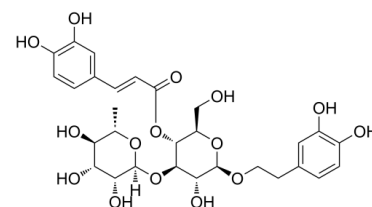


Data Sheet

Product Name:	Verbascoside
Cat. No.:	CS-2624
CAS No.:	61276-17-3
Molecular Formula:	C ₂₉ H ₃₆ O ₁₅
Molecular Weight:	624.59
Target:	Apoptosis; Bacterial; HSV; PKC
Pathway:	Anti-infection; Apoptosis; Epigenetics; TGF-beta/Smad
Solubility:	DMSO : ≥ 100 mg/mL; H ₂ O : ≥ 100 mg/mL



BIOLOGICAL ACTIVITY:

Verbascoside is isolated from *Acanthus mollis*, acts as an ATP-competitive inhibitor of **PKC**, with an **IC₅₀** of 25 μM, and has antitumor, anti-inflammatory and antineuropathic pain activity. IC₅₀ & Target: IC₅₀: 25 μM (PKC)^[1] *In Vitro*: Verbascoside acts as an ATP-competitive inhibitor of PKC, with an IC₅₀ of 25 μM. Verbascoside shows K_is of 22 and 28 μM with respect to ATP and histone, respectively. Verbascoside has potent antitumor activity against L-1210 cells, with an IC₅₀ of 13 μM^[1]. Verbascoside (5, 10 μM) suppresses 2,4-dinitrochlorobenzene (DNCB)-induced T cell costimulatory factors CD86 and CD54, proinflammatory cytokines, and NFκB pathway activation in THP-1 cells^[2]. *In Vivo*: Verbascoside (1%) reduces the overall scratching behavior incidence as well as the severity of the skin lesions in 2,4-dinitrochlorobenzene (DNCB)-induced atopic dermatitis (AD) mice model. Verbascoside also blocks DNCB-induced expression of proinflammatory cytokine TNF-α, IL-6, and IL-4 mRNA in skin lesions^[2]. Verbascoside (50, 100 mg/kg, i.p.) does not modify chronic constriction injury (CCI)-induced cold allodynia. Verbascoside (200 mg/kg, i.p.) decreases hypersensitivity to cold stimulus, acetone, on day 3 in rats. Verbascoside also significantly reduces behavioral changes associated with neuropathy. Moreover, Verbascoside decreases Bax and increases Bcl-2 on day 3^[3].

PROTOCOL (Extracted from published papers and Only for reference)

Cell Assay: Verbascoside is dissolved in DMSO^{[1],[1]} The lymphocytic mouse **leukemia L1210 cells** (ATCC, CCL 219) are plated sparsely at **10⁴ cells per well** in 24-well cluster plates in Dulbecco's modified Eagle medium containing 10% fetal calf serum, 4 mM glutamine, 100 U/mL penicillin, 100 μg/mL streptomycin sulfate, and **Verbascoside (solubilized in DMSO)**. After a 2-day incubation period at 37°C in a humidified atmosphere (5% CO₂ in air), growth is monitored by counting cell numbers in a Coulter-counter. IC₅₀ values are calculated on the basis of the linear regression lines established for each compound tested^[1].

Animal Administration: ^[2]Rats^[2]

To induce **atopic dermatitis (AD)**-like symptoms, 2,4-dinitrochlorobenzene (DNCB) is used. Briefly, the dorsal hair of the **mice** is removed using an electronic clipper 2 days before DNCB treatment. An application of 200 μL of 1% DNCB (in acetone:olive oil = 4:1) is made to the shaved dorsal skin for sensitization. The repeated challenge is performed on the same site with 0.2% DNCB once every 3 days for about 2 weeks. The mice are divided into 4 groups (n = 6 per group): (1) vehicle-treated controls, (2) DNCB-treated only, (3) **1% Verbascoside (in acetone:olive oil 4:1)**-treated only, and (4) DNCB + 1% Verbascoside-treated group^[2].

References:

[1]. Herbert JM, et al. Verbascoside isolated from Lantana camara, an inhibitor of protein kinase C. J Nat Prod. 1991 Nov-Dec;54(6):1595-600.

[2]. Li Y, et al. Verbascoside Alleviates Atopic Dermatitis-Like Symptoms in Mice via Its Potent Anti-Inflammatory Effect. Int Arch Allergy Immunol. 2018;175(4):220-230.

[3]. Amin B, et al. The Effect of Verbascoside in Neuropathic Pain Induced by Chronic Constriction Injury in Rats. Phytother Res. 2016 Jan;30(1):128-35.

CAIndexNames:

β -D-Glucopyranoside, 2-(3,4-dihydroxyphenyl)ethyl 3-O-(6-deoxy- α -L-mannopyranosyl)-, 4-[(2E)-3-(3,4-dihydroxyphenyl)-2-propenoate]

SMILES:

O[C@@H]([C@H](OCCC1=CC(O)=C(O)C=C1)O2)[C@H]([C@@H]([C@H]2CO)OC/C=C/C3=CC(O)=C(O)C=C3=O)O[C@@](O[C@@H](C)[C@H](O)[C@H]4O)([H])[C@@H]4O

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

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