

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



Cortex Ailanthi*

Source The dried root bark or stem bark of *Ailanthus altissima* (Mill.) Swingle in the family Simaroubaceae

Property and Flavour Cold; bitter and astringent

Meridian Affinity Large intestine, stomach and liver meridians

Actions Clear heat and dry dampness, astringe and stop leucorrhoea, stop diarrhoea, stop bleeding

Production Area Mainly produced in Zhejiang, Hebei, Hubei, Jiangsu, Tianjin, Beijing, etc.

Note:

* Its name in Chinese Pharmacopoeia (2025 Edition) is “Ailanthi Cortex”.

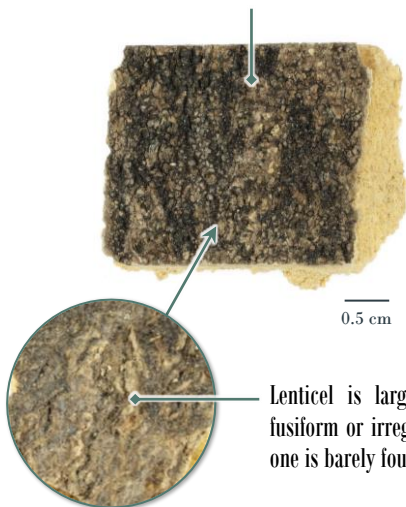




Macroscopic Identification Features

Shape Flat slices, appears rectangular or irregular

Cork on the outer surface is greyish-brown, brown or blackish-brown and rough. Some have cracks

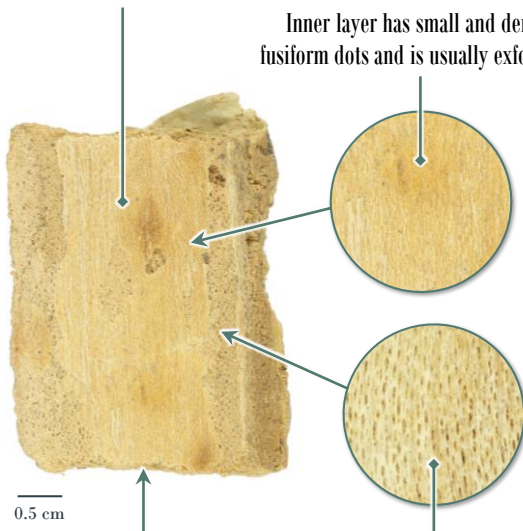


Lenticel is large and appears sub-fusiform or irregular, in which intact one is barely found



Inner surface is yellowish-white or yellowish-brown

Inner layer has small and dense fusiform dots and is usually exfoliated



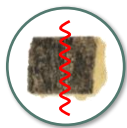
Area with inner layer exfoliated has distinct fusiform small holes

Cut surface is yellowish-white or yellowish-brown and usually has irregular small holes



Texture Hard, not easily broken

Fracture Granular



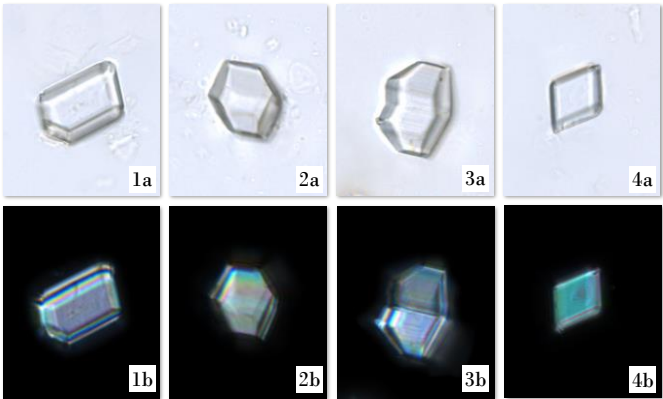
Odour Slight



Features of Simplified Powder Microscopic Identification

- Crystal -

Prism of calcium oxalate



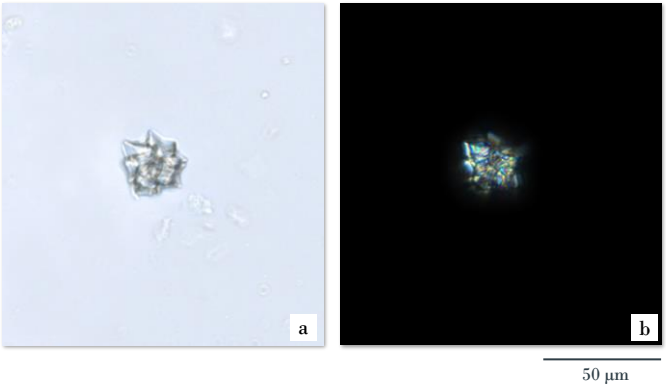
50 μm

Scattered or present in stone cell, appears polygonal (1), polyhedral (2), double-conical (3) or rhombic (4); polychromatic under polarized light microscope

