

# Fructus Kochiae versus Fructus Leonuri



## Source

**\*Fructus Kochiae**  
is the dried ripe fruit of  
*Kochia scoparia* (L.) Schrad.  
in the family Chenopodiaceae

**Fructus Leonuri<sup>#</sup>**  
is the dried ripe fruit of  
*Leonurus heterophyllus* Sweet  
in the family Labiatae

## Overview

Fructus Kochiae and Fructus Leonuri are both listed in Schedule 2 of the Chinese Medicine Ordinance and the Chinese Pharmacopoeia (2020). According to the research by the *Herbalogy Research, Review & Identification of Chinese Medicinal Materials, the non-Authorization Species Used in Hong Kong*, a Materia Medica literature had once mistakenly recorded the fruit of *Leonurus heterophyllus* as the source of Fructus Kochiae in the early times. According to the Chinese Pharmacopoeia, the functions of Fructus Kochiae are clearing heat and draining dampness, dispelling wind and relieving itching. On the other hand, Fructus Leonuri has the functions of activating blood and regulating menstruation, clearing the liver and improving vision. As the two CMM have different sources and properties, they should be used accordingly.

Note:

\*Its name in the Chinese Pharmacopoeia (2020 Edition) is “Kochiae Fructus”.

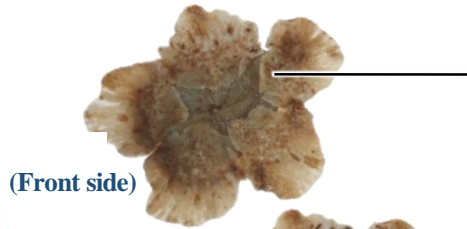
<sup>#</sup>Its name in the Chinese Pharmacopoeia (2020 Edition) is “Leonuri Fructus”.

## Key identification features

### Macroscopic features of Fructus Kochiae

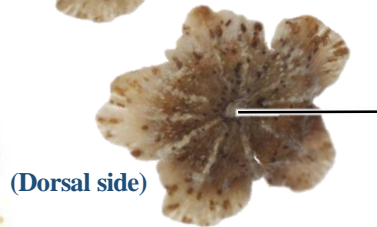


◆ Oblate five-pointed stellate



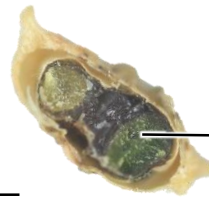
(Front side)

Persistent perianth with greyish-green or light brown surface and 5 membranous winglets at the surrounding



(Dorsal side)

With slightly protruded and dotted fruit stalk scar in the centre of the dorsal side of perianth



1 mm (Transverse section)

Sub-elliptical and with brown or light green cotyledon

### Micro-morphological feature

A: Membranous pericarp(→) is translucent, without maculae



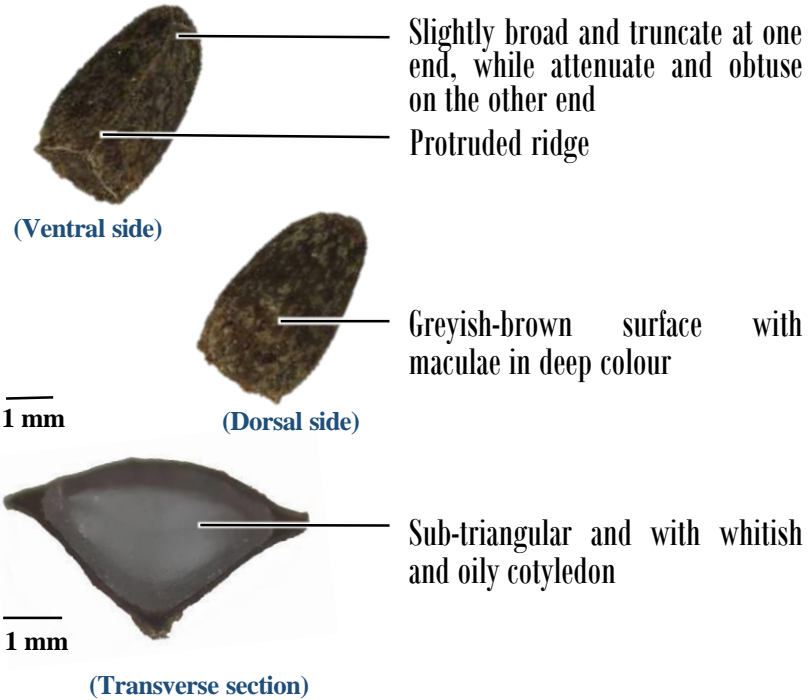
(Fruit with persistent perianth removed)

