

# PRODUCT INFORMATION



## 14-Deoxyandrographolide

Item No. 31140

**CAS Registry No.:** 4176-97-0  
**Formal Name:** 3-[2-[(1R,4aS,5R,6R,8aS)-decahydro-6-hydroxy-5-(hydroxymethyl)-5,8a-dimethyl-2-methylene-1-naphthalenyl]ethyl]-2(5H)-furanone

**Synonyms:** 14-DAG

**MF:** C<sub>20</sub>H<sub>30</sub>O<sub>4</sub>

**FW:** 334.5

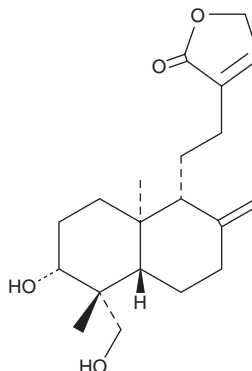
**Purity:** ≥95%

**Supplied as:** A solid

**Storage:** -20°C

**Stability:** ≥4 years

**Item Origin:** Plant/*Andrographis paniculata*



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

14-Deoxyandrographolide is supplied as a solid. A stock solution may be made by dissolving the 14-deoxyandrographolide in the solvent of choice, which should be purged with an inert gas. 14-Deoxyandrographolide is soluble in acetonitrile.

### Description

14-Deoxyandrographolide is a diterpene lactone that has been found in *A. paniculata* and has diverse biological activities, including anticancer, hepatoprotective, antioxidative, and antidiabetic properties.<sup>1-4</sup> It inhibits the growth of HL-60 cells with a GI<sub>50</sub> value of 25.46 μM and is cytotoxic to T47D cells (EC<sub>50</sub> = 2.8 μg/ml) but not HepG2 or NCI H23 cells (EC<sub>50</sub>s = 28.3 and 26.4 μg/ml, respectively).<sup>1,2</sup> 14-Deoxyandrographolide (10 and 25 μM) increases AMPK phosphorylation and glucose uptake in L6 myotubes and potentiates the effect of insulin to increase cell surface levels of GLUT4 in L6-GLUT4myc cells.<sup>4</sup> It reduces blood glucose levels in rats in a model of streptozotocin-induced diabetes and in *db/db* diabetic mice when administered at a dose of 100 mg/kg. 14-Deoxyandrographolide reduces ethanol-induced hepatotoxicity in rats when administered at a dose of 15 mg/kg per day for the last four weeks of an eight-week ethanol exposure period.<sup>3</sup> It also reduces protein carbonyl and thiobarbituric acid reactive substances (TBARS) levels and increases total glutathione (GSH) levels in isolated rat hepatocytes in the same model.

### References

- Chen, L., Zhu, H., Wang, R., *et al.* ent-Labdane diterpenoid lactone stereoisomers from *Andrographis paniculata*. *J. Nat. Prod.* **71**(5), 852-855 (2008).
- Tan, M.L., Kuroyanagi, M., Sulaiman, S.F., *et al.* Cytotoxic Activities of Major Diterpenoid Constituents of *Andrographis paniculata*. in a Panel of Human Tumor Cell Lines. *Pharmaceutical Biology.* **43**(6), 501-508 (2008).
- Mandal, S., Nelson, V.K., Mukhopadhyay, S., *et al.* 14-Deoxyandrographolide targets adenylate cyclase and prevents ethanol-induced liver injury through constitutive NOS dependent reduced redox signaling in rats. *Food. Chem. Toxicol.* **59**, 236-248 (2013).
- Arha, D., Pandeti, S., Mishra, A., *et al.* Deoxyandrographolide promotes glucose uptake through glucose transporter-4 translocation to plasma membrane in L6 myotubes and exerts antihyperglycemic effect *in vivo*. *Eur. J. Pharmacol.* **768**, 207-216 (2015).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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