3,4-Dicaffeoylquinic acid

**Cat. No.:** HY-N0057  
**CAS No.:** 14534-61-3  
**Molecular Formula:** C_{25}H_{24}O_{12}  
**Molecular Weight:** 516.45  
**Target:** Glucosidase; Influenza Virus; Apoptosis; Endogenous Metabolite  
**Pathway:** Metabolic Enzyme/Protease; Anti-infection; Apoptosis  
**Storage:** 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 (96.81 mM; Need ultrasonic)

### Preparing Stock Solutions

<table>
<thead>
<tr>
<th>Solvent Concentration</th>
<th>Mass</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>1.9363 mL</td>
<td>9.6815 mL</td>
<td>19.3630 mL</td>
<td></td>
</tr>
<tr>
<td>5 mM</td>
<td>0.3873 mL</td>
<td>1.9363 mL</td>
<td>3.8726 mL</td>
<td></td>
</tr>
<tr>
<td>10 mM</td>
<td>0.1936 mL</td>
<td>0.9681 mL</td>
<td>1.9363 mL</td>
<td></td>
</tr>
</tbody>
</table>

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: ≥ 2.5 mg/mL (4.84 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
   Solubility: ≥ 2.5 mg/mL (4.84 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil  
   Solubility: ≥ 2.5 mg/mL (4.84 mM); Clear solution

**BIOLOGICAL ACTIVITY**

**Description**

3,4-Dicaffeoylquinic acid (3,4-Di-O-caffeoylquinic acid), naturally isolated from Laggera alata, has antioxidative, DNA protective, neuroprotective and hepatoprotective properties. 3,4-Dicaffeoylquinic acid exerts apoptosis-mediated cytotoxicity and α-glucosidase inhibitory effects. 3,4-Dicaffeoylquinic acid possesses a unique mechanism of anti-influenza viral activity, that is, enhancing viral clearance by increasing TRAIL^{[1][2][3]}.  

**IC₅₀ & Target**

Human Endogenous Metabolite
### In Vitro

3,4-Dicaffeoylquinic acid acts as a greater primary antioxidant than its methanol extract, by having higher ferric reducing activity (EC$_{50}$ 2.18 μg/ml), β-carotene bleaching activity (EC$_{50}$ 23.85 μg/ml) and DPPH scavenging activity (EC$_{50}$ 68.91 μg/ml). 3,4-Dicaffeoylquinic acid exhibits a remarkable dose-dependent inhibitory effect on NCI-H23 (human lung adenocarcinoma) cell lines (EC$_{50}$ 3.26 μg/ml) and is found to be apoptotic in nature based on a clear indication of DNA fragmentation. 3,4-Dicaffeoylquinic acid also displays a concentration-dependent α-glucosidase inhibition with EC$_{50}$ 241.80 μg/ml.[1]

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

### REFERENCES

[1]. Takemura T, et al. 3,4-Dicaffeoylquinic Acid, a Major Constituent of Brazilian Propolis, Increases TRAIL Expression and Extends the Lifetimes of Mice Infected with the Influenza A Virus. Evid Based Complement Alternat Med. 2012;2012:946867.
