

Folium Mahoniae

versus

Folium Ilicis Cornutae



Source

Folium Mahoniae

is the dried leaf of
Mahonia bealei (Fortunue) Carr.,
M. japonica (Thunb.) DC. or
M. fortunei (Lindl.) Fedde
in the family Berberidaceae

Folium Ilicis Cornutae*

is the dried leaf of
Ilex cornuta Lindl. ex Paxt.
in the family Aquifoliaceae

Overview

The Chinese Pharmacopoeia (2020) and Schedule 2 of the Chinese Medicine Ordinance recorded Folium Ilicis Cornutae but not Folium Mahoniae. According to the *Species Systematization and Quality Evaluation of Commonly Used Chinese Traditional Drugs*, current commodity goods of “Gong lao ye” include plants from the family Aquifoliaceae and the genus *Mahonia* of the family Berberidaceae respectively. Both Chinese Materia Medica (CMM) were recorded and named as “*Shi da gong lao ye*” in literature since Qing Dynasty, leading to confusion. According to the *Quality Standards of Chinese Materia Medica in Guizhou Province*, Folium Mahoniae can nourish yin and clear heat, as well as resolve phlegm and suppress cough. On the other hand, Folium Ilicis Cornutae can clear heat and tonify yin, replenish the kidney and pacify the liver, according to the Chinese Pharmacopoeia. As the two CMM have different functions, they should be used distinctly.

Note:

*Its name in the Chinese Pharmacopoeia (2020) is “Ilicis Cornutae Folium”.

Key identification features

Macroscopic features of Folium Mahoniae decoction pieces



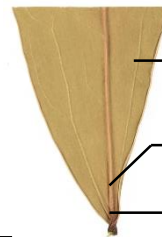
1 cm



Acuminate apex

Dark brown, yellowish-brown, dark greenish-brown or yellowish-green upper surface

Slightly revolute margin usually with serrae on both sides



Lower surface in lighter colour

5-7 palmately veined

Base is cuneate or sub-rounded and some are oblique

5 mm

Micro-morphological features

A: With linear striations



(Upper surface)

200 µm

B: Usually with 3 vascular bundles



(Transverse section of midrib)

200 µm

Macroscopic features of Folium Ilicis Cornutae



1 cm



1 cm

With relatively large and hard serrae. 3 serrae are located at the apex while the apical one usually bent downward

Yellowish-green, greyish-green, brownish-green or dark brownish-green upper surface

Light yellowish-green, greyish-green or dark greyish-green lower surface

Revolute margin usually with 1-3 hard serrae on both sides

Pinnate vein

Truncate or cuneate base

Micro-morphological features

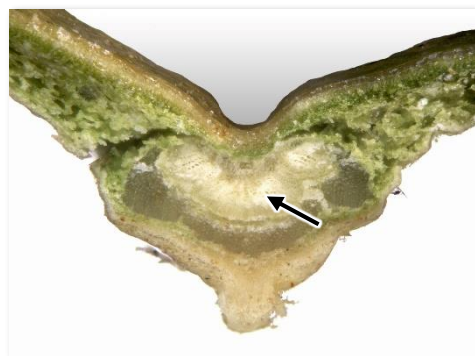
A: With reticulate striations



(Upper surface)

400 μm

B: With 1 vascular bundle

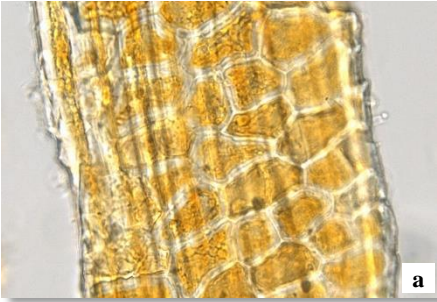
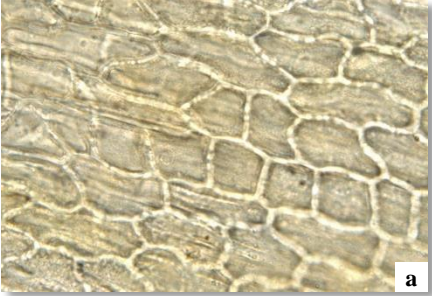
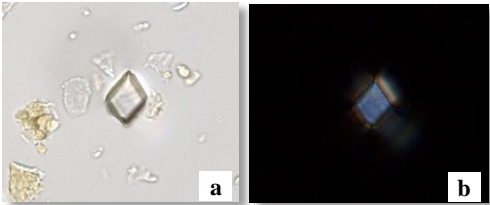


