

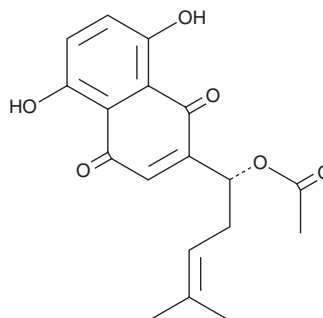
PRODUCT INFORMATION



Acetylshikonin

Item No. 40144

CAS Registry No.: 24502-78-1
Formal Name: 2-[(1R)-1-(acetyloxy)-4-methyl-3-penten-1-yl]-5,8-dihydroxy-1,4-naphthalenedione
Synonym: NSC 110199
MF: C₁₈H₁₈O₆
FW: 330.3
Purity: ≥98%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years
Item Origin: Plant/*Lithospermum* sp.



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

Laboratory Procedures

Acetylshikonin is supplied as a solid. A stock solution may be made by dissolving the acetylshikonin in the solvent of choice, which should be purged with an inert gas. Acetylshikonin is soluble in methanol.

Description

Acetylshikonin is a naphthoquinone that has been found in *L. erythrorhizon* and has diverse biological activities.¹⁻³ It inhibits a panel of 10 cytochrome P450 (CYP) enzymes, including CYP1A2, CYP2D6, and CYP3A (IC₅₀s = 1.4-4.0 μM).¹ Acetylshikonin is cytotoxic to H1975, A549, PC-9, and H460 non-small cell lung cancer (NSCLC) cells (IC₅₀s = 3.9, 4.7, 20.7, and 17.3 μM, respectively).² It inhibits the migration of, as well as reduces EGFR and STAT3 signaling and induces apoptosis in, H1975, PC-9, and H460 cells when used at concentrations of 0.5, 1, and 2 μM. *In vivo*, acetylshikonin (1 mg/kg) reduces tumor weight and intratumoral STAT3 phosphorylation in an H1975 mouse xenograft model. It also inhibits severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) papain-like protease (PL^{pro}; IC₅₀ = 5.05 μM) and reduces bronchoalveolar lavage fluid (BALF) levels of Tnf-α, Il-1α, and Il-6 in a mouse model of acute lung injury induced by poly (I:C) and SARS-CoV-2 spike glycoprotein, also known as surface glycoprotein, when administered at a dose of 300 mg/kg.³

References

- Shon, J.C., Phuc, N.M., Kim, W.C., et al. Acetylshikonin is a novel non-selective cytochrome P450 inhibitor. *Biopharm. Drug Dispos.* **38(9)**, 553-556 (2017).
- Tang, Y., Wang, Y., Wang, X., et al. Acetylshikonin exerts anti-tumor effects on non-small cell lung cancer through dual inhibition of STAT3 and EGFR. *Phytomedicine* **101**, 154109 (40144).
- Lu, N., Gu, T., Tian, X., et al. Acetylshikonin inhibits inflammatory responses and Papain-like protease activity in murine model of COVID-19. *Signal Transduct. Target Ther.* **7(1)**, 371 (2022).

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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