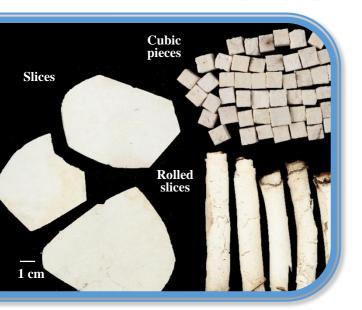
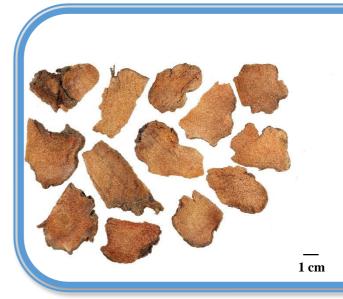
Identification of Easily Confused Species of Chinese Materia Medica in Hong Kong by Macroscopic and Microscopic Characteristics Project

Poria versus Rhizoma Smilacis Glabrae





Source

Poria Rhizoma Smilacis Glabrae*

is the dried sclerotium of Poria cocos (Schw.) Wolf in the family Polyporaceae is the dried rhizome of Smilax glabra Roxb. in the family Liliaceae

Overview

The Chinese Materia Medica (CMM) Poria is only listed in the Chinese Pharmacopoeia (2020), while Rhizoma Smilacis Glabrae is listed in both the Schedule 2 of the Chinese Medicine Ordinance and the Chinese Pharmacopoeia (2020). According to *Zhong hua ben cao*, Poria was first endorsed in the name of "Fu ling" in the Wu shi er bing fang. According to Species Systematization and Quality Evaluation of Commonly Used Chinese Traditional Drugs, the original name of Rhizoma Smilacis Glabrae was "Yu yu liang", and it was first endorsed in Ben cao jing ji zhu. Furthermore, the name "Tu fu ling" was originated from Ben cao gang mu. According to Chinese Pharmacopoeia, Poria can induce diuresis to drain dampness, fortify the spleen and quiet the heart; while Rhizoma Smilacis Glabrae can detoxify, eliminate dampness, free the joints. Although the Chinese names of these two CMM differ only by one word, their source and efficacy varies significantly, therefore, should be used accordingly.

Note:

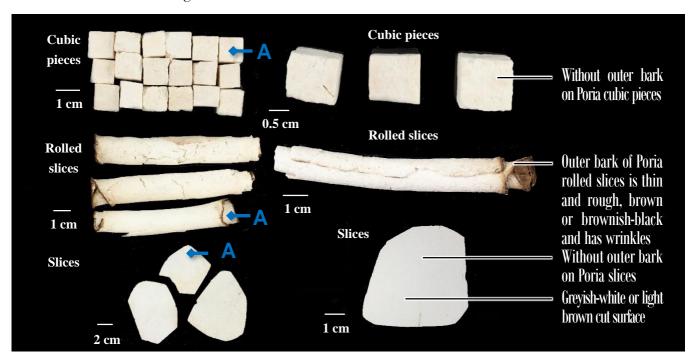
^{*}Its name in the Chinese Pharmacopoeia (2020) is "Smilacis Glabrae Rhizoma".