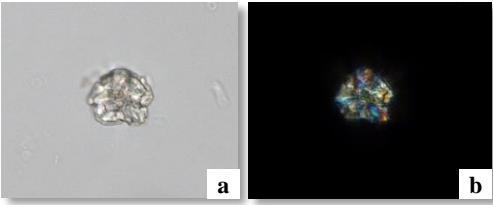


(Transverse section of midrib)

200 μm

Microscopic feature comparison of Folium Mahoniae decoction pieces and Folium Ilicis Cornutae powder



	Folium Mahoniae decoction pieces	Folium Ilicis Cornutae
Upper epidermal cell	 <p>Sub-rectangular or irregular in surface view, slightly sinuous anticlinal wall, frequently adhere to fibre in groups</p>	 <p>Sub-rectangular or polygonal in surface view, straight or slightly sinuous anticlinal wall, mostly with distinct pit canals</p>
Prism of calcium oxalate	 <p>Scattered; polychromatic under the polarized light microscope</p>	 <p>Absent</p>
Cluster of calcium oxalate	 <p>Absent</p>	 <p>Scattered or present in parenchymatous cell, frequently found; polychromatic under the polarized light microscope</p>

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

50 µm

Summary

Major differences in the features between Folium Mahoniae decoction pieces and Folium Ilicis Cornutae:

		Folium Mahoniae decoction pieces	Folium Ilicis Cornutae
Macroscopic and micro-morphological features	Leaf base	Cuneate or sub-rounded and oblique	Truncate or cuneate
	Serra of leaf margin	Relatively small	Relatively large
	Upper surface	With linear striations	With reticulate striations
Microscopic features	Upper epidermal cell	Usually adheres to fibres	Does not adhere to fibres
	Prism of calcium oxalate	Present	Absent
	Cluster of calcium oxalate	Absent	Present

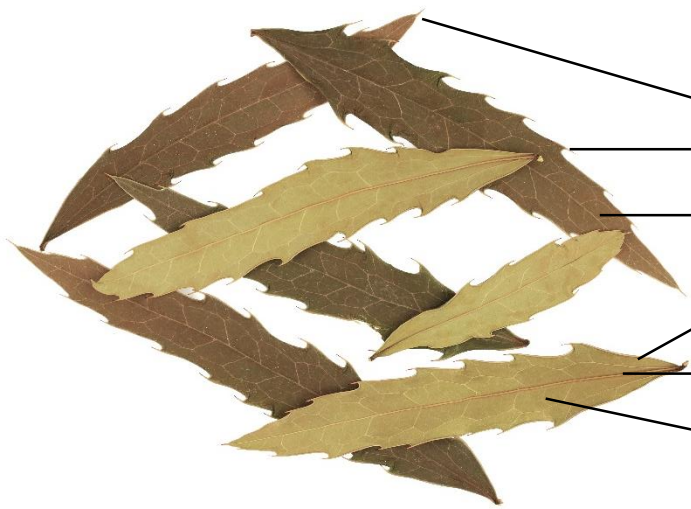
For more information, please refer to the [Hong Kong Chinese Materia Medica Standards website](#):



Ilicis Cornutae Folium - Hong Kong Chinese Materia Medica Standards (Volume 7)

Additional information

Photo of crude Folium Mahoniae



- ◆ Broad ovate or ovate-long elliptical, 4-12 cm long, 2.5-5 cm wide
- ◆ Acuminate apex with sharp spine
- ◆ Spinose margin
- ◆ Yellowish-green upper surface
- ◆ Rounded or nearly truncate and oblique base
- ◆ With 5 distinct longitudinal veins
- ◆ Light yellowish-green lower surface

- ◆ Leathery leaf with luster
- ◆ Hard and fragile
- ◆ Slight odour and slightly bitter taste

1 cm



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