Identification of Easily Confused Species of Chinese Materia Medica in Hong Kong by Macroscopic and Microscopic Characteristics Project

Cortex Acanthopanacis versus Cortex Periplocae

Source

*Cortex Acanthopanacis is the dried root bark of Acanthopanax gracilistylus W. W. Smith in the family Araliaceae

Cortex Periplocae# is the dried root bark of Periploca sepium Bge. in the family Asclepiadaceae

Overview

Both Cortex Acanthopanacis and Cortex Periplocae are Chinese Materia Medica (CMM) listed in Schedule 2 of the Chinese Medicine Ordinance and the Chinese Pharmacopoeia (2020). According to the Species Systematization and Quality Evaluation of Commonly Used Chinese Traditional Drugs, the source of “Wu jia pi” is very complicated. Among them, Cortex Periplocae is used as “Wu jia pi” in most provinces and regions, especially in the Northern region of China, thus, it is also called the “Northern Wu jia pi”. According to the Chinese Pharmacopoeia, both Cortex Acanthopanacis and Cortex Periplocae can dispel wind and eliminate dampness, induce diuresis to alleviate edema, and strengthen sinews and bones. However, Cortex Acanthopanacis can also tonify and replenish the liver and kidney without toxicity, while Cortex Periplocae is toxic, therefore these two CMM should be used carefully.

Note:
*Its name in the Chinese Pharmacopoeia (2020) is “Acanthopanacis Cortex”.
#Its name in the Chinese Pharmacopoeia (2020) is “Periplocae Cortex”.
Cortex Acanthopanacis vs Cortex Periplocae

Key identification features

Macroscopic features of Cortex Acanthopanacis

- Outer surface is greyish-brown and has slightly twisted longitudinal wrinkles and irregular cracks
- Some with long horizontal lenticels observable
- Inner surface is light yellow or greyish-yellow and has fine longitudinal striations

1 cm
5 mm

◆ Slight aroma

Micro-morphological feature

A: Bark with yellowish-brown or brown dotted secretory canals scattered, some secretory canals are hollow

(Cut surface) 500 μm
Macrosopic features of Cortex Periplocae

Outer surface is greyish-brown or yellowish-brown and has irregular cracks. Periderm usually exfoliated in squamiform

Inner surface is light yellow or light yellowish-brown and has fine longitudinal striations which are relatively shallow

◆ Characteristic aroma

Micro-morphological feature

A: Bark usually observed with small scattered holes

(Cut surface) 500 μm
## Microscopic feature comparison of Cortex Acanthopanacis and Cortex Periplocae powder

<table>
<thead>
<tr>
<th></th>
<th>Cortex Acanthopanacis</th>
<th>Cortex Periplocae</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystal of calcium oxalate</td>
<td>Cluster of calcium oxalate scattered or present in the parenchymatous cell; polychromatic under the polarized light microscope</td>
<td>Prism of calcium oxalate scattered or present in the parenchymatous cell; polychromatic under the polarized light microscope</td>
</tr>
<tr>
<td>Fragment of secretory canal</td>
<td>Contain light yellow or yellowish-brown secretions</td>
<td>Absent</td>
</tr>
<tr>
<td>Lacteifer</td>
<td>Absent</td>
<td>Present in parenchyma, contains colourless droplet-like or granular secretions</td>
</tr>
</tbody>
</table>

*a. features under bright field; b. features under polarized light*
**Summary**

Major differences in the features between Cortex Acanthopanacis and Cortex Periplocae:

<table>
<thead>
<tr>
<th>Macroscopic and micro-morphological features</th>
<th>Cortex Acanthopanacis</th>
<th>Cortex Periplocae</th>
</tr>
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<tbody>
<tr>
<td>Outer surface</td>
<td>With longitudinal wrinkles and irregular cracks</td>
<td>With irregular cracks and periderm usually exfoliated in squamiform</td>
</tr>
<tr>
<td>Odour</td>
<td>Slight aroma</td>
<td>Characteristic aroma</td>
</tr>
<tr>
<td>Cut surface</td>
<td>With dotted secretory canals scattered</td>
<td>With small holes scattered</td>
</tr>
<tr>
<td>Crystal of calcium oxalate</td>
<td>Cluster of calcium oxalate</td>
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For more information, please refer to the [Hong Kong Chinese Materia Medica Standards website](https://www.cmro.gov.hk):

Acanthopanacis Cortex - Hong Kong Chinese Materia Medica Standards (Volume 6)
Periplocae Cortex - Hong Kong Chinese Materia Medica Standards (Volume 6)