyme, suggests that boldine has a high reactivity of towards free radicals. [2]

Boldine may exert an inhibitory effect on STZ-induced oxidative tissue damage and altered antioxidant enzyme activity by the decomposition of reactive oxygen species and inhibition of nitric oxide production and by the reduction of the peroxidation-induced product formation, it may attenuate the development of STZ-induced diabetes in rats and interfere with the role of oxidative stress, one of the pathogeneses of diabetes mellitus.[3]

Boldine displays cytoprotective , anti-oxidant and anti-inflammatory activities, which may arise from its free radical scavenging properties; it prevents the increase in lipoperoxidation levels induced by ischemia, but higher concentrations potentiated this parameter. [4]

Boldine may attenuate the catecholamine oxidation-induced brain mitochondrial dysfunction and decrease the dopamine-induced death of PC12 cells through a scavenging action on reactive oxygen species and inhibition of melanin formation and thiol oxidation.[5]

Boldine has no toxic effect on non-tumor cells when used at the same concentrations as those used on tumor cells, suggests that boldine may be a promising compound for evaluation as an anti-cancer agent.[6]

Boldine reduces oxidative stress and improves endothelium-dependent relaxation in aortas of diabetic mice largely through inhibiting ROS overproduction associated with Ang II-mediated BMP4-dependent mechanisms.[7]

Boldine has low toxicity, lack of effect on P450 activity, and strong inhibition of peroxidation of human liver microsomes, it may be valuable as an antioxidant and

hepatoprotective agent.[8]

[Solvent]

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

[HPLC Method][9]

Mobile phase: Acetonitrile- 0.1 M Sodium perchlorate H2O(pH=3.0), gradient elution;

Flow rate: 1.0 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 302 nm.

[Storage]

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

[References]

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[3] Jang Y Y, Song J H, Yong K S, *et al. Pharmacol. Res., 2000, 42(4):361-71.*

[4] Konrath E L, Santin K, Nassif M, *et al. Neurotoxicology, 2008, 29(6):1136-40.*

[5] Youn Y C, Kwon O S, Han E S, *et al. Biochem. Pharmacol., 2002, 63(3):495-505.*

[6] Gerhardt D, Horn A P, Gaelzer M M, *et al.Invest. New Drug, 2009, 27(6):517-25.*

[7] Lau Y S, Xiao Y T, Mustafa M R, *et al. Brit. J. Pharmacol., 2013, 170(6):1190–8.*

[8] Kringstein P, Cederbaum A I. *Free Radical. Bio .Med., 1995, 18(3):559-63.*

[9] Orsi D D, Gagliardi L, Manna F, *et al. Chromatographia, 1997, 44(11-12):619-22.*

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