

## Macroscopic and Microscopic Identification of Cortex type of Decoction Pieces Commonly Found in Hong Kong



# Phellodendri Chinensis Cortex<sup>#</sup>

**Source** The dried bark of *Phellodendron chinense* Schneid. in the family Rutaceae

**Property  
and Flavour** Cold; bitter

**Meridian  
Affinity** Kidney and bladder meridians

**Actions** To clear heat and dry dampness, reduce fire and relieve bone-steaming sensation, remove toxins and treat sores

**Production  
Area** Mainly produced in Sichuan, Guizhou, Hubei, Yunnan, Shaanxi, Jiangxi, Zhejiang, etc.

**Note:**

<sup>#</sup> As listed in Schedule 2 of the Chinese Medicine Ordinance, the plant source for Cortex Phellodendri (*Huangbo*) can be *Phellodendron chinense* (customarily known as *Chuanhuangbo*) and *P. amurense* (customarily known as *Guanhuangbo*). These two plant sources are listed as separate Chinese materia medica (CMM) in the Chinese Pharmacopoeia (2025 Edition), and this project establishes separate monographs for each of them. Accordingly, the names and sources of these CMM are referenced from the Chinese Pharmacopoeia (2025 Edition).



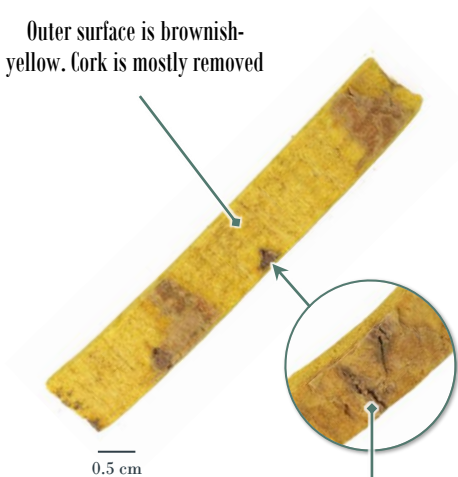


## Macroscopic Identification Features

### Phellodendri Chinensis Cortex (Slivers)

**Shape** Appears strip-shaped, straight or slightly curved

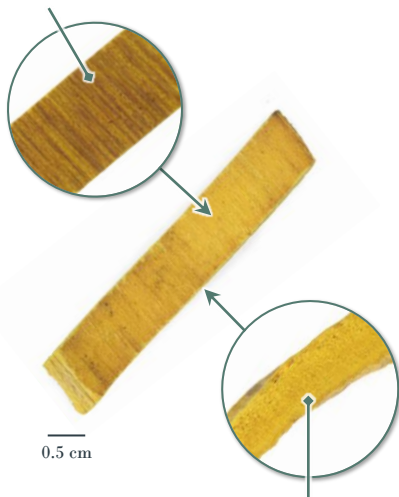
Outer surface is brownish-yellow. Cork is mostly removed



Cork remained appears yellowish-brown, brown or greyish-brown, non-springy



Inner surface is yellowish-brown or light brown and usually has fine and straight striations



Cut surface is brownish-yellow



**Texture** Hard

**Fracture** Fibrous, slightly laminated



0.2 cm

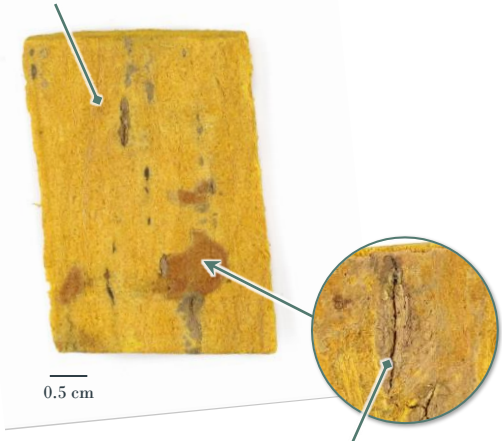
**Odour** Slight



## Phellodendri Chinensis Cortex (Slices)

**Shape** Appears rectangular or square, usually slightly curved

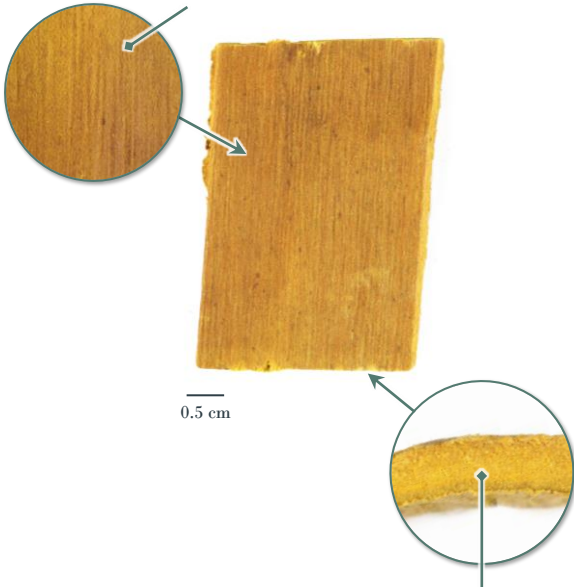
Outer surface is brownish-yellow.  
Cork is mostly removed



