



**Identification of
Tiny Seed and Fruit
Types of Chinese
Materia Medica**

Fructus Torilis

1 cm

Source

The dried ripe fruit of *Torilis japonica* (Houttuyn) de Candolle in the family Umbelliferae

Property and flavour

Neutral; bitter and pungent; slightly toxic

Meridian affinity

Spleen and large intestine meridians

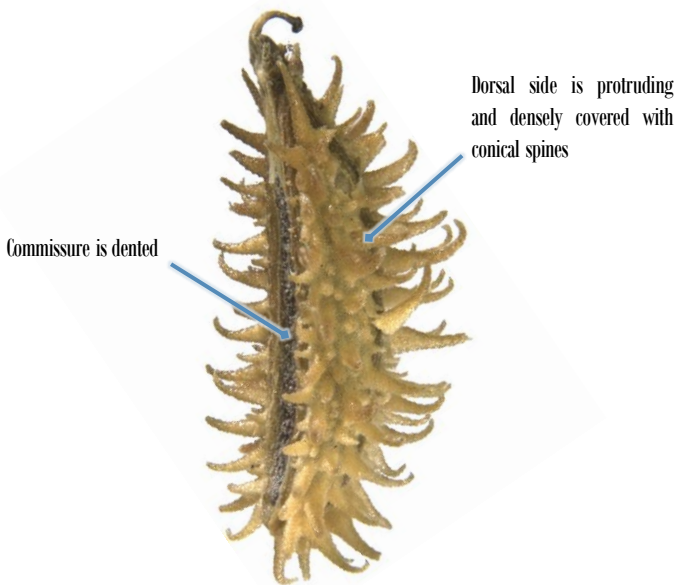
Actions

To kill parasitic worms and stop diarrhoea; to eliminate dampness and relieve itch

Micro-morphological features

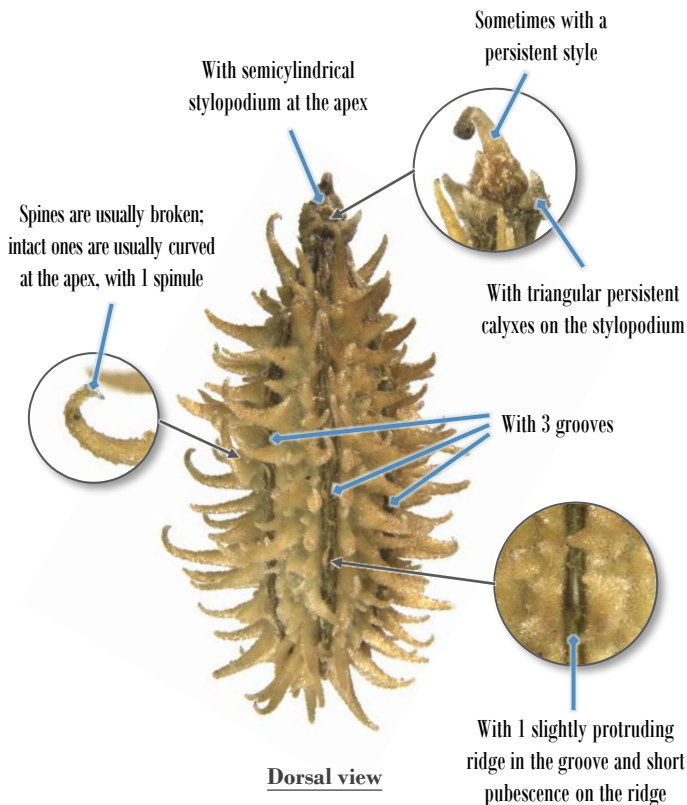
Shape

Mericaip appears flattened oblong



Lateral view

0.5 mm



With 1 vein in the middle
of the commissure

With 1 slightly
protruding ridge on both
sides of the vein

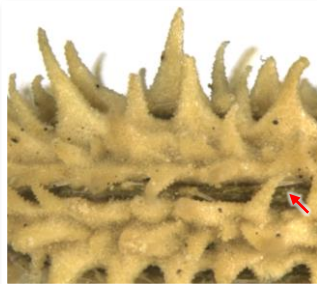
With short pubescence on
the ridge

Commissural view

0.5 mm

Surface

Dorsal side is yellowish-brown or light yellowish-brown, granular; groove is brown or blackish-brown, ridge (→) is yellowish-brown or yellowish-green



