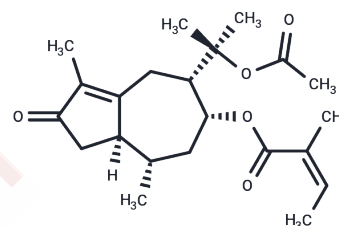


Torilin

Chemical Properties

| | |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CAS No. : | 13018-10-5 |
| Formula: | C ₂₂ H ₃₂ O ₅ |
| Molecular Weight: | 376.49 |
| Storage: | Store at low temperature, Keep away from direct sunlight Powder: -20°C for 3 years In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small> |



Biological Description

| | |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Torilin is an inhibitor of testosterone 5 alpha-reductase, it (IC ₅₀ = 31.7 +/- 4.23 microM) shows a stronger inhibition of 5 alpha-reductase than alpha-linolenic acid (IC ₅₀ = 160.3 +/- 24.62 microM) but is weaker than finasteride (IC ₅₀ = 0.38 +/- 0.06 microM). Torilin has immunomodulatory, hepatoprotective, and anti-inflammatory properties, it inhibits inflammation by limiting TAK1-mediated MAP kinase and NF-κB activation, it can attenuate arthritis severity, modify leukocyte activations in dLNs or joints, and restore serum and splenocyte cytokine imbalances. Torilin inhibits melanin production in alpha-melanocyte stimulating hormone-activated B16 melanoma cells, with an IC(50) value of 25 microM. Torilin shows excellent antimicrobial activity against Bacillus subtilis ATCC 6633 spores and vegetative cells. Torilin has a potent anti-angiogenic activity both in vivo and in vitro, and it may have a strong activity to suppress tumorigenesis by inhibition of tumor invasion, it reverses multidrug-resistance in cancer cells, it can potentiate the cytotoxicities of adriamycin, vinblastine, taxol and colchicine against multidrug-resistant KB-V1 and MCF7/ADR cells. |
| Targets(IC ₅₀) | MMP,ERK,NF-κB,Reductase,DNA/RNA Synthesis,IκB/IKK,JNK,p38 MAPK,Tyrosinase |
| In vitro | Epidermal melanocytes synthesize melanin pigments and transfer them to keratinocytes, which is responsible for skin pigmentation. However, abnormal accumulation of melanin pigments causes hyperpigmentation disorders, which are substantially improved with treatment of tyrosinase inhibitor. In our ongoing study, Torilis japonica DC. (Umbelliferae) was found to inhibit melanin production. A goal of this study is to elucidate the hypopigmenting principle of T. japonica. METHODS AND RESULTS:A sesquiterpene structure of Torilin was isolated from the plant extracts via bioassay-guided phytochemical analysis. Torilin dose-dependently inhibited melanin production, with an IC(50) value of 25 microM, in alpha-melanocyte stimulating hormone (alpha-MSH)-activated B16 melanoma cells. Arbutin, a positive control of skin whitener, also inhibited alpha-MSH-induced melanin production with an IC(50) value of 170 microM. As to the mode of action, Torilin downregulated alpha-MSH-induced protein levels of tyrosinase without directly inhibiting catalytic activity of the enzyme. CONCLUSIONS: Taken together, this study shows that Torilin contributes to the hypopigmenting principle of T. japonica, and suggests its pharmacological potential in melanin-associated hyperpigmentation disorders[1]. |

Preparing Stock Solutions

| | 1mg | 5mg | 10mg |
|-------|-----------|------------|------------|
| 1 mM | 2.6561 mL | 13.2806 mL | 26.5611 mL |
| 5 mM | 0.5312 mL | 2.6561 mL | 5.3122 mL |
| 10 mM | 0.2656 mL | 1.3281 mL | 2.6561 mL |
| 50 mM | 0.0531 mL | 0.2656 mL | 0.5312 mL |

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Torilin from *Torilis japonica* inhibits melanin production in alpha-melanocyte stimulating hormone-activated B16 melanoma cells. *Planta Med.* 2009 Nov;75(14):1505-8.

Antimicrobial activity of torilin isolated from *Torilis japonica* fruit against *Bacillus subtilis*. *J Food Sci.* 2008 Mar;73(2):M37-46.

Sesquiterpenes with hepatoprotective activity from *Cnidium monnieri* on tacrine-induced cytotoxicity in Hep G2 cells. *Planta Med.* 2002 Aug;68(8):748-9.

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