*Natural Products*

ChemFaces

# 3,4-O-Isopropylidene shikimic acid Datasheet

5th Edition (Revised in January, 2017)

## [ Product Information ]

**Name:** 3,4-O-Isopropylidene shikimic acid

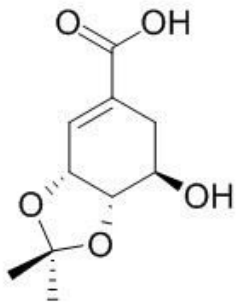
**Catalog No.:** CFN99852

**Cas No.:** 183075-03-8

**Purity:** > 95%

**M.F:** $C_{10}H_{14}O_5$

**M.W:** 214.2



**Physical Description:** Powder

**Synonyms:**7-Hydroxy-2,2-diMethyl-3a,6,7,7a-tetrahydrobenzo[d][1,3]dioxole-5-carboxylic acid;3,4-Oxo-isopropylidene-shikimic acid.

## [ Intended Use ]

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

## [ Source ]

The fruits of *Illicium verum.*

## [ Biological Activity or Inhibitors]

3,4-Oxo- isopropylidene-shikimic acid has significant anti-inflammatory effect which may be related to inhibiting the production of prostaglandin E2 and protecting free radical against oxidation.[1]

3,4-Oxo-isopropylidene-shikimic acid has protective effects on experimental colitis induced by trinitrobenzenesulfonic acid in rats, probably due to an antioxidant action.[2]

3,4-Oxo-isopropylidene-shikimic acid has anti-thrombosis effect, it inhibits thrombosis by anti-platelet-aggregation.[3]

3,4-Oxo-isopropylidene shikimic acid relieves the brain edema of rats subjected to MCAT by improving the energy metabolism and $Na^+$, $K^+$-ATPase activity in rat brain tissue.[4]

3,4-Oxo-isopropylidene-shikimic acid can inhibit adhesion of polymorphonuclear leukocyte to TNF-alpha-induced endothelial cells in vitro.[5]

3,4-Oxo-isopropylidene-shikimic acid has analgesic and antioxidant activities, it exhibits moderate antioxidant activity by scavenging the superoxide radical and hydroxyl radical with $IC_{50}$ values of 0.214 and 0.450 ug/mL, respectively.[6]

3,4-Oxo-isopropylidene-shikimic acid has exhibited ameliorative effect on cognitive impairment in experimental animal models of dementia, it can promote adipogenesis by up-regulating expressions of C/EBP β, PPAR γ, C/EBP α, aP2 and FAS, and also stimulate adipokines during adipocyte differentiation, suggests that stimulation of adipokines and cognitive enhancing effect of 3,4-oxo-isopropylidene-shikimic acid have some relationship.[7]

## [ Solvent ]

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

## [ HPLC Method ][8]

Mobile phase: Methanol-0.03% Acetic acid=50:100;

Flow rate:1.0 ml/min;

Column temperature: Room Temperature;

The wave length of determination:220 nm.

## [ Storage ]

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

## [ References ]


[1] Xing J F, Sun J N, Hou J Y, *et al. Chinese Pharmaceutical Journal,2006,41(24):1861-3.*

[2] Xing J F, Sun J N, Sun J Y, *et al. Dig. Dis. Sci.,2012 Aug;57(8):2045-54.*

[3] Wang H T, Jin H T, Sun J N, *et al. Yao Xue Xue Bao,2002 Apr;37(4):245-8.*

[4] Wang H T, Sun J N, Xu Q P, *et al. Chinese Journal of Pharmacology Toxicology, 2002, 16(4):270-2.*

[5] Ma Y, Sun J N, Xu Q P, *et al. Acta Pharmacol. Sin.,2004 Feb;25(2):246-50.*

[6] Sun J Y, You C Y, Dong K, *et al. Pharm. Biol.,2016 Oct;54(10):2282-7.*

[7] Dong S, Yasui N, Negishi H, *et al. Journal of Traditional Chinese Medical Sciences, 2014,1(2):120-5.*

[8] Yao J C, Ni J, Sun J N.*Chinese Journal of Pharmaceutical Analysis,2009,29(8):1273-6.*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