

## Product Data Sheet

Product Name: Piperlonguminine

Cat. No.: GC16166

### Chemical Properties

Cas. No. 5950-12-9

Chemical Name 5-(1,3-benzodioxol-5-yl)-N-(2-methylpropyl)-2E,4E-pentadienamide

SMILES O=C(/C=C/C=C/C1=CC=C(OCO2)C2=C1)NCC(C)C

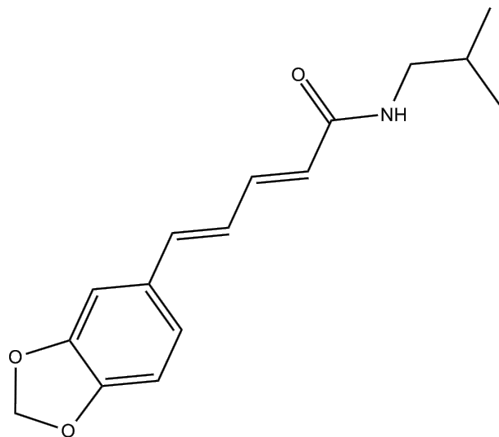
Formula  $C_{16}H_{19}NO_3$  M.Wt 273.3

Solubility  $\leq 3\text{mg/ml}$  in ethanol;  $20\text{mg/ml}$  in DMSO;  $20\text{mg/ml}$  in dimethyl formamide Storage Store at  $-20^\circ\text{C}$

General tips For obtaining a higher solubility, please warm the tube at  $37^\circ\text{C}$  and shake it in the ultrasonic bath for a while. Stock solution can be stored below  $-20^\circ\text{C}$  for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



### Background

Piperlonguminine is an agent with anticancer, antihyperlipidemic, as well as anti-inflammatory properties.

Piperlonguminine is a bio-active isolate of Piper longum.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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**In vitro:** In a previous study, piperlonguminine was discovered to inhibit melanin production in melanoma B16 cells stimulated with  $\alpha$ -MSH, 3-isobutyl-1-methylxanthine or protoporphyrin IX, where piperlonguminine showed stronger depigmenting efficacy. However, piperlonguminine could not alter 1-oleoyl-2-acetyl-sn-glycerol-induced melanogenesis and could not affect protein kinase C-mediated melanin production. In addition, piperlonguminine was not able to inhibit the catalytic activity of cell-free tyrosinase from melanoma B16 cells, and such effect was attributed to the inhibitory action of piperlonguminine on  $\alpha$ -MSH-induced signaling via cAMP to the cAMP responsive element binding protein [1].

**In vivo:** In vivo, rats were subjected to middle cerebral artery occlusion for 1 h, followed by reperfusion for 23 h. The results showed that the intraperitoneal injection of piperlonguminine PE at 2.4 mg/kg was able to produce a significant neuroprotective potential in rats with cerebral ischemia. In addition, piperlonguminine could attenuate the neurological deficit scores, brain infarct volume and brain water content, and could inhibit the activation of NF- $\kappa$ B and MAPK [2].

**Clinical trial:** Up to now, piperlonguminine is still in the preclinical development stage.

### References:

- [1] Kim KS, Kim JA, Eom SY, Lee SH, Min KR, Kim Y. Inhibitory effect of piperlonguminine on melanin production in melanoma B16 cell line by downregulation of tyrosinase expression. *Pigment Cell Res.* 2006 Feb;19(1):90-8.
- [2] Yang T, Sun S, Wang T, Tong X, Bi J, Wang Y, Sun Z. Piperlonguminine is neuroprotective in experimental rat stroke. *Int Immunopharmacol.* 2014 Dec;23(2):447-51.

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