

Folium Isatidis versus Folium Polygoni Tinctorii



Source

***Folium Isatidis**
is the dried leaf of
Isatis indigotica Fort.
in the family Cruciferae

Folium Polygoni Tinctorii#
is the dried leaf of
Polygonum tinctorium Ait.
in the family Polygonaceae

Overview

Folium Isatidis and Folium Polygoni Tinctorii are both listed in Schedule 2 of the Chinese Medicine Ordinance and Chinese Pharmacopoeia (2020). Many commodities named “*Da qing ye*” are often found to be from different species. According to the research by *Zhong hua ben cao*, there are five different kinds of Chinese Material Medica (CMM) documented as “*Lan*” in *Ben cao gang mu* of the Ming Dynasty, which include *Isatis indigotica*, *Polygonum tinctorium* and *Baphicacanthus cusia*, etc. According to the *Species Systematization and Quality Evaluation of Commonly Used Chinese Traditional Drugs*, the main source of “*Da qing ye*” is the leaf of *Isatis indigotica* in the family Cruciferae; while the Northeast and North region of China had customarily used the leaf of *Polygonum tinctorium* in the family Polygonaceae. However, the chemical composition of the two CMM differs. According to the Chinese Pharmacopoeia, both CMM can clear heat and detoxify and cool blood and resolve macula. As the two CMM vary in source and chemical compositions, they should be used accordingly.

Note:

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

#Its name in the Chinese Pharmacopoeia (2020) is “Polygoni Tinctorii Folium”.

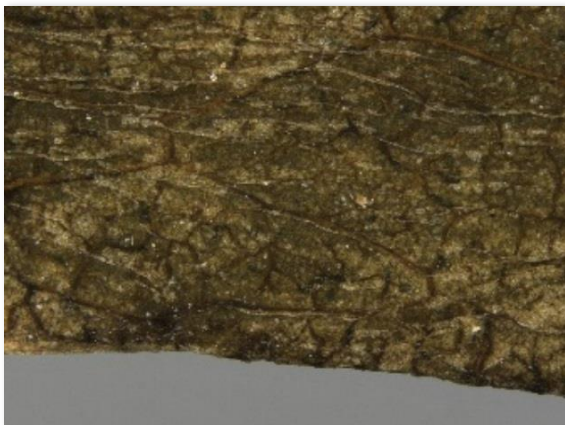
Key identification features

Macroscopic features of Folium Isatidis decoction pieces



Micro-morphological feature

A: Without non-glandular hairs at the leaf margin and vein



(Leaf margin)

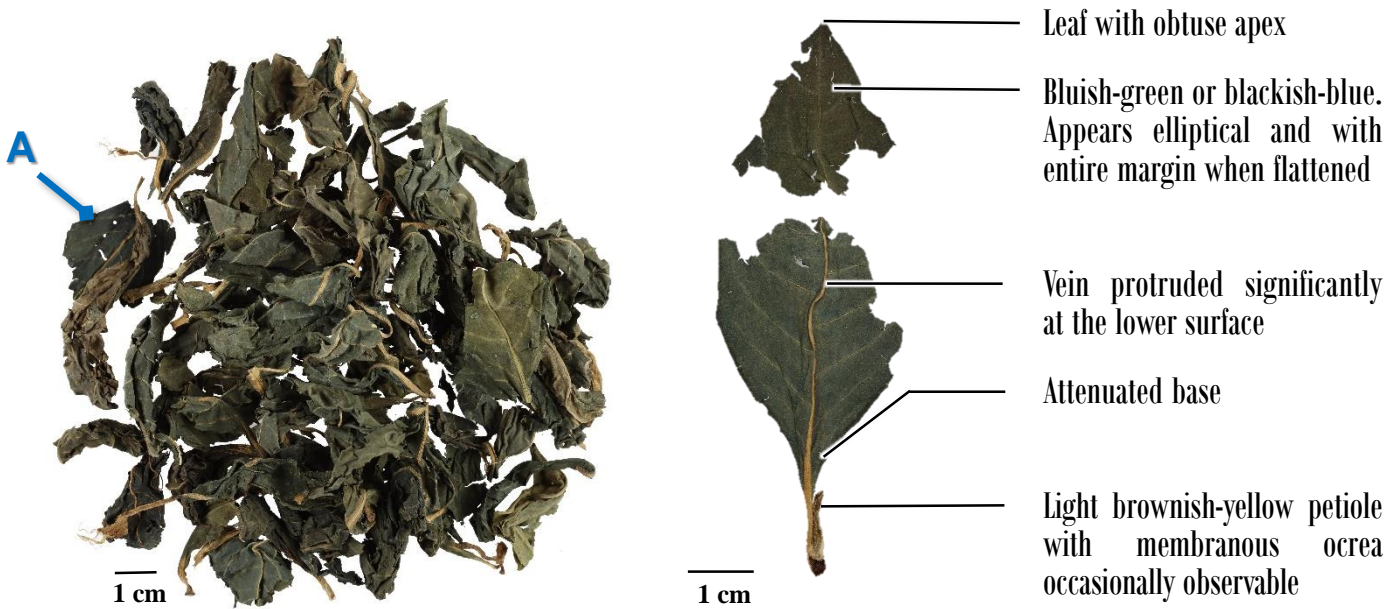
0.5 mm



(Lower surface of the leaf)

