# Echinatin

**Cat. No.:** HY-N0269

**CAS No.:** 34221-41-5

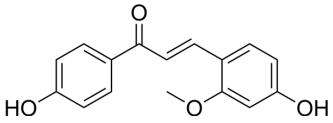
**Molecular Formula:** $C_{16}H_{14}O_4$

**Molecular Weight:** 270.28

**Target:** Apoptosis; Autophagy; NOD-like Receptor (NLR)

**Pathway:** Apoptosis; Autophagy; Immunology/Inflammation

**Storage:** 4°C, protect from light
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)




## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 125 mg/mL (462.48 mM; Need ultrasonic)

| Preparing Stock Solutions | Mass / Solvent / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 3.6999 mL | 18.4993 mL | 36.9987 mL |
| | 5 mM | 0.7400 mL | 3.6999 mL | 7.3997 mL |
| | 10 mM | 0.3700 mL | 1.8499 mL | 3.6999 mL |

Please refer to the solubility information to select the appropriate solvent.

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.17 mg/mL (8.03 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (7.70 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Echinatin is a chalcone isolated from the Chinese herbal medicine Gancao with hepatoprotective and anti-inflammatory effects[1]. Echinatin can be quickly absorbed and eliminated and extensively distributed with an absolute bioavailability of approximately 6.81% in Rat[2].

**In Vitro**

Echinatin (0-40 μM, 60 min) inhibits Nigericin induced NLRP3 inflammasome activation by binding to HSP90 and suppressing its ATPase activity in LPS-primed BMDMs[2].
Echinatin (0-40 μM, 1-5 days) induces apoptosis and autophagy, and inhibits cell proliferation, migration, invasion in ESCC (KYSE30 and KYSE270 cells)[4].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[1]

| | |
|---|---|
| Cell Line: | LPS-primed BMDMs |
| Concentration: | 0-40 μM |
| Incubation Time: | 60 min |
| Result: | Reduced cleaved caspase-1 and production of IL-1β. |

Immunofluorescence[4]

| | |
|---|---|
| Cell Line: | KYSE30 and KYSE270 cells |
| Concentration: | 40 μM |
| Incubation Time: | 2 days |
| Result: | Induced cellular LC3 puncta accumulation. |

**In Vivo**

Echinatin (20 and 40 mg/kg, i.p.) inhibits LPS-induced septic shock in mice by inhibiting NLRP3 inflammasome activation[2].
Echinatin (20-80 mg/kg, i.p.) shows cardioprotective effect, and relieves I/R-Induced Myocardial Injury in rats[3].
Echinatin (20 and 50 mg/kg, p.o.) inhibits tumor growth and inhibits the AKT/mTOR pathway of KYSE270-derived tumor mice xenografts[4].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

| | |
|---|---|
| Animal Model: | LPS-induced septic shock in mice[1] |
| Dosage: | 20 and 40 mg/kg |
| Administration: | i.p. |
| Result: | Inhibited LPS-induced IL-1β and TNF-α production.<br>Reduced the proportion and the number of neutrophils in peritoneal lavage cells from mice. |

## CUSTOMER VALIDATION

- Int Immunopharmacol. 2024 Jun 7:136:112372.
- Front Cell Dev Biol. 2021 Jun 11;9:684393.
- SSRN. 2024 Mar 8.

See more customer validations on www.MedChemExpress.com

## REFERENCES

[1]. Xu G, et al. Echinatin effectively protects against NLRP3 inflammasome-driven diseases by targeting HSP90. JCI Insight. 2021 Jan 25;6(2):e134601.

[2]. Niu J, et al. Cardioprotective Effect of Echinatin Against Ischemia/Reperfusion Injury: Involvement of Hippo/Yes-Associated Protein Signaling. Front Pharmacol. 2021 Jan 11;11:593225.

[3]. Hong P, et al. Echinatin suppresses esophageal cancer tumor growth and invasion through inducing AKT/mTOR-dependent autophagy and apoptosis. Cell Death Dis. 2020 Jul 13;11(7):524.

[4]. Liang M, et al. Antioxidant Mechanisms of Echinatin and Licochalcone A. Molecules. 2018 Dec 20;24(1).



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