0.5 mm

## Macroscopic features of Fructus Leonuri

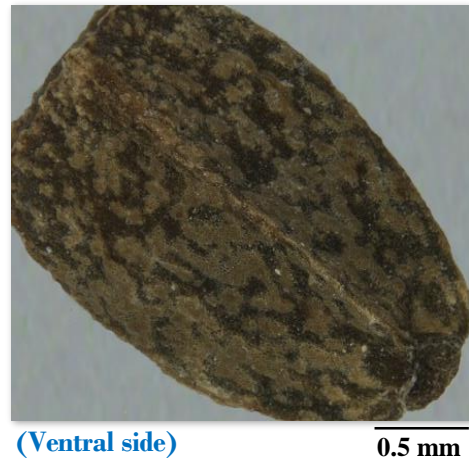
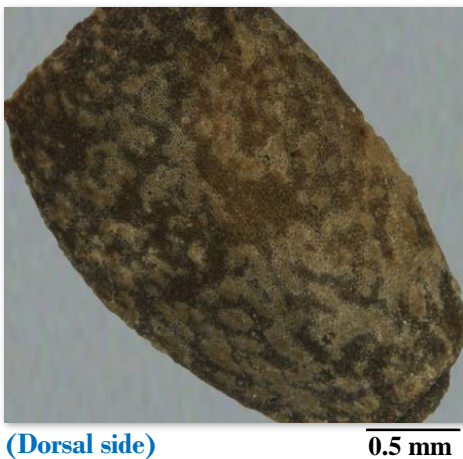


◆ Trigonous



### Micro-morphological feature



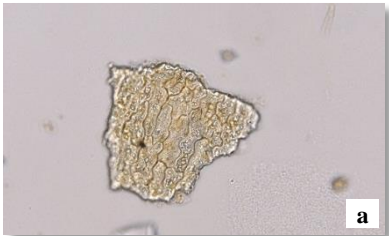
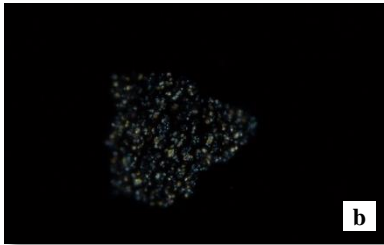
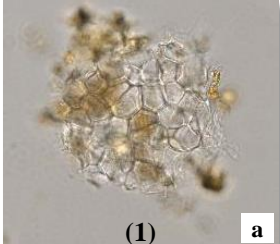

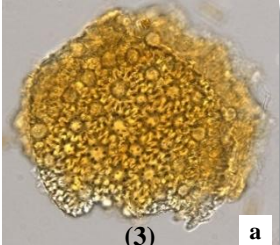
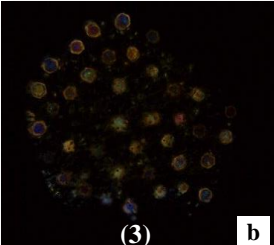


A: Pericarp with maculae in deep colour





## Microscopic feature comparison of Fructus Kochiae and Fructus Leonuri powder



	<b>Fructus Kochiae</b>	<b>Fructus Leonuri</b>
<b>Epidermal cell of perianth</b>	 <p style="text-align: right;"><b>a</b></p> <p style="text-align: center;">Polygonal, anomocytic stomata</p>	 <p style="text-align: center;">Absent</p>
<b>Pericarp cell</b>	 <p style="text-align: right;"><b>a</b></p>  <p style="text-align: right;"><b>b</b></p> <p>Sub-rectangular or polygonal, thin and sinuous wall, containing numerous small prisms of calcium oxalate; prism of calcium oxalate polychromatic under the polarized light microscope</p>	 <p style="text-align: center;"><b>(1)</b> <b>a</b></p>  <p style="text-align: center;"><b>(2)</b> <b>a</b></p>  <p style="text-align: center;"><b>(3)</b> <b>a</b></p>  <p style="text-align: right;"><b>b</b></p> <p>Exocarp cell(1) yellow, colourless or light yellow, sub-polygonal Mesocarp cell(2) yellow or light yellow, sub-polygonal in surface view, thin and slightly sinuous wall; Sclerenchymatous cell of endocarp(3) colourless, light yellow or yellowish-brown, stellate or with indistinct cell boundary in surface view, lumen contains prism of calcium oxalate; prism of calcium oxalate polychromatic under the polarized light microscope</p>
<b>Non-glandular hair</b>	 <p style="text-align: right;"><b>a</b></p> <p style="text-align: center;">Consists of 2-3 cells</p>	 <p style="text-align: center;">Absent</p>

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

50 μm

## Summary

Major differences in the features between Fructus Kochiae and Fructus Leonuri:

		Fructus Kochiae	Fructus Leonuri
Macroscopic and micro-morphological features	<b>Appearance</b>	Oblate five-pointed stellate	Trigonous
	<b>Persistent perianth</b>	Present	Absent
	<b>Surface of the fruit</b>	Without maculae	With maculae in deep colour
Microscopic features	<b>Epidermal cell of the perianth</b>	Present	Absent
	<b>Pericarp cell</b>	1 type	3 types
	<b>Non-glandular hair</b>	Present	Absent

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



Kochiae Fructus - Hong Kong Chinese Materia Medica Standards (Volume 5)

Leonuri Fructus - Hong Kong Chinese Materia Medica Standards (Volume 10)



Government Chinese Medicines Testing Institute  
Department of Health  
Enquiry Hotline: 3188 8079  
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 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.*