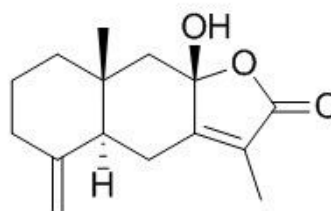


## Atractylenolide III Datasheet

4<sup>th</sup> Edition (Revised in July, 2016)**[ Product Information ]****Name:** Atractylenolide III**Catalog No.:** CFN99946**Cas No.:** 73030-71-4**Purity:** > 98%**M.F:** C<sub>15</sub>H<sub>20</sub>O<sub>3</sub>**M.W:** 248.32**Physical Description:** White cryst.

**Synonyms:** 8-Hydroxyasterolide; (4aS,8aR,9aS)-9a-Hydroxy-3,8a-dimethyl-5-methylenenaphtho[2,3-b]furan-2(4H)-one; (4aS)-4a,5,6,7,8,8a,9,9a-Octahydro-9aβ-hydroxy-3,8aβ-dimethyl-5-methylenenaphtho[2,3-b]furan-2(4H)-one.

**[ 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 *Atractylodes macrocephala* Koidz.

## **[ Biological Activity or Inhibitors ]**

Atractylenolide III is the major bioactive component of *Atractylodes lancea*, it inhibits histamine release, suppresses activation of p38 mitogen-activated protein kinase, C-Jun-N-terminal protein kinase, and nuclear factor- $\kappa$  B in stimulated HMC-1 cells, and suppresses the activation of caspase-1 and the expression of receptor interacting protein-2, suggests that atractylenolide III may control immunological reactions by regulating the cellular functions of IL-6 in mast cells.<sup>[1]</sup>

Atractylenolide III and atractylenolide I have anti-inflammatory activity through inhibition of nuclear factor- $\kappa$  B and mitogen-activated protein kinase pathways in mouse macrophages, can inhibit Lipopolysaccharide-induced TNF- $\alpha$  and NO production in macrophages.<sup>[2,3]</sup>

Atractylenolide III can induce apoptosis in human lung carcinoma A549 cells via mitochondria-mediated death pathway, indicates that it is a potential candidate for treatment of human lung carcinoma.<sup>[4]</sup>

Atractylenolide III (LD50, 103.3 mg/m<sup>2</sup>) and atractylon (136.2 mg/m<sup>2</sup>) are potential house dust mite control agents, they are five and four times more toxic than Deet and 1.7- and 1.3-fold more active than dibutyl phthalate, respectively, based on 24 h LD50 values.<sup>[5]</sup>

Atractylenolide III has neuroprotection against glutamate-induced neuronal apoptosis via inhibiting caspase signaling pathway.<sup>[6]</sup>

Atractylenolide III has gastroprotective activity on ethanol-induced gastric ulcer in vitro and in vivo.<sup>[7]</sup>

## **[ Solvent ]**

Chloroform, Dichloromethane, DMSO, Acetone.

## **[ HPLC Method ]<sup>[8]</sup>**

Mobile phase: Methanol- H<sub>2</sub>O, gradient elution ;

Flow rate: 1.0 ml/min;

Column temperature: 30 °C;

The wave length of determination: 276 nm.

## **[ Storage ]**

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

## **[ References ]**

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- [4] Kang T H, Bang J Y, Kim M H, *et al. Food Chem. Toxicol.* , 2011, 49(2):514-9.
- [5] Kim H K, Yun Y K, Ahn Y J. *J. Agr.Food Chem.*, 2007, 55(15):6027-31.
- [6] Liu C, Zhao H, Ji Z H, *et al. Neurochem. Res.*, 2014, 39(9):1753-8.
- [7] Wang K T, Chen L G, Wu C H, *et al. J. Pharm. Pharmacol.*, 2010, 62(3):381-8.
- [8] Guo Y, Jin YC, Yuan K,*et al. Asian Journal of Chemistry*,2012, 24(10):4425-8.

## **[ Contact ]**

**Address:**

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

**Email:** [info@chemfaces.com](mailto:info@chemfaces.com)

**Tel:** +86-27-84237783

**Fax:** +86-27-84254680

**Web:** [www.chemfaces.com](http://www.chemfaces.com)

**Tech Support:** [service@chemfaces.com](mailto:service@chemfaces.com)