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



Cluster of calcium oxalate



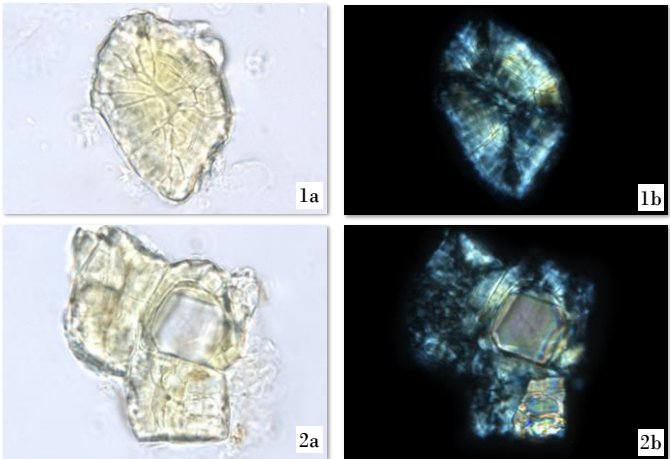
Mostly scattered, angle is usually thick and short in relative; polychromatic under polarized light microscope

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



- Sclerenchyma -

Stone cell



50 µm

Colourless or light yellow, in groups or singly scattered, appears sub-square, sub-rectangular, sub-polygonal or irregular, wall is slightly thick or thick, usually with pit canals and striations, sometimes with pits (1), some contain prism of calcium oxalate (2); bright white or orange-yellow under polarized light microscope

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

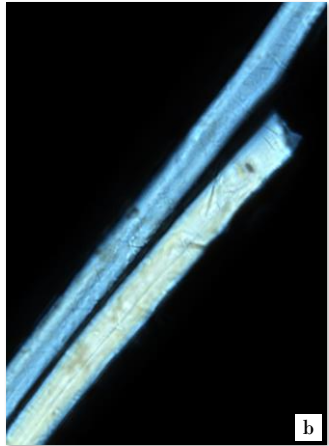




Additional Features of Powder Microscopic Identification

- Sclerenchyma -

Fibre



50 μm

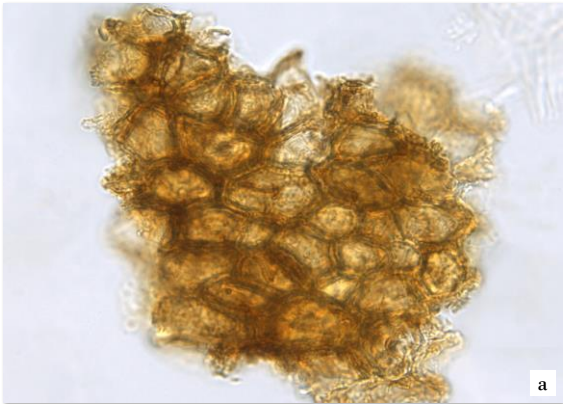
In bundles or singly scattered, wall is extremely thick, narrow lumen; bright white, orange-yellow or polychromatic under polarized light microscope

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



- Protective tissue -

Cork cell



50 μ m

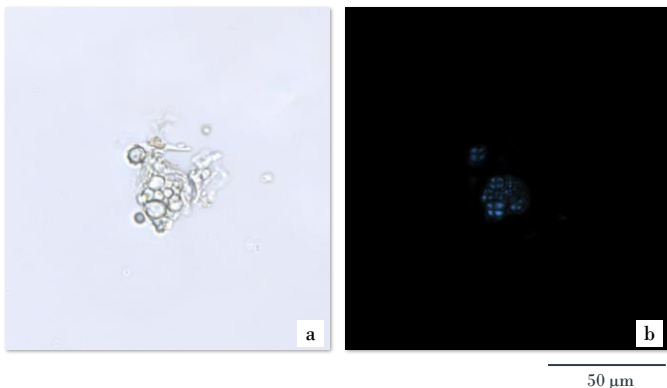
Brown or yellowish-brown, appears polygonal or sub-polygonal in surface view

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



- Starch -

Starch granule



Barely found, mainly is simple granule, appears sub-rounded; 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 on the outer surface is rough and has large lenticels which appear sub-fusiform or irregular
- ◇ Inner surface has fusiform dots or small holes
- ◇ Fracture is granular

- Powder microscopic features -

- ◇ Prism of calcium oxalate appears polygonal, polyhedral, double-conical or rhombic
- ◇ Angle of cluster of calcium oxalate is usually thick and short in relative
- ◇ Stone cell has slightly thick or thick wall. Some stone cells contain prism of calcium oxalate

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