

# Rhizoma Polygonati (steamed Polygonati Rhizoma)

versus

# Radix Rehmanniae (Rehmanniae Radix Praeparata)

Thick slices



Pressed slices



## Source

### \*Rhizoma Polygonati (steamed Polygonati Rhizoma)

is the dried and processed rhizome of  
*Polygonatum kingianum* Coll. et Hemsl.,  
*P. sibiricum* Red. or  
*P. cyrtonema* Hua  
in the family Liliaceae

### Radix Rehmanniae<sup>#</sup> (Rehmanniae Radix Praeparata)

is the dried and processed root tuber of  
*Rehmannia glutinosa* Libosch.  
in the family Scrophulariaceae

## Overview

Rhizoma Polygonati and Radix Rehmanniae are both listed in Schedule 2 of the Chinese Medicine Ordinance and the Chinese Pharmacopoeia (2020). According to *Xiang gang zhong yao cai tu jian*, steam processed Rhizoma Polygonati was usually used for medicinal purpose in Hong Kong. According to *Zhong hua ben cao*, the steaming process can eliminate numbing taste hence avoiding irritation to the pharynx and the larynx. On the other hand, Rehmanniae Radix Praeparata was the processed form of Radix Rehmanniae and it is listed as an individual Chinese Materia Medica (CMM) in the Chinese Pharmacopoeia. Both CMM are black and sticky decoction pieces, which is difficult to distinguish at a glance. According to the Chinese Pharmacopoeia, Rhizoma Polygonati has the functions of tonifying qi and nourishing yin, fortifying the spleen, moistening the lung and replenishing the kidney, while Rehmanniae Radix Praeparata has the functions of tonifying blood, enriching yin, securing essence and replenishing the marrow. The two CMM have different functions, therefore they should be used accordingly.

Note:

\*Its name in Chinese Pharmacopoeia (2020) is “Polygonati Rhizoma”.

<sup>#</sup>Its name in Chinese Pharmacopoeia (2020) is “Rehmanniae Radix”.

## Key identification features

### Macroscopic features of Rhizoma Polygonati (steamed Polygonati Rhizoma) decoction pieces

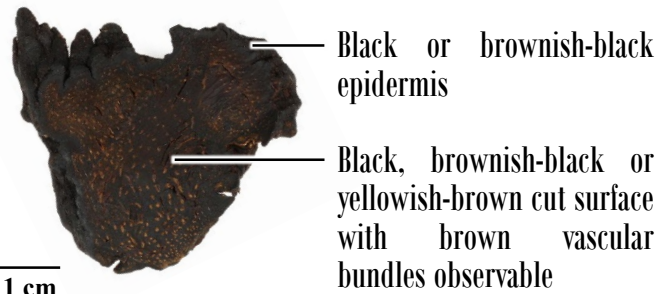


Thick slices

◆ Irregularly-shaped thick slices



Thick slices

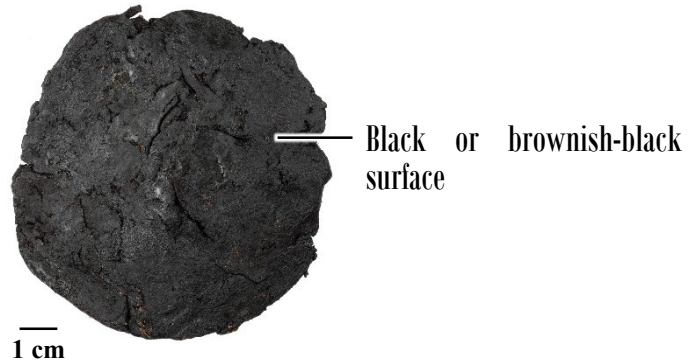


Pressed slices

◆ Sub-rounded and flat masses



Pressed slices



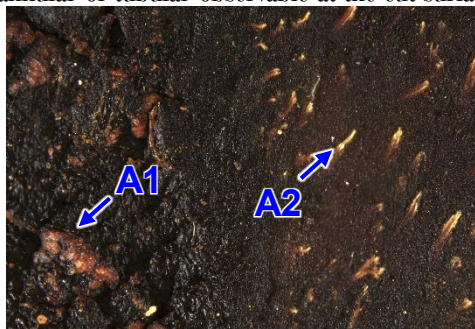
◆ Lustrous and viscous surface

### Micro-morphological features

Thick slices

A1: Epidermis with wrinkles and some with annulate nodes(→) observable

A2: With vascular bundles which mostly appear annular or tubular observable at the cut surface



