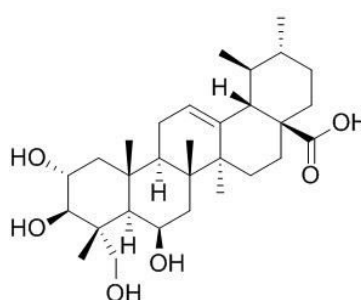


# Madecassic acid Datasheet

4<sup>th</sup> Edition (Revised in July, 2016)

## [ Product Information ]

**Name:** Madecassic acid**Catalog No.:** CFN99914**Cas No.:** 18449-41-7**Purity:** >=98%**M.F:** C<sub>30</sub>H<sub>48</sub>O<sub>6</sub>**M.W:** 504.70**Physical Description:** Powder**Synonyms:** Brahmic acid; 2,3,6,23-tetrahydroxyurs-12-en-28-oic-acid;

(2alpha,3beta,6beta)-2,3,6,23-tetrahydroxyurs-12-en-28-oic-acid;

(1S,2R,4aS,6aR,6aS,6bR,8R,8aR,9R,10R,11R,12aR,14bS)-8,10,11-Trihydroxy-9-(hydroxymethyl)-1,2,6a,6b,9,12a-hexamethyl-2,3,4,5,6,6a,7,8,8a,10,11,12,13,14b-tetradecahydro-1H-picene-4a-carboxylic acid.

## [ Intended Use ]

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

## [ Source ]

The herbs of *Centella asiatica* (L.) Urban.

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

Madecassic acid (MA) is an abundant triterpenoid in *Centella asiatica* (L.) Urban. (Apiaceae) that has been used as a wound-healing, anti-inflammatory and anti-cancer agent; it can protect against hypoxia-induced oxidative stress in retinal microvascular endothelial cells via ROS-mediated endoplasmic reticulum stress; indicates that the regulation of oxidative stress and ER stress by MA would be a promising therapy to reverse the process and development of hypoxia-induced hRMECs dysfunction.<sup>[1]</sup>

Madecassic acid has anti-inflammatory properties in RAW 264.7 macrophage cells, the properties are caused by iNOS, COX-2, TNF-alpha, IL-1beta, and IL-6 inhibition via the downregulation of NF-kappaB activation.<sup>[2]</sup>

Madecassic acid inhibits in vivo CT26 cell-induced tumor growth by facilitating cell apoptosis and increasing immune defense mechanisms.<sup>[3]</sup>

Madecassic acid can improve glycemic control and hemostatic imbalance, lower lipid accumulation, and attenuate oxidative and inflammatory stress in diabetic mice; thus, madecassic acid could be considered as an anti-diabetic agent.<sup>[4]</sup>

## **[ Solvent ]**

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

## **[ HPLC Method ]<sup>[5]</sup>**

Mobile phase: Methanol- 4 m M  $\beta$ - cyclodextrin H<sub>2</sub>O =65: 35;

Flow rate: 0.4 ml/min;

Column temperature: 25 °C;

The wave length of determination: 204 nm.

## **[ Storage ]**

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

## **[ References ]**

- [1] Yang B, Xu Y, Hu Y, *et al. Biomed. Pharmacother.* 2016 Oct 8;84:845-52.
- [2] Won J H, Shin J H. *Planta Med.*, 2010, 76(3):251-7.
- [3] Zhang H, Zhang M, Tao Y, *et al. Journal of B.u.on. Official Journal of the Balkan Union of Oncology*, 2014, 19(2):372-6.
- [4] Hsu Y M, Hung Y C, Hu L, *et al. Nutrients*, 2015, 7(12):10065-75.
- [5] Kai G, Pan J, Yuan C, *et al. Bulletin- Korean Chemical Society*, 2008, 29(3):551-554.

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