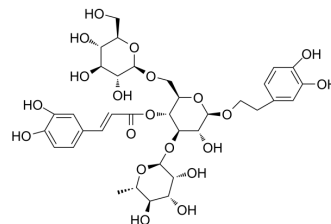


## Echinacoside

|                           |  |       |          |
|---------------------------|--|-------|----------|
| <b>Cat. No.:</b>          | HY-N0020   |       |          |
| <b>CAS No.:</b>           | 82854-37-3   |       |          |
| <b>Molecular Formula:</b> | C <sub>35</sub> H <sub>46</sub> O <sub>20</sub>                          |       |          |
| <b>Molecular Weight:</b>  | 786.73   |       |          |
| <b>Target:</b>            | Wnt; Reactive Oxygen Species   |       |          |
| <b>Pathway:</b>           | Stem Cell/Wnt; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB |       |          |
| <b>Storage:</b>           | Powder   | -20°C | 3 years  |
|                           |  | 4°C   | 2 years  |
|                           | In solvent   | -80°C | 6 months |
|                           |  | -20°C | 1 month  |



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : 50 mg/mL (63.55 mM; Need ultrasonic)  
 H<sub>2</sub>O : 35.71 mg/mL (45.39 mM; Need ultrasonic)

| Preparing Stock Solutions | Solvent Concentration | Mass      |           |            |
|---------------------------|-----------------------|-----------|-----------|------------|
|                           |                       | 1 mg      | 5 mg      | 10 mg      |
|                           | 1 mM                  | 1.2711 mL | 6.3554 mL | 12.7108 mL |
|                           | 5 mM                  | 0.2542 mL | 1.2711 mL | 2.5422 mL  |
|                           | 10 mM                 | 0.1271 mL | 0.6355 mL | 1.2711 mL  |

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

#### In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
 Solubility: ≥ 2.5 mg/mL (3.18 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
 Solubility: ≥ 2.5 mg/mL (3.18 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
 Solubility: ≥ 2.5 mg/mL (3.18 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

Echinacoside, one of the phenylethanoids isolated from the stems of *Cistanche salsa*, effectively inhibits Wnt/β-catenin signaling. Echinacoside elicits neuroprotection by activating Trk receptors and their downstream signal pathways. Antiosteoporotic activity<sup>[1][2][3]</sup>.

#### In Vivo

Echinacoside (30-270 mg/kg body weight; p.o.; daily for 12 weeks) significantly reverses the increases of body weight, serum hydroxyproline (HOP) levels, and the decreases of uterus wet weight and bone mineral density (BMD) in In ovariectomized

(OVX) rats<sup>[3]</sup>.

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

|                 |  |
|-----------------|--|
| Animal Model:   | Fifty-six aged 6 months female Sprague-Dawley rats (OVX rat model) <sup>[3]</sup>  |
| Dosage:         | 30, 90, 270 mg/kg body weight  |
| Administration: | p.o.; daily for 12 weeks   |
| Result:         | The increases of body weight, serum hydroxyproline (HOP) levels, and the decreases of uterus wet weight and BMD were significantly reversed. |

## CUSTOMER VALIDATION

- J Neurosci Res. 2019 Dec;97(12):1689-1705.
- J Cell Mol Med. 2020 Dec 13.
- Biochem Biophys Res Commun. 2020 May 21;526(1):170-175.

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## REFERENCES

- [1]. Zhang D, et al. Echinacoside inhibits amyloid fibrillization of HEWL and protects against A $\beta$ -induced neurotoxicity. Int J Biol Macromol. 2014 Sep 2;72C:243-253.
- [2]. Zhu M, et al. Transient exposure to echinacoside is sufficient to activate Trk signaling and protect neuronal cells from rotenone. J Neurochem. 2013 Feb;124(4):571-80.
- [3]. Li F, et al. Antiosteoporotic activity of echinacoside in ovariectomized rats. Phytomedicine. 2013 Apr 15;20(6):549-57.
- [4]. Li F, et al. Echinacoside promotes bone regeneration by increasing OPG/RANKL ratio in MC3T3-E1 cells. Fitoterapia. 2012 Dec;83(8):1443-50.
- [5]. Li X, et al. Echinacoside ameliorates D-galactosamine plus lipopolysaccharide-induced acute liver injury in mice via inhibition of apoptosis and inflammation. Scand J Gastroenterol. 2014 Aug;49(8):993-1000.
- [6]. Tang C, et al. Echinacoside inhibits breast cancer cells by suppressing the Wnt/ $\beta$ -catenin signaling pathway. Biochem Biophys Res Commun. 2020 Mar 19. pii: S0006-291X(20)30530-1.

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

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