

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



# Phellodendri Amurensis Cortex<sup>#</sup>



**Source** The dried bark of *Phellodendron amurense* Rupr. 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 Eastern region and Northern mountainous area of Northeast China, provinces of North China, Henan, Northern region of Anhui, etc.

**Note:**

# 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).



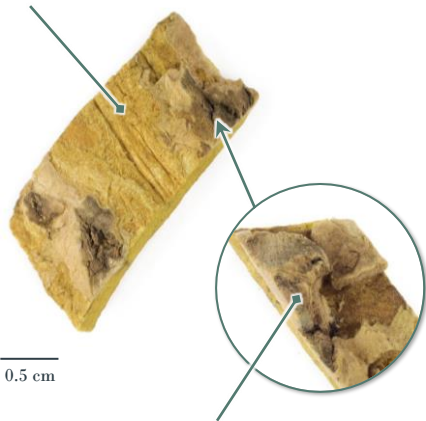


## Macroscopic Identification Features

### Phellodendri Amurensis Cortex (Slivers)

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

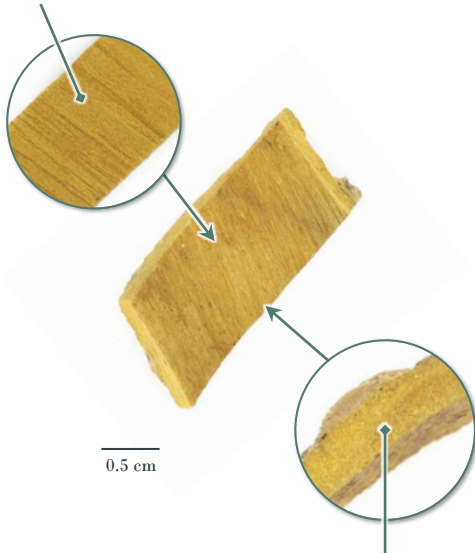
Outer surface is light brownish-yellow or brownish-yellow. Cork is mostly removed



Cork remained appears greyish-brown, greyish-white or brown, usually relatively thick and slightly springy



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



Cut surface is light brownish-yellow or brownish-yellow



**Texture** Hard

**Fracture** Fibrous, slightly laminated



0.2 cm

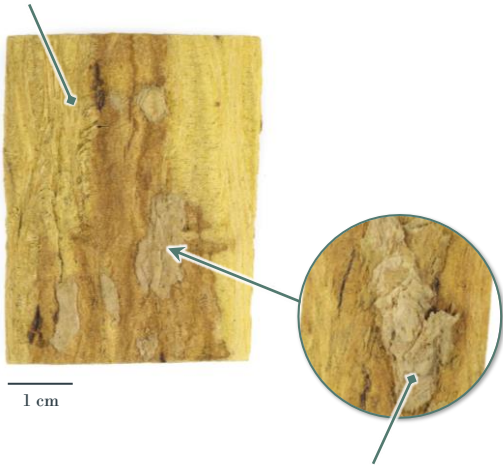
**Odour** Slight



## Phellodendri Amurensis Cortex (Slices)

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

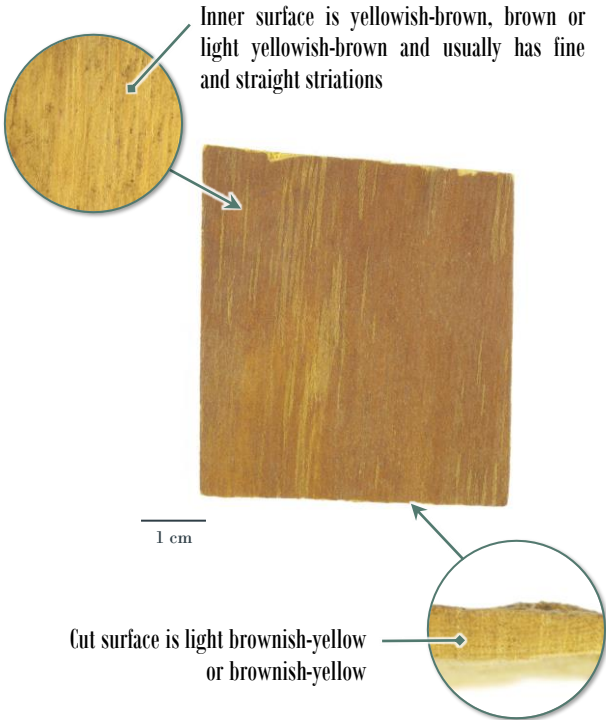
Outer surface is light brownish-yellow or brownish-yellow. Cork is mostly removed



Cork remained appears greyish-brown, greyish-white or brown, usually relatively thick and slightly springy