Cork remained appears yellowish-brown, brown or greyish-brown,  
non-springy



Inner surface is yellowish-brown or light brown and usually has fine and straight striations

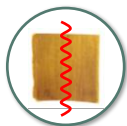


Cut surface is brownish-yellow



**Texture** Hard

**Fracture** Fibrous, slightly laminated



0.5 cm

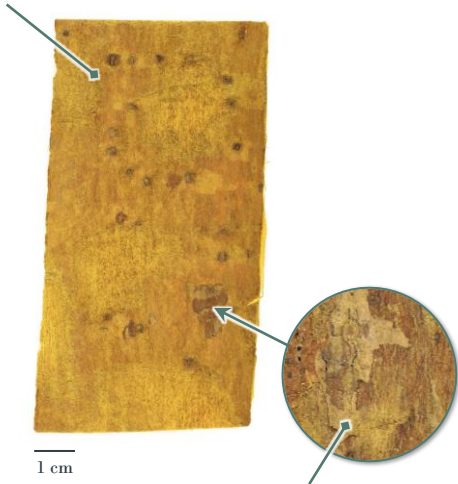
**Odour** Slight



## Phellodendri Chinensis Cortex (Domino-shaped slices)

**Shape** Usually appears rectangular and flat

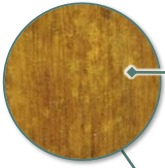
Outer surface is brownish-yellow.  
Cork is mostly removed



Cork remained appears yellowish-brown,  
brown or greyish-brown, non-springy



## Phellodendri Chinensis Cortex



Inner surface is yellowish-brown or light brown and usually has fine and straight striations



1 cm



Cut surface is brownish-yellow



**Texture** Hard and fragile

**Fracture** Fibrous, slightly laminated



0.5 cm

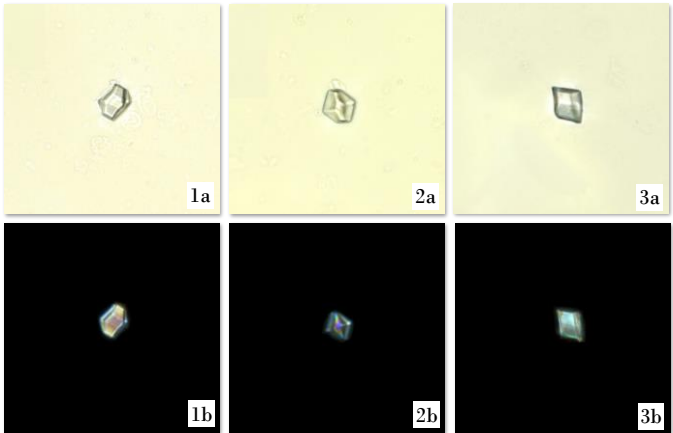
**Odour** Slight



# ■ ■ ■ Features of Simplified Powder ■ Microscopic Identification

## -Crystal-

### Prism of calcium oxalate

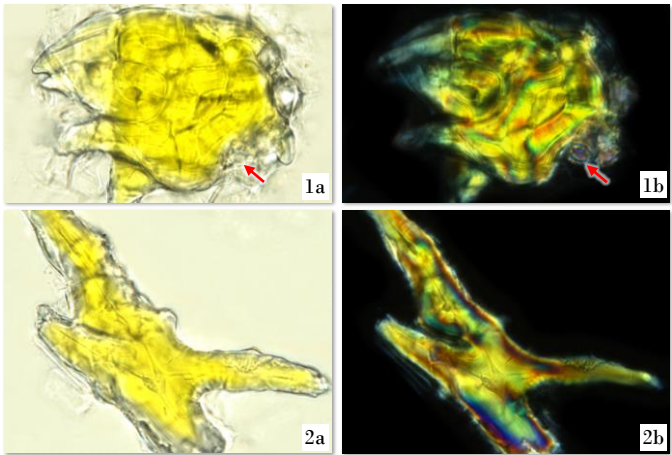


50 μm

Frequently found, scattered or present in crystal cell, appears double-conical (1), polygonal (2) or rhombic (3); polychromatic under polarized light microscope

