

Fructus Carotae versus Fructus Torilis



Source

***Fructus Carotae**
is the dried ripe fruit of
Daucus carota L.
in the family Umbelliferae

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

Overview

Fructus Carotae is a Chinese Materia Medica listed in Schedule 2 of the Chinese Medicine Ordinance and the Chinese Pharmacopoeia (2020). Fructus Torilis on the other hand is not included in either references. According to the *Zhong yao cai pin zhong lun shu* and the *Modern Chinese Materia Medica*, the variety of “*He shi*” is complex, and the usage habits varies across different regions. Among them, Fructus Carotae is mainly produced in the Southern regions of China; in addition to their own use in the production area, they are also sold in the Northern areas. Fructus Torilis on the other hand is mainly produced in Hunan, Guangxi and Fujian provinces, and is used as “*He shi*” in Southern regions of China. According to the Chinese Pharmacopoeia and the *Chinese Materia Medica Standards in Hunan Province*, Fructus Carotae and Fructus Torilis both have insecticidal functions. Fructus Carotae can also dissipate accumulation, while Fructus Torilis can check diarrhea, eliminate dampness and relieve itching. Due to differences in efficacy, they should be used accordingly.

Note:

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

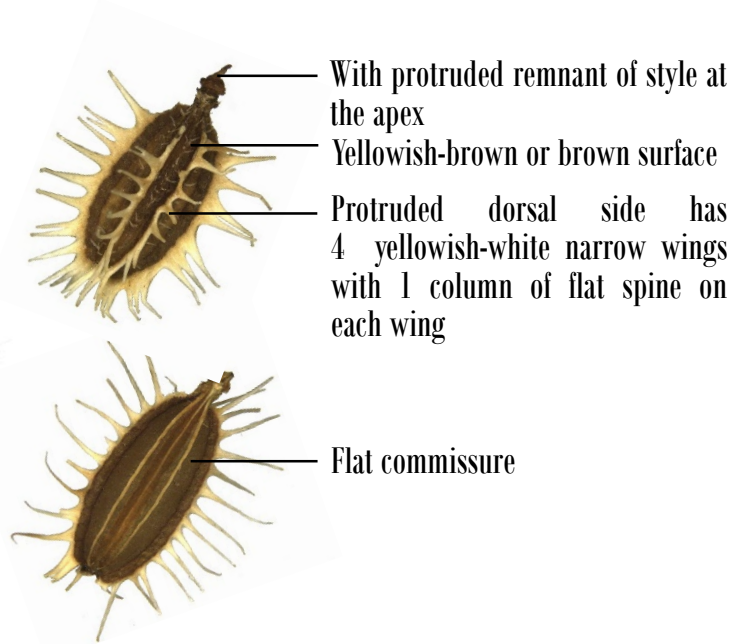
Key identification features

Macroscopic features of Fructus Carotae

- ◆ Flattened elliptical or flattened oblong mericarp



5 mm



With protruded remnant of style at the apex

Yellowish-brown or brown surface

Protruded dorsal side has 4 yellowish-white narrow wings with 1 column of flat spine on each wing

Flat commissure

1 mm

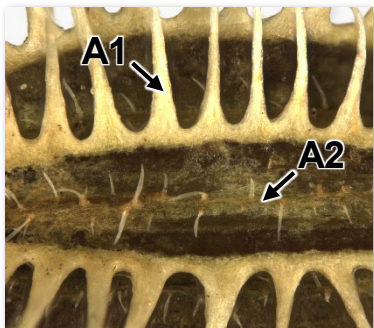
Micro-morphological features

A1: Surface of the spine is smooth

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

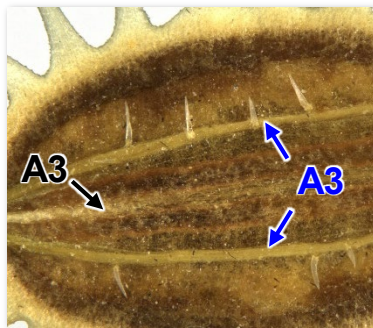
A3: Centre of the commissure has 1 vein(→) which has 1 slightly protruded ridge(→) on both sides. Non-glandular hair is frequently observed on the ridge

B: Sub-trapeziform, with 1 vitta at each of the 4 corners on the dorsal side, while 2 vittae in the centre of the commissure



(Dorsal side)

500 μm



(Commissure)

