Salvia miltiorrhiza Root and Rhizome — Identification

Thin-Layer Chromatography

Typical HPTLC Chromatograms

These chromatograms are supplied for information only

Track assignment: 1) Salvianolic acid B (1.0 mg/mL); 2) Cyprotanshinone (1.0 mg/mL); 3) Tanshinone I (1.0 mg/mL); 4) Dihydrotanshinone (1.0 mg/mL); 5) Tanshinone IIα (1.0 mg/mL); 6-15) Salvia Miltiorrhiza Root and Rhizoma, commercial samples

Sample solutions: according to the monograph

Standard solutions: in methanol

Plate: HPTLC, Si 60 F \(_{254}\)

Saturation time: 20 minutes

Application volume: 5 µL, as 8-mm bands

Relative Humidity: about 33%

Temperature: 25°

Developing solvent system: toluene, dichloromethane, ethyl acetate, methanol, and formic acid (4:6:8:1:4)
Derivatization reagent: Sulfuric acid reagent – 20 mL sulfuric acid in 180 mL methanol
Detection: derivatize, dry, heat at 100° for 5 min, examine under visible light

HPLC (Tanshinones)

Representative chromatogram of Content of Tanshinones in Salvia Miltiorrhiza Root and Rhizome

This chromatogram is supplied for information only

Solutions preparation: according to the monograph
Detector: UV, 270 nm
Column: 4.6-mm × 25-cm; 5-µm packing L1 (Similar to Zorbax Extend C18)
Column temperature: 25°±1
Flow rate: 1.0 mL/min
Injection volume: 10 µL
Solution A: 0.02% phosphoric acid in water
Solution B: acetonitrile
Mobile phase: see Table 1
Table 1

<table>
<thead>
<tr>
<th>Time (min)</th>
<th>Solution A (%)</th>
<th>Solution B (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>39</td>
<td>61</td>
</tr>
<tr>
<td>6</td>
<td>39</td>
<td>61</td>
</tr>
<tr>
<td>20</td>
<td>10</td>
<td>90</td>
</tr>
<tr>
<td>20.5</td>
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<td>61</td>
</tr>
<tr>
<td>25</td>
<td>39</td>
<td>61</td>
</tr>
</tbody>
</table>

HPLC (Salvianolic acid B)

Representative chromatogram of Content of Salvianolic acid B in Salvia Miltiorrhiza Root and Rhizome

This chromatogram is supplied for information only

**Detector:** UV, 286 nm

**Column:** 4.6-mm × 25-cm; 5 µm packing L1 (similar to ZORBAX SB C₁₈)

**Column temperature:** 25°±1

**Flow rate:** 1.2 mL/min

**Injection volume:** 10 µL

**Mobile phase:** 0.1% phosphoric acid in water and acetonitrile (78:22)