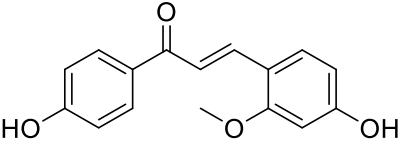


# Product data sheet



MedKoo Cat#: 461252 Name: Echinatin CAS#: 34221-41-5 Chemical Formula: C <sub>16</sub> H <sub>14</sub> O <sub>4</sub> Exact Mass: 270.0892 Molecular Weight: 270.28		
Product supplied as:	Powder	
Purity (by HPLC):	≥ 98%	
Shipping conditions	Ambient temperature	
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.	

## 1. Product description:

Echinatin is a compound isolated from the licorice and is a chalcone derivative called retrochalcone. Echinatin has exhibited diverse therapeutic effects, including anti-inflammatory and anti-oxidant effects. Echinatin exerts a protective effect against I/R-induced myocardial injury on hearts. This effect may be attributed to the antioxidant and anti-inflammatory activities of this compound.

## 2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

## 3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	89.5	331.14
Ethanol	27.0	99.90

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.70 mL	18.50 mL	37.00 mL
5 mM	0.74 mL	3.70 mL	7.40 mL
10 mM	0.37 mL	1.85 mL	3.70 mL
50 mM	0.07 mL	0.37 mL	0.74 mL

## 5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

## 6. Recommended literature which reported protocols for in vitro and in vivo study

### In vitro study

1. Niu J, Li Y, Song X, Liu Y, Li Y, Li Y. Cardioprotective Effect of Echinatin Against Ischemia/Reperfusion Injury: Involvement of Hippo/Yes-Associated Protein Signaling. *Front Pharmacol.* 2021 Jan 11;11:593225. doi: 10.3389/fphar.2020.593225. PMID: 33584269; PMCID: PMC7874120.
2. Kwak AW, Choi JS, Lee MH, Oh HN, Cho SS, Yoon G, Liu K, Chae JI, Shim JH. Retrochalcone Echinatin Triggers Apoptosis of Esophageal Squamous Cell Carcinoma via ROS- and ER Stress-Mediated Signaling Pathways. *Molecules.* 2019 Nov 9;24(22):4055. doi: 10.3390/molecules24224055. PMID: 31717502; PMCID: PMC6891341.

### In vivo study

1. Xu G, Fu S, Zhan X, Wang Z, Zhang P, Shi W, Qin N, Chen Y, Wang C, Niu M, Guo Y, Wang J, Bai Z, Xiao X. Echinatin effectively protects against NLRP3 inflammasome-driven diseases by targeting HSP90. *JCI Insight.* 2021 Jan 25;6(2):e134601. doi: 10.1172/jci.insight.134601. PMID: 33350984; PMCID: PMC7934863.
2. Hong P, Liu QW, Xie Y, Zhang QH, Liao L, He QY, Li B, Xu WW. 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. doi: 10.1038/s41419-020-2730-7. PMID: 32655130; PMCID: PMC7354992.

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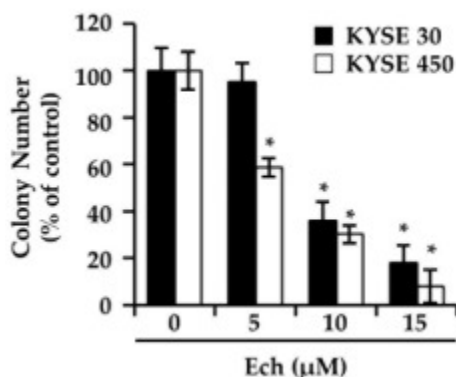
## 7. Bioactivity

### Biological target:

Echinatin is a chalcone isolated from the Chinese herbal medicine Gancao with hepatoprotective and anti-inflammatory effects.

### In vitro activity

Ech (Echinatin) significantly inhibited growth of ESCC cells in a dose- and time- dependent manner compared to control (Figure 1b–f). The concentration for inhibiting 50% of cell growth (IC<sub>50</sub>) of Ech was 15  $\mu$ M for KYSE 30, 15  $\mu$ M for KYSE 70, 6  $\mu$ M for KYSE 410, 13  $\mu$ M for KYSE 450, and 10  $\mu$ M for KYSE 510. In the three-dimensional culture of ESCC cells, colony numbers and sizes were decreased by treatment with Ech in KYSE 30 and KYSE 450 cells (Figure 1g).



Reference: Molecules. 2019 Nov; 24(22): 4055. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6891341/>

### In vivo activity

This study pretreated mice with echinatin or MCC950, a best-studied selective inhibitor of NLRP3, and then conducted i.p. injection of LPS. Proinflammatory cytokines and neutrophils in peritoneal lavage fluids were measured. The data show that echinatin effectively attenuated LPS-induced IL-1 $\beta$  and TNF- $\alpha$  production, which was equivalent to the inhibitory effect of MCC950 (Figure 5, A and B). Moreover, consistent with the inhibitory effects of echinatin on proinflammatory cytokines, the proportion and the number of neutrophils in peritoneal lavage cells from mice pretreated with echinatin was also reduced (Figure 5, C and D).

Reference: JCI Insight. 2021 Jan 25; 6(2): e134601. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7934863/>

*Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.*