500 μm

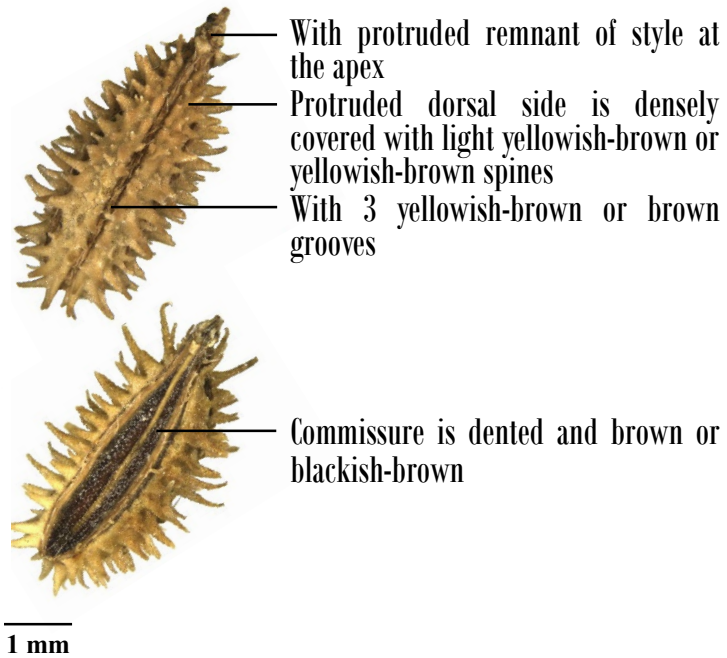


(Cut surface)

500 μm

Macroscopic features of Fructus Torilis

◆ Flattened oblong mericarp



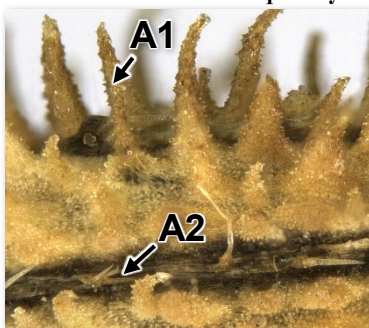
Micro-morphological features

A1: Surface of the spine is granular

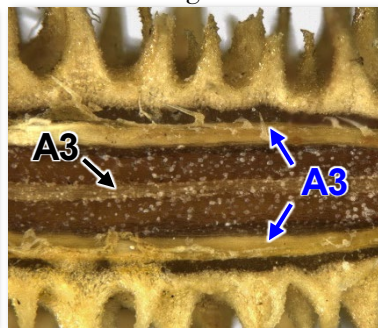
A2: With 1 slightly protruded ridge(→) each between grooves on the dorsal side. Non-glandular hair is frequently observed on the ridge

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

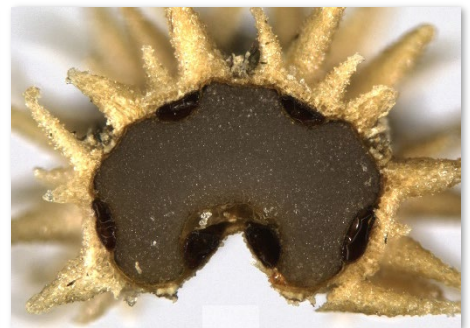
B: Reniform, with 4 and 2 vittae evenly distributed at the dorsal side and the commissure respectively



(Dorsal side)



(Commissure)







(Cut surface)

500 µm

Microscopic feature comparison of Fructus Carotae and Fructus Torilis powder



	Fructus Carotae	Fructus Torilis
Non-glandular hair	 <p>Numerous, unicellular, thin or slightly thick wall, with fine and dense warty protuberances on the surface</p>	 <p>Numerous, unicellular, thick or extremely thick wall, usually with warty protuberances on the surface</p>
Fragment of spine	 <p>Colourless, consists of multiple columns of narrow and long sclerenchymatous cell, with tubercular protuberances occasionally found on the surface</p>	 <p>Yellowish-brown, consists of multiple columns of narrow and long sclerenchymatous cell, with thick cuticle and numerous tubercular protuberances on the surface</p>

50 µm

Summary

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

		Fructus Carotae	Fructus Torilis
Macroscopic and micro-morphological features	Dorsal side	With 4 narrow wings which has 1 column of spine on each wing	Densely covered with spine
	Commissure	Flat	Dented
	Surface of the spine	Smooth	Granular
Microscopic features	Non-glandular hair	With fine and dense warty protuberances	With warty protuberances
	Fragment of spine	Colourless, with tubercular protuberances occasionally found on the surface	Yellowish-brown, with numerous tubercular protuberances on the surface



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