

Fructus Carpesii versus Fructus Torilis



5 mm



5 mm

Source

***Fructus Carpesii**
is the dried ripe fruit of
Carpesium abrotanoides L.
in the family Compositae

Fructus Torilis
is the dried ripe fruit of
Torilis japonica (Houttuyn) de Candolle
in the family Umbelliferae

Overview

Fructus Carpesii is a Chinese Materia Medica (CMM) listed under Schedule 2 of the Chinese Medicine Ordinance and the Chinese Pharmacopoeia (2020), while Fructus Torilis has not yet been listed. According to the *Zhong yao cai pin zhong lun shu* and the *Modern Chinese Materia Medica*, species used as “*He shi*” is complex, and the usage habits vary across different regions. Among them, Fructus Carpesii is mainly used in the Northern regions of China, thus also called “*Bei he shi*”; while Fructus Torilis is used as “*He shi*” in the Southern regions of China. According to the Chinese Pharmacopoeia and the *Chinese Materia Medica Standards in Hunan Province*, both Fructus Carpesii and Fructus Torilis have insecticidal functions, furthermore Fructus Carpesii can dissipate accumulation, while Fructus Torilis can check diarrhea, eliminate dampness and relieve itching. As there are differences to the functions of these two CMM, they should be used accordingly.

Note:

*Its name in the Chinese Pharmacopoeia (2020) is “Carpesii Fructus”.

Key identification features

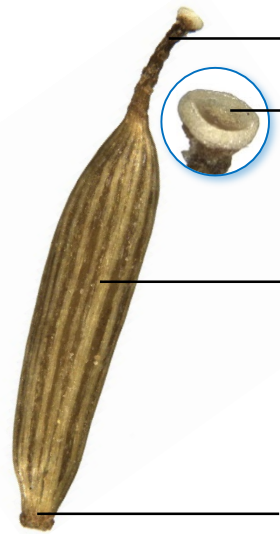
Macroscopic features of Fructus Carpesii



◆ Cylindrical achene



5 mm



With slender protuberance at the top
Apex expanded to form greyish-white ring

Surface is yellowish-brown or brown and has numerous longitudinal ridges

Slightly small and truncate base

0.5 mm

Micro-morphological feature

A: Non-glandular hair is occasionally observable



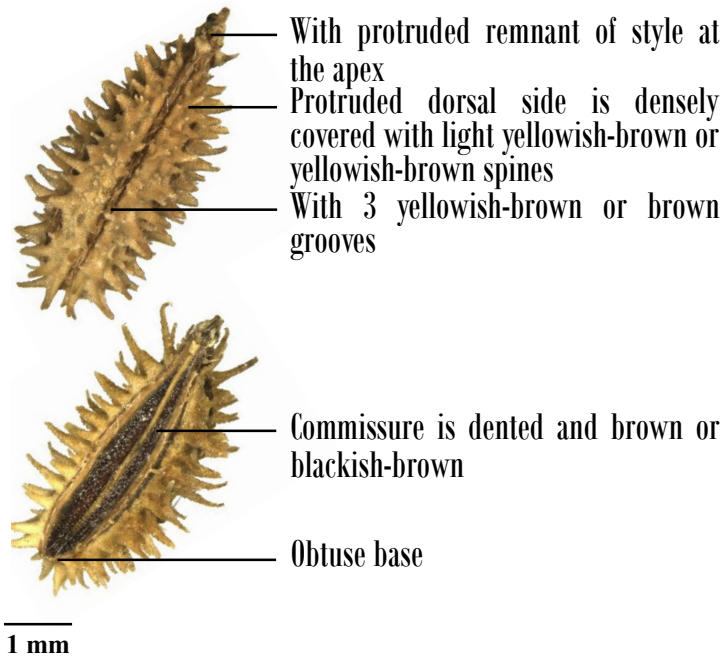
(Surface)

200 μ m

Macroscopic features of Fructus Torilis



◆ Flattened oblong mericarp

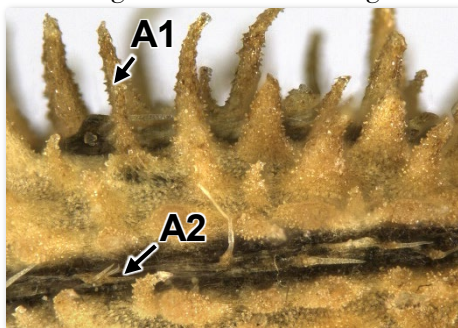


Micro-morphological features

A1: Surface of the spine is granular

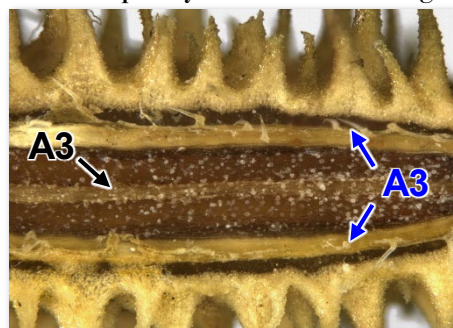
A2: With 1 slightly protruded ridge(→) each between grooves on the dorsal side. Non-glandular hair is frequently observed on the ridge

A3: Centre of the commissure has 1 vein(→) which has 1 slightly protruded ridge(→) near to the margin on both sides. Non-glandular hair is frequently observed on the ridge



(Dorsal side)

500 µm



(Commissure)

500 µm

Microscopic feature comparison of Fructus Carpesii and Fructus Torilis powder



	Fructus Carpesii	Fructus Torilis
Crystal of calcium oxalate	<p>Numerous columnar crystals of calcium oxalate(1), present in epidermal cell in groups; polychromatic under the polarized light microscope. Crystal sand of calcium oxalate(2) is frequently found, usually present in cotyledon cell; bright white under the polarized light microscope</p>	<p>Clusters of calcium oxalate(1) is frequently found, usually present in endosperm cell, small; orange-yellow or polychromatic under the polarized light microscope</p>
Non-glandular hair	<p>Occasionally found, multicellular, thin wall, smooth surface</p>	<p>Frequently found, unicellular, thick or extremely thick wall, usually with warty protuberances on the surface</p>
Vittae	<p>Absent</p>	<p>Frequently found, yellowish-brown or reddish-brown, mostly broken, secretory cell appears polygonal in surface view</p>

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

50 μm

Summary

Major differences in the features between Fructus Carpesii and Fructus Torilis:

		Fructus Carpesii	Fructus Torilis
Macroscopic and micro-morphological features	Appearance	Cylindrical	Flattened oblong
	Surface	With longitudinal ridges	Densely covered with spines on dorsal side
	Non-glandular hair	Occasionally observed	Frequently observed
Microscopic features	Crystal of calcium oxalate	With columnar crystal of calcium oxalate and crystal sand of calcium oxalate	With cluster of calcium oxalate
	Non-glandular hair	Occasionally found	Frequently found
	Vittae	Absent	Present



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