

Product Data Sheet

Product Name: Gypsogenin

Cat. No.: GC26662

Chemical Properties

Cas. No. 639-14-5

SMILES [H][C@@]12CC(C)(C)CC[C@@]1(CC[C@]1(C)C2=CC[C@]2([H])[C@@]3(C)CC[C@H](O)[C@@](C)(C=O)[C@]3([H])CC[C@@]12C)C(O)=O

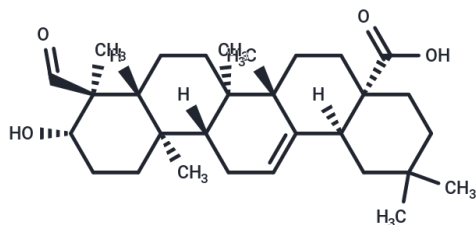
Formula C₃₀H₄₆O₄ M.Wt 470.68

Solubility DMSO: 27.5 mg/ml (58.42 mM) Storage -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



Protocol

Cell experiment [1]:

Cell lines HeLa, MCF-7, K562 and Jurkat cell lines

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

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Preparation Method Gypsogenin was dissolved in the culture medium with 1% DMSO to give various concentrations (0.1, 1, 10, and 100 μ M, respectively). The resulted solutions were subsequently added to cell culture medium. Control group contained supplemented media with 1% DMSO. The cytotoxic effect of Gypsogenin was measured using the 3-(4,5-dimethylthiazol-2-yl)-2,5-di-phenyltetrazolium bromide (MTT) assay.

Reaction Conditions 0.1, 1, 10, and 100 μ M; 72h

Applications Gypsogenin displayed good cytotoxicity for several cancer cells and the values of IC₅₀ ranged from 3.25 to 13.68 μ M.

Animal experiment [2]:

Animal models Male inbred C57BL/6J mice

Preparation Method The mice inoculated with a solid tumor (Lewis lung cancer) were received a high, medium or low dose of Gypsogenin (10.0, 7.5, 5.0mg/kg) for 8d. After the mice were dissected, the tumors were removed, cleaned, weighed and a tumor control rate calculated.

Dosage form 5.0, 7.5, 10.0mg/kg; 8d; i.p.

Applications Gypsogenin reduced the tumor weight and the tumor control rate was 49.6% in the high-dose group.

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References:

- [1] Emirdağ S, Ulusoy N G, Aksel M. Design, synthesis and biological evaluation of novel gypsogenin derivatives as potential anticancer and antimicrobial agents [J]. Chemistry & biodiversity, 2024, 21(6): e202400471.
- [2] Tian G, Zhou L, Zhong Y, et al. Experimental studies of the therapeutic effect of Gypsophila oldhamiana gypsogenin on Lewis lung cancer in mice [J]. Chinese Journal of Clinical Oncology, 2008, 5(3): 206-210

Background

Gypsogenin is a well-known natural saponin which has marked anticancer effects towards various types of cancer cell lines [1]. Gypsogenin can inhibit the growth and metastasis of Lewis lung cancer and triggers apoptosis by increasing Bax levels and possesses anticancer activities against L1210, CCER-CEM and Ls174T cancer cells [2]. Gypsogenin derivatives possess great potential as important pharmacophores.

Gypsogenin (0.1, 1, 10 and 100μM; 72h) displayed good cytotoxicity in the low concentration for several cancer cells (MCF-7, HeLa, Jurkat and K562), the values of IC₅₀ ranged from 3.25 to 13.68μM [1]. Gypsogenin (5, 10, 20 and 40μM; 72h) showed a strong antiproliferative effect, with an IC₅₀ between 5 and 10μM on HL-60 cells [3].

Gypsogenin (5.0, 7.5, 10.0mg/kg; 8d; i.p.) reduced the tumor weight and showed a preliminary anti-metastatic role on Lewis lung cancer in C57BL/6J mice [2].

References:

- [1] Emirdağ S, Ulusoy N G, Aksel M. Design, synthesis and biological evaluation of novel gypsogenin derivatives as potential anticancer and antimicrobial agents [J]. Chemistry & biodiversity, 2024, 21(6): e202400471.
- [2] Tian G, Zhou L, Zhong Y, et al. Experimental studies of the therapeutic effect of Gypsophila oldhamiana gypsogenin on Lewis lung cancer in mice [J]. Chinese Journal of Clinical Oncology, 2008, 5(3): 206-210.
- [3] Ozturk S E, Babahan I, Ozmen A. Synthesis, characterization and in vitro anti-neoplastic activity of gypsogenin derivatives [J]. Bioorganic chemistry, 2014, 52/54: 15-23.

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