Key identification features

Macroscopic features of Poria decoction pieces

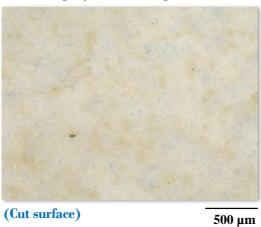


◆ Cubic, roll-like or irregular thick slices



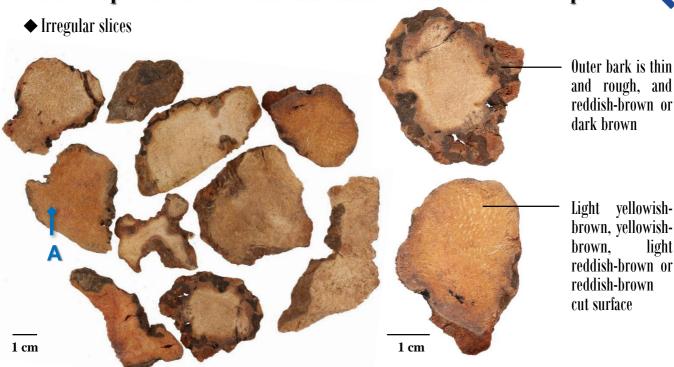
Micro-morphological feature

A: White or light yellow, with light brown striations



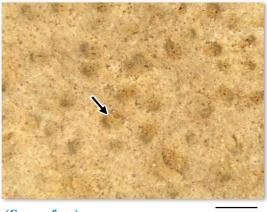






Micro-morphological feature

A: With observable dotted vascular bundles



(Cut surface)

1mm

Microscopic feature comparison of Poria decoction pieces and Rhizoma Smilacis Glabrae decoction pieces powder



| | Poria decoction pieces | Rhizoma Smilacis Glabrae decoction pieces |
|-------------------------------|--|--|
| Hypha# | Accounted for the majority of the powder, with 2 forms. One type is colourless and irregularly granular or like masses which obtusely branched at the end(1); another type is colourless, white or light brown, slender and slightly curved, some with branches(2) | Absent |
| Starch granule | Absent | Numerous, simple granule sub-spherical, polygonal or sub-square, hilum slit-shaped, stellate, trifurcate or dotted, large granule with striations observable; compound granule consists of 2-4 units; black and cruciate-shaped under the polarized light microscope |
| Raphide of calcium oxalate | Absent | Present in mucilage cells or scattered; polychromatic under the polarized light microscope |

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

50 µm

^{*}Prepare the slide by adding glycerol acetic acid test solution without heating and observe.

Summary

Major differences in the features between of Poria decoction pieces and Rhizoma Smilacis Glabrae decoction pieces:

| | | Poria decoction pieces | Rhizoma Smilacis Glabrae decoction pieces |
|---|----------------------------|--|---|
| Macroscopic and micro-morphological features | Shape | Cubic, roll-like or irregular thick slices | Irregular slices |
| | Cut surface | White or light yellow, with light brown striations | With observable dotted vascular bundles |
| Microscopic features | Hypha | Present | Absent |
| | Starch granule | Absent | Present |
| | Raphide of calcium oxalate | ${f Absent}$ | Present |

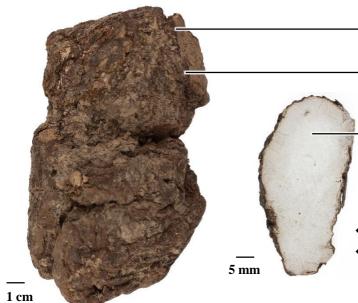
For more information, please refer to the <u>Hong Kong Chinese Materia Medica</u> Standards website:



Smilacis Glabrae Rhizoma - Hong Kong Chinese Materia Medica Standards (Volume 4)

Additional information

Photo of crude Poria



Sub-spherical, elliptical, flattened round or irregular masses, varies in size

Outer bark is thin and rough, brown to blackish-brown and has distinct wrinkles

Fracture is granular and some has fissures. Outer layer is light brown, while the inner part is white, with few are light red. Some has the pine root in the centre

- Heavy and hard
- Slight odour. Weak taste, viscous upon chewing

Photo of crude Rhizoma Smilacis Glabrae

1 cm

With rounded bud scar at the apex of the branches

With hard remnants of rootlet

Appears cylindrical, slightly flat or irregularly slat-shaped and have nodose protuberances and short branches

Surface is yellowish-brown or greyish-brown and uneven

Some outer bark has irregular cracks and remained scale leaves

Cut surface is whitish to light reddish-brown and starchy

With observable dotted vascular bundles and numerous small bright dots

- Slightly tough. Dust wafts when broken. Mucilaginous after moistened with water
- ◆ Slight odour, slightly sweet and astringent taste

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