0.5 mm

Commissure is blackish-brown and has white granular substances



0.5 mm

Odour

With characteristic aroma when broken by rubbing

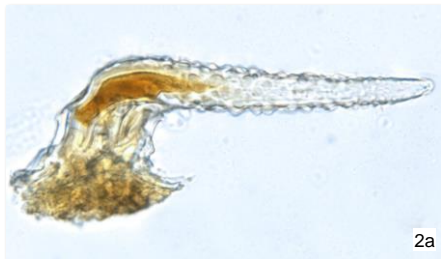
Powder microscopic features

Trichome

Non-glandular hair



Frequently found, unicellular, with thick (1) or extremely thick (2) wall, surface usually has warty protuberances, base is usually surrounded by several cells which are usually curved at an obtuse or a nearly right angle to the non-glandular hair



Crystal

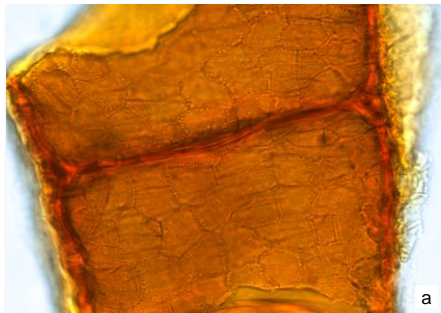
Cluster of calcium oxalate



Frequently found, small, usually present in endosperm cell; orange-yellow or polychromatic under polarized light microscope

Secretory tissue

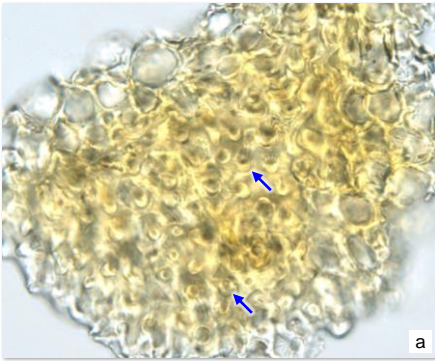
Vitta



Frequently found, yellowish-brown or reddish-brown, secretory cell appears polygonal or sub-polygonal in surface view, some with septum

Pericarp

Exocarp cell



Yellowish-brown or colourless, appears sub-polygonal or sub-rounded in surface view, cell boundary is usually indistinct; covered with thick cuticle, with tubercular protuberances (→)

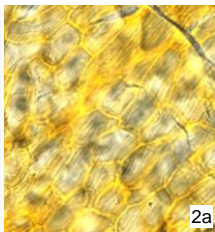
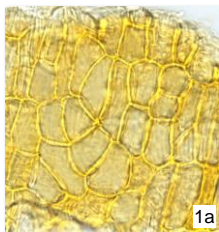
Endocarp cell



Yellowish-brown, appears long strip-shaped in surface view, usually adheres to vitta or testa cell

Testa

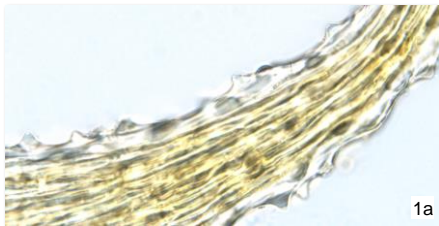
Testa cell



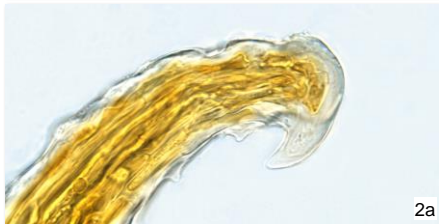
Yellowish-brown, appears sub-polygonal or sub-rectangular in surface view (1), some have linear striations on the surface (2)

Others

Fragment of spine



Frequently found, yellowish-brown, consists of multiple columns of narrow and long sclerenchymatous cells, with thick cuticle and numerous tubercular protuberances on the surface (1), some with non-glandular hair at the apex (2)



Key identification features

Micro-morphology

- ⊙ Mericarp appears flattened oblong
- ⊙ Dorsal side is protruding and densely covered with conical spines; commissure is dented
- ⊙ Dorsal side is yellowish-brown or light yellowish-brown, granular; commissure is blackish-brown and has white granular substances

Powder microscopy

- ⊙ Non-glandular hair: unicellular, surface usually has warty protuberances, base is usually surrounded by several cells
- ⊙ Vitta: frequently found, secretory cell appears polygonal or sub-polygonal in surface view
- ⊙ Fragment of spine: frequently found, consists of multiple columns of narrow and long sclerenchymatous cells, with tubercular protuberances on the surface

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