## Phellodendri Amurensis Cortex



**Texture** Hard

**Fracture** Fibrous, slightly laminated



0.5 cm

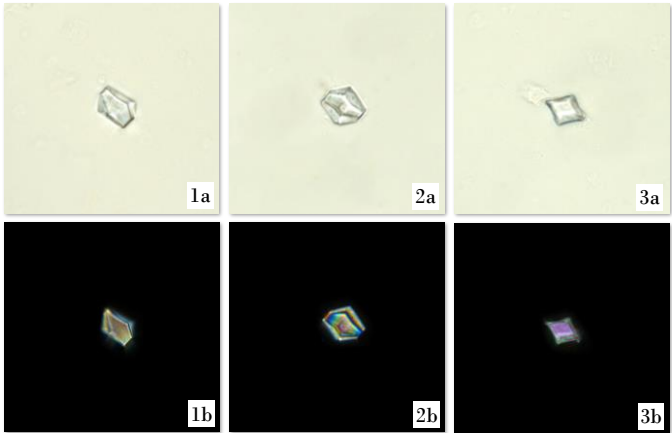
**Odour** Slight



# ■ ■ ■ Features of Simplified Powder ■ Microscopic Identification

## - Crystal -

### Prism of calcium oxalate



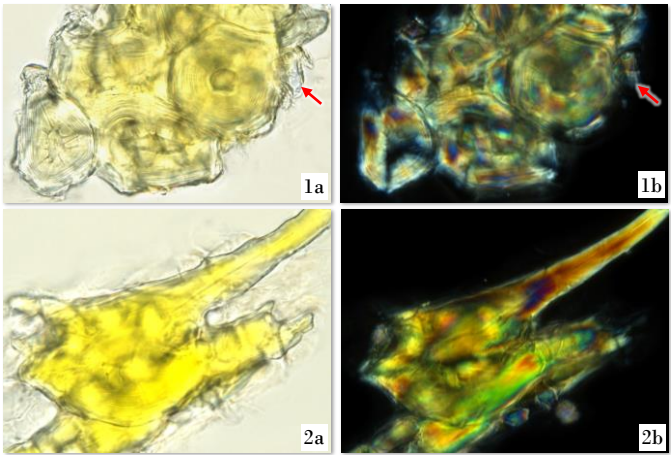
Frequently found, scattered or present in crystal cell, appears double-conical (1), polygonal (2) or rhombic (3); polychromatic under polarized light microscope

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



## - Sclerenchyma -

### Stone cell



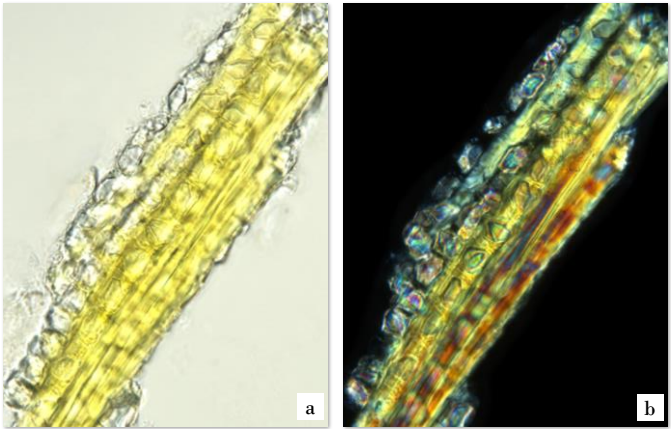
50 μm

Mostly in groups, usually surrounded by prism of calcium oxalates (→), yellow or light yellow, mostly appears irregular, sub-polygonal, sub-rounded or sub-fusiform (1), occasionally 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  $\mu\text{m}$

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  $\mu\text{m}$

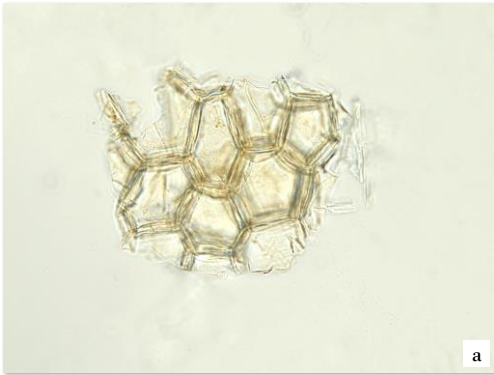
Scattered or present in parenchyma, appears sub-elliptical or sub-rounded, wall is thin

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



- Protective tissue -

**Cork cell**



50 μm

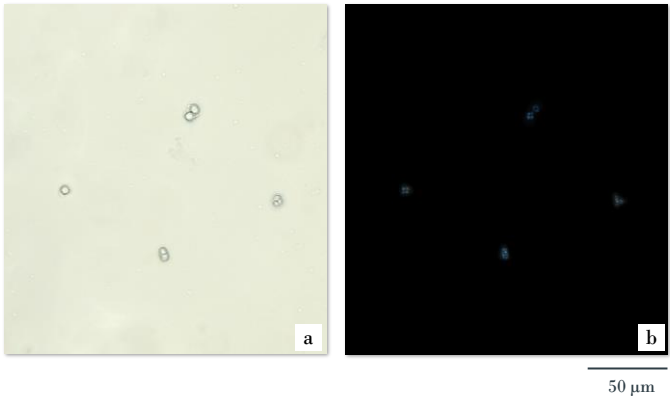
Barely found or occasionally found, brown or yellowish-brown, appears sub-polygonal in surface view

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



## - Starch -

### Starch granule



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 greyish-brown, greyish-white or brown, usually relatively thick and slightly 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, occasionally 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 Amurensis — HKCMMS (Vol 1)

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