

Product Data Sheet

Product Name: 11 β ,13-Dihydrolactucopicrin

Cat. No.: GC81818

Chemical Properties

Cas. No. 125519-47-3

Formula C₂₃H₂₄O₇

M.Wt 412.44

Solubility

Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Background

11 β ,13-Dihydrolactucopicrin is a sesquiterpene lactone and the main bitter component of chicory root. 11 β ,13-Dihydrolactucopicrin inhibits yeast α -glucosidase activity (IC₅₀ = 27.49 μ M) and inhibits Crz1 activation and nuclear accumulation. 1 β ,13-Dihydrolactucopicrin possesses blood-brain barrier penetration capacity in an in vitro HBMEC blood-brain barrier model and can generate cysteine-conjugated metabolites within brain microvascular endothelial cells. 11 β ,13-Dihydrolactucopicrin can regulate the lncRNA H19/miR-21-3p signaling axis; it upregulates the expression of ABCG2 and lncRNA H19, downregulates miR-21-3p, inhibits the release of IL-6, TNF- α , and hs-CRP pro-

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

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inflammatory mediators, and alleviates urate-induced inflammatory injury in renal epithelial cells.

11 β ,13-Dihydrolactucopicrin can be used in research on diabetes and renal urate deposition [1] [2] [3] [4].

In Vitro, 11 β ,13-dihydrolactucopicrin (10 μ M; 4 h) exhibited moderate permeability in Caco-2 monolayer cells, with the apical concentration decreasing by 29.9%, and no cysteine adduct was formed^[1]. 11 β ,13-dihydrolactucopicrin (12.5-100 μ M; 3 h) has a maximum non-toxic concentration of 12.5 μ M in *Saccharomyces cerevisiae*^[1]. 11 β ,13-dihydrolactucopicrin exhibited moderate inhibitory activity against the calcineurin-Crz1 pathway in *Saccharomyces cerevisiae* YAA5, with an inhibition rate of 26% at 12.5 μ M^[1]. 11 β ,13-Dihydrolactucopicrin (compound 5) inhibited yeast α -glucosidase with an IC₅₀ of 27.49 μ M, showing limited inhibitory activity, possibly because its phenyl group hinders binding to the enzyme^[2]. 11 β ,13-Dihydrolactucopicrin (predicted by molecular docking) showed good binding activity with the ABCG2 protein, exhibiting the lowest binding energy among the tested compounds^[3]. 11 β ,13-dihydrolactucopicrin (5 μ M; 2 h) can be transported across the in vitro BBB model of HBMEC, with a transport percentage between 10% and 20%^[4]. 11 β ,13-Dihydrolactucopicrin (10 μ M; 24 h) attenuates inflammation and enhances ABCG2 expression in UA- and LPS-stimulated NRK-52E cells, while uniquely upregulating lncRNA H19 and downregulating miR-21-3p^[3].

References:

- [1]. Matos MS, et al. Assessing the Intestinal Permeability and Anti-Inflammatory Potential of Sesquiterpene Lactones from Chicory. *Nutrients*. 2020 Nov 19;12(11):3547.
- [2]. Fan H, et al. Isolation and identification of terpenoids from chicory roots and their inhibitory activities against yeast α -glucosidase. *European Food Research and Technology*, 2017, 243: 1009-1017.
- [3]. An X Y, et al. Investigation of Pharmacological Mechanisms and Active Ingredients of *Cichorium intybus* L. in Alleviating Renal Urate Deposition via lncRNA H19/miR-21-3p Regulation to Enhance ABCG2 Expression. *International Journal of Molecular Sciences*, 2025, 26(16):7892.
- [4]. Ávila-Gálvez MÁ, et al. Costunolide and parthenolide: Novel blood-brain barrier permeable sesquiterpene lactones to improve barrier tightness. *Biomedicine & pharmacotherapy = Biomedecine & pharmacotherapie*. 2023 Nov;167:115413.

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