

PRODUCT INFORMATION



Cnicin

Item No. 38969

CAS Registry No.: 24394-09-0

Formal Name: (3R)-3,4-dihydroxy-2-methylene-butanoic acid, (3aR,4S,6E,10Z,11aR)-2,3,3a,4,5,8,9,11a-octahydro-10-(hydroxymethyl)-6-methyl-3-methylene-2-oxocyclodeca[b]furan-4-yl ester

Synonym: (+)-Cnicin

MF: $C_{20}H_{26}O_7$

FW: 378.4

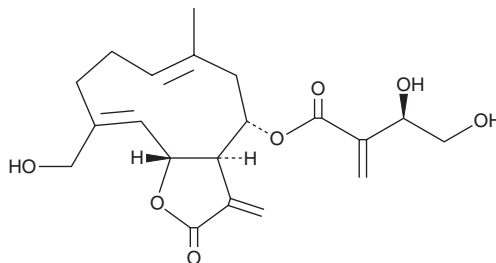
Purity: $\geq 95\%$

Supplied as: A solid

Storage: -20°C

Stability: ≥ 4 years

Item Origin: Plant/*Centaurea maculosa*



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

Laboratory Procedures

Cnicin is supplied as a solid. A stock solution may be made by dissolving the cnicin in the solvent of choice, which should be purged with an inert gas. Cnicin is soluble in organic solvents such as acetonitrile and methanol.

Description

Cnicin is a germacranolide sesquiterpene lactone that has been found in *Centaurea* and has diverse biological activities.¹⁻³ It irreversibly inhibits the UDP-N-acetylglucosamine (UDP-GlcNAc) 1-carboxyvinyltransferase MurA (IC_{50} s = 16.7 and 10.3 for the *E. coli* and *P. aeruginosa* enzymes, respectively) and is active against *B. cereus* and *M. flavus* (MICs = 1.25 and 5 $\mu\text{g/ml}$, respectively).^{1,2} Cnicin inhibits the growth of MCF-7 breast and OVCAR-3 ovarian cancer cells (GI_{50} s = 37.8 and 37.4 μM , respectively).² It reduces snake venom-induced paw edema in rats when administered at doses ranging from 2.5 to 10 mg/kg.³

References

1. Bachelier, A., Mayer, R., and Klein, C.D. Sesquiterpene lactones are potent and irreversible inhibitors of the antibacterial target enzyme MurA. *Bioorg. Med. Chem. Lett.* **16**(21), 5605-5609 (2006)
2. Saroglou, V., Karioti, A., Demetzos, C., et al. Sesquiterpene lactones from *Centaurea spinosa* and their antibacterial and cytotoxic activities. *J. Nat. Prod.* **68**(9), 1404-1407 (2005).
3. Demiroz, T., Albayrak, G., Nalbantsoy, A., et al. Anti-inflammatory properties of *Centaurea calolepis* Boiss. and cnicin against *Macrovipera lebetina* obtusa (Dwigubsky, 1832) and *Montivipera xanthina* (Gray, 1849) venoms in rat. *Toxicon* **152**, 37-42 (2018).

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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