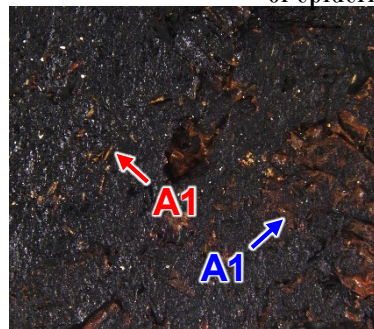
(Surface)

2 mm

Pressed slices

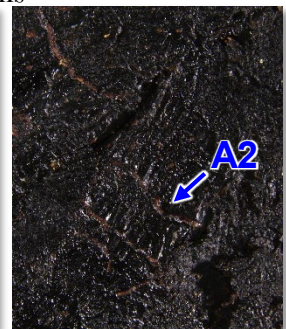
A1: Both sides with scattered fragments of epidermis (→) and linear vascular bundle(→) observable

A2: Annulate node is occasionally found on fragments of epidermis



(Surface)

1 mm



(Surface)

1 mm



## Macroscopic features of Radix Rehmanniae (Rehmanniae Radix Praeparata) decoction pieces



- ◆ Sub-rounded or irregular and flat masses



1 cm



Can be separated into small masses



Black surface

1 cm

- ◆ Lustrous and viscous surface

### Micro-morphological features

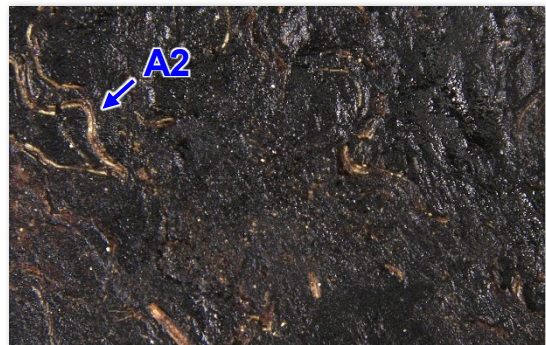
A1: Usually has epidermis with wrinkles(→) on one side

A2: Scattered linear vascular bundles are observed on the other side



(Surface)

2 mm

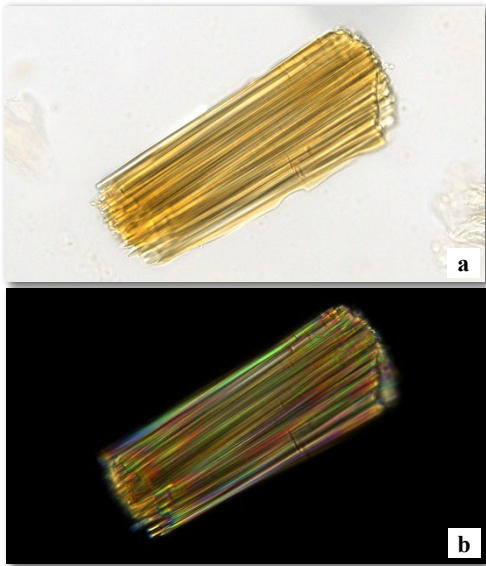


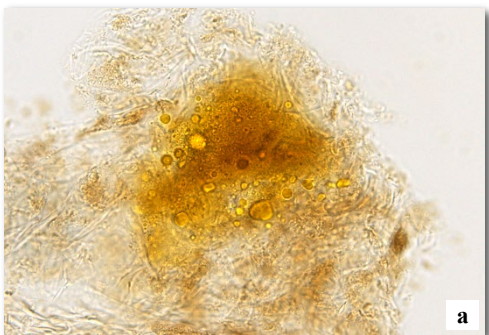


(Surface)

2 mm



**Microscopic feature comparison of Rhizoma Polygonati (steamed Polygonati Rhizoma) and Radix Rehmanniae (Rehmanniae Radix Praeparata) decoction pieces powder<sup>%</sup>**

	<b>Rhizoma Polygonati (steamed Polygonati Rhizoma) decoction pieces</b>	<b>Radix Rehmanniae (Rehmanniae Radix Praeparata) decoction pieces</b>
<b>Raphide of calcium oxalate</b>	 <p>Mostly in bundles, yellowish-brown or colourless; polychromatic under the polarized light microscope</p>	 <p>Absent</p>
<b>Secretory cell</b>	 <p>Absent</p>	 <p>Present in parenchymatous cell, mostly broken, containing yellowish-brown or reddish-brown droplet-like or granular substance</p>

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

50 μm

Note:  
<sup>%</sup>Due to the high viscosity of the steamed Rhizoma Polygonati and Rehmanniae Radix Praeparata, it is difficult to pulverise the sample. It is suggested to freeze the sample until hardened prior to pulverising the sample, or alternatively, to prepare the slide for observation by grinding the sample with water.