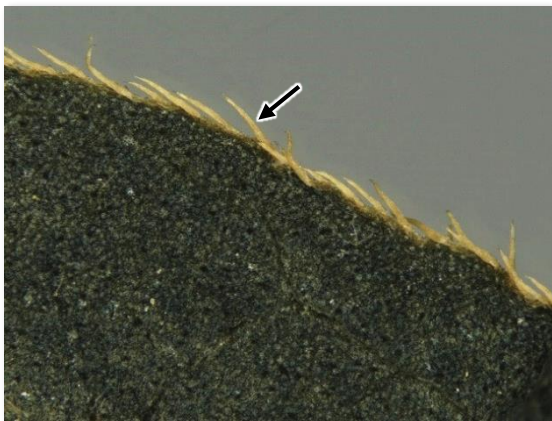
1 mm

Macroscopic features of Folium Polygoni Tinctorii



Micro-morphological feature

A: With non-glandular hairs at the leaf margin and vein




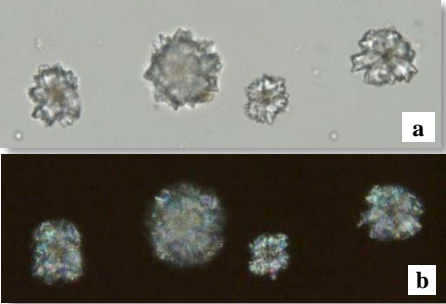



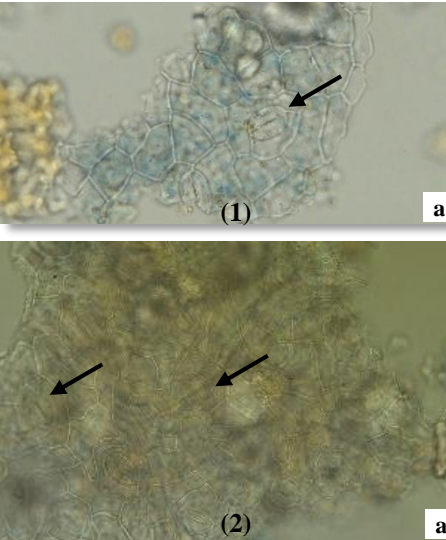
0.5 mm



0.5 mm

Microscopic feature comparison of Folium Isatidis decoction pieces and Folium Polygoni Tinctorii powder



	Folium Isatidis decoction pieces	Folium Polygoni Tinctorii
Cluster of calcium oxalate	 Absent	 <p>Frequently found, scattered or present in parenchymatous cell; polychromatic under the polarized light microscope</p>
Non-glandular hair	 Absent	 <p>Multiple columns, lignified and thickened wall</p>
Epidermal cell of leaf	 <p>Anticlinal wall slightly curved and slightly beaded-thickened; anisocytic stomata (→), 3-4 subsidiary cells</p>	 <p>Upper epidermal cell of leaf(1) appears sub-rectangular, straight anticlinal wall, paracytic stomata (→); lower epidermal cell (2) appears polygonal, straight or slightly sinuous anticlinal wall, with more stomata than the upper epidermal cell of leaf</p>

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

50 μm

Summary

Major differences in the features between Folium Isatidis decoction pieces and Folium Polygoni Tinctorii:

		Folium Isatidis decoction pieces	Folium Polygoni Tinctorii
Macroscopic and micro-morphological features	Leaf base	Attenuate and decurrent to petiole appears wing-shaped	Attenuate
	Petiole	Without ocrea	With membranous ocrea occasionally observable
	Lower surface of the leaf	Without non-glandular hairs at the leaf margin and vein	With non-glandular hairs at the leaf margin and vein
Microscopic features	Cluster of calcium oxalate	Absent	Present
	Non-glandular hair	Absent	Present
	Epidermal cell of leaf	Anisocytic stomata	Paracytic stomata

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



Isatidis Folium - Hong Kong Chinese Materia Medica Standards (Volume 4)

Additional information

Photo of crude Folium Isatidis



- ◆ Mostly shriveled and curved, some broken

Intact blade appears long elliptical or oblong-oblongate, 5-20 cm long, 2-6 cm wide. Upper surface is dark greyish-green, some with darker and slightly protruded dots observable. Obtuse apex, entire or slightly wavy margin, basal attenuate and decurrent to petiole appears wing-shaped

Light brownish-yellow petiole 4-10 cm long

- ◆ Fragile
- ◆ Slight odour. Slightly sour, bitter and astringent taste



Government Chinese Medicines Testing Institute
Department of Health
Enquiry Hotline: 3188 8079
Website: 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 other reproduction, adaptation, distribution, dissemination or making available of the information in this pamphlet for commercial use is strictly prohibited unless prior written authorization is obtained from the GCMTI.