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



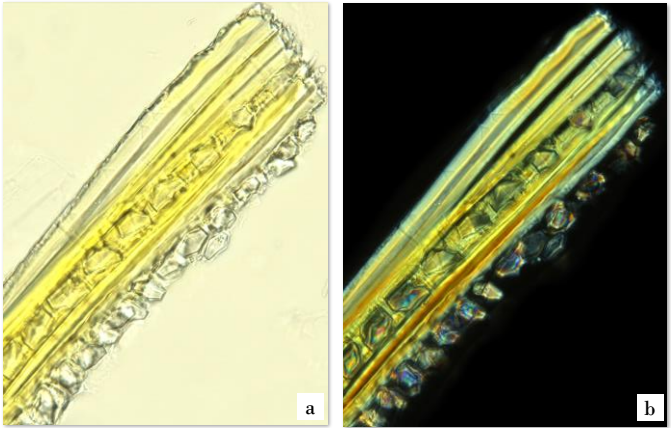
**-Sclerenchyma-****Stone cell**50  $\mu$ m

Mostly in groups, usually surrounded by prism of calcium oxalates ( $\rightarrow$ ), yellow or light yellow, mostly appears irregular, sub-polygonal, sub-rounded or sub-fusiform (1), sometimes branched (2), wall is thick or extremely thick, usually with striations, some with pit canals and pits; polychromatic or bright yellow under polarized light microscope

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



## Crystal fibre



50 µm

Fibre bundle is usually surrounded by crystal cells to form crystal fibre, fibre is yellow or light yellow, wall is extremely thick, narrow lumen; polychromatic or bright yellow under polarized light microscope

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



# Additional Features of Powder Microscopic Identification

## -Secretory tissue-

### Mucilage cell



50  $\mu\text{m}$

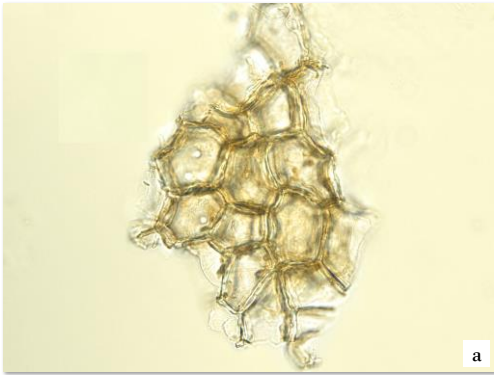
Scattered or present in parenchyma, appears sub-elliptical or sub-rounded, wall is thin

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



**-Protective tissue-**

**Cork cell**



50  $\mu\text{m}$

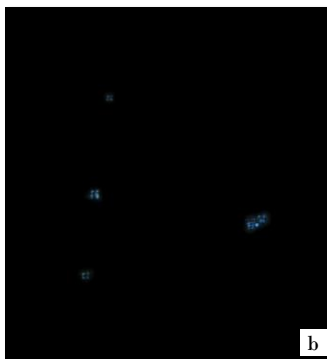
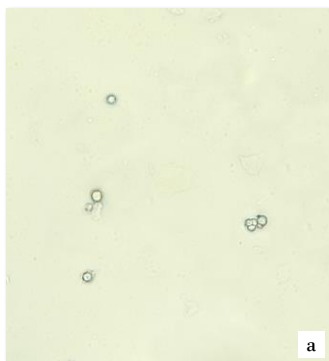
Barely found, occasionally found, or absent, brown or yellowish-brown, appears sub-polygonal in surface view

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



## -Starch-

### Starch granule



50  $\mu$ m

Barely found or occasionally found, small, simple granule appears sub-rounded, some have dotted hilum observable, compound granule is fewer, consists of 2-4 units; relatively dim, and black and cruciate-shaped under polarized light microscope

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





## Key Identification Features

### - Macroscopic features -

- ◇ Cork is mostly removed. Cork remained appears yellowish-brown, brown or greyish brown, non-springy
- ◇ Cut surface is brownish-yellow

### - Powder microscopic features -

- ◇ Prism of calcium oxalate is frequently found and appears double-conical, polygonal or rhombic
- ◇ Stone cell is mostly in groups and mostly appears irregular, sub-polygonal, sub-rounded or sub-fusiform, sometimes branched
- ◇ Fibre is usually surrounded by crystal cells to form crystal fibre

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

Cortex Phellodendri Chinensis – HKCMMS (Vol 1)

Government Chinese Medicines Testing Institute

Department of Health

Enquiry hotline: 2509 5809

Website: [www.cmro.gov.hk](http://www.cmro.gov.hk)

The information in this pamphlet may be re-disseminated or reproduced, provided that the Government Chinese Medicines Testing Institute (GCMTI), as the source of information, is acknowledged and that the re-dissemination or reproduction is for non-commercial use. Any reproduction, adaptation, distribution, dissemination or making available of the information in this pamphlet for commercial use is strictly prohibited unless prior written authorisation is obtained from the GCMTI.