## Summary

Major differences in the features between Rhizoma Polygonati (steamed Polygonati Rhizoma) and Radix Rehmanniae (Rehmanniae Radix Praeparata) decoction pieces :

		Rhizoma Polygonati (steamed Polygonati Rhizoma) decoction pieces (Thick slices)	Rhizoma Polygonati (steamed Polygonati Rhizoma) decoction pieces (Pressed slices)	Radix Rehmanniae (Rehmanniae Radix Praeparata) decoction pieces
Macroscopic and micro-morphological features	Appearance	Irregularly-shaped thick slices	Sub-rounded and flat masses	Sub-rounded or irregular and flat masses, can be separated into small masses
	Surface	Epidermis with wrinkles; cut surface with vascular bundles observable	Both sides with scattered fragments of epidermis and vascular bundle observable	Usually has epidermis on one side and with vascular bundles observable on the other side
Microscopic features	Raphide of calcium oxalate	Present		Absent
	Secretory cell	Absent		Present

For more information, please refer to the [Hong Kong Chinese Materia Medica Standards website](#):



Radix Rehmanniae - Hong Kong Chinese Materia Medica Standards (Volume 3)  
Polygonati Rhizoma - Hong Kong Chinese Materia Medica Standards (Volume 10)



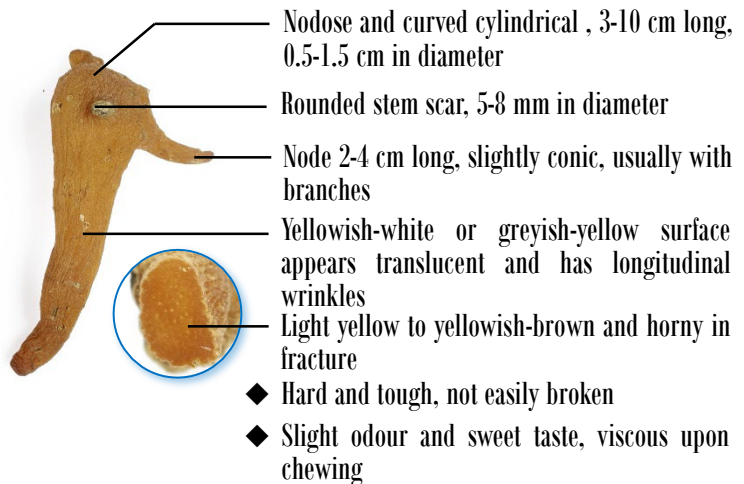
## Additional information

### Photo of crude Rhizoma Polygonati

*P. sibiricum*



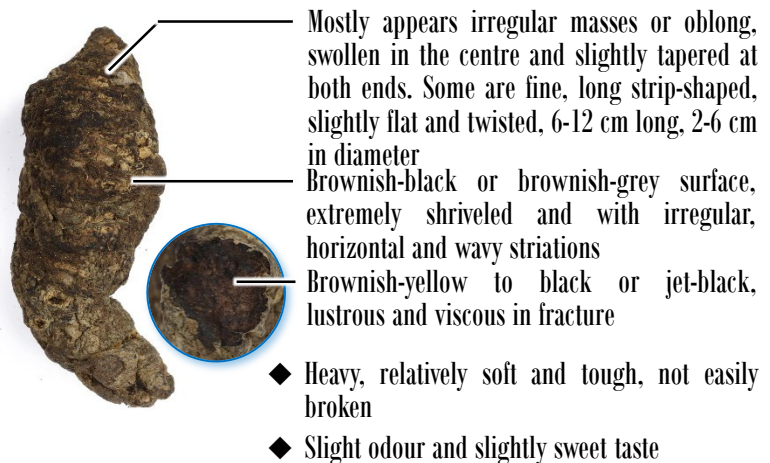
1 cm



### Photo of crude Radix Rehmanniae



1 cm



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