



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



# Fructus Coriandri

## Source

The dried fruit of *Coriandrum sativum* L. in the family Umbelliferae

## Property and flavour

Neutral; pungent and sour

## Meridian affinity

Lung, stomach and large intestine meridians

## Actions

To strengthen the stomach and relieve accumulation; to regulate qi and alleviate pain; to promote skin eruption and remove toxins

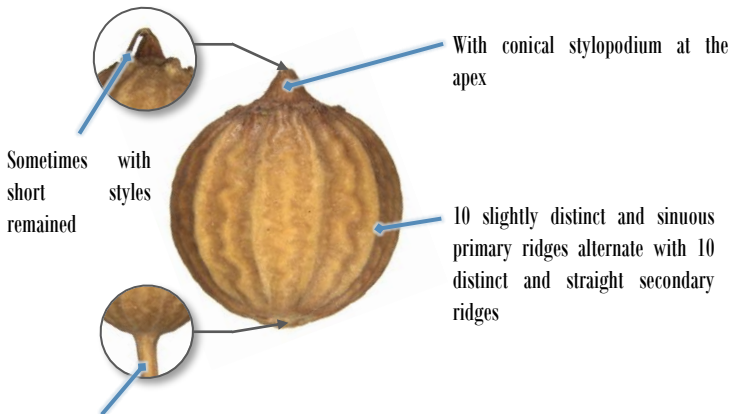
## Micro-morphological features

### Shape

Usually are intact cremocarps which appear spherical or ovoid



1 mm

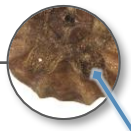
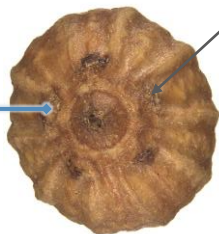


Surface view

Cremocarp

1 mm

With remnants of 5 calyx  
teeth



Occasionally with calyx  
teeth remained

Top view

Base is usually not intact  
and has sub-rounded fruit  
stalk scar



Bottom view

Cremocarp

Commissure is slightly  
dented



Occasionally split into  
halves as mericarps

Commissural view

Mericaip

## Surface

**Brownish-yellow, light brownish-yellow or greyish-brown on the surface of cremocarp and the dorsal side of mericarp. Small reticulate striations (→) with 2 brown and slightly curved vittae (→) on top of them is on the commissure of mericarp**

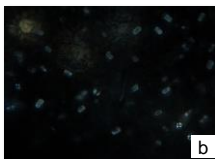


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0.5 mm

## Powder microscopic features

### Crystal

#### Prism of calcium oxalate



Sub-rectangular or sub-square, small, present in exocarp cell; white under polarized light microscope

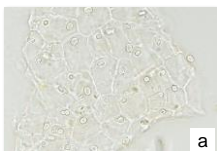
#### Cluster of calcium oxalate



Scattered (1) or present in endosperm cell (2), small; polychromatic under polarized light microscope



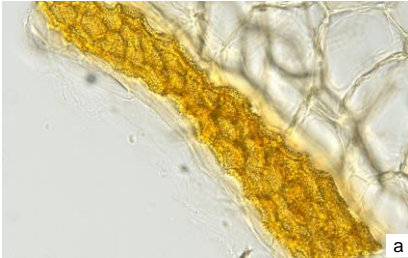
#### Round crystal



Sub-rounded or sub-ovoid, small, present in exocarp cell; white or orange-yellow under polarized light microscope

## Secretory tissue

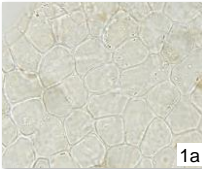
### Vitta



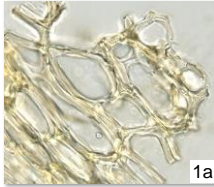
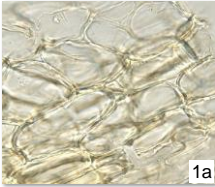
Mostly broken, yellowish-brown, secretory cell appears polygonal

## Pericarp

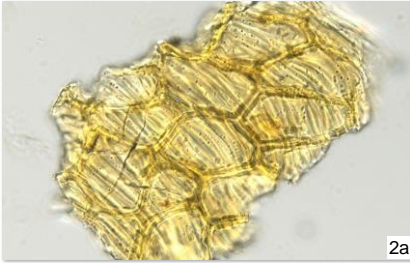
### Exocarp cell



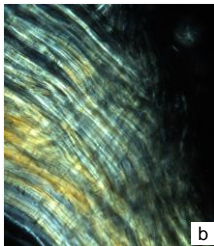
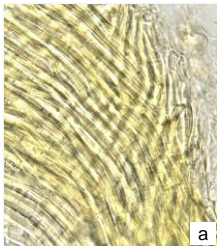
Colourless, appears sub-polygonal (1) in surface view, with slightly thick wall, some have prism of calcium oxalate and round crystal, cuticular striations and stoma (2) are occasionally found or barely found

**Mesocarp cell**

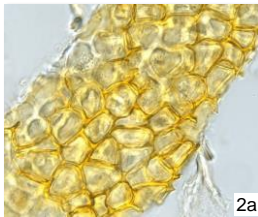
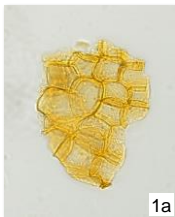
Outer mesocarp cell (1) is light yellowish-brown or colourless, appears sub-rectangular or sub-polygonal in lateral view, with slightly thick or thick wall; inner mesocarp cell (2) is yellowish-brown, cells adhering to endocarp cells appear polygonal or sub-polygonal in surface view, usually with pits and pit canals

**Endocarp cell**

Yellowish-brown, appears strip-shaped in surface view (1), usually adheres to inner mesocarp cell or testa cell; cells occur in 1 row in lateral view (2), straight on one side, wavy on another side, sometimes with cellular septum

**Fibre of mesocarp**

Usually curved and with multiple layers overlapped, with slightly thick wall, pits and pit canals are distinct; bright white, orange-yellow or polychromatic under polarized light microscope

**Testa****Testa cell**

Yellowish-brown, sub-polygonal (1), with thick wall, usually adheres to endosperm cell (2) or endocarp cell (3)



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

50  $\mu$ m



## Key identification features

### Micro-morphology

- ⊙ Usually are intact cremocarps which appear spherical or ovoid; occasionally split into halves as mericarps
- ⊙ Surface of cremocarp has 10 slightly distinct and sinuous primary ridges alternating with 10 distinct and straight secondary ridges
- ⊙ Small reticulate striations with 2 brown and slightly curved vittae on top of them is on the commissure of mericarp

### Powder microscopy

- ⊙ Vitta: mostly broken, yellowish-brown, secretory cell appears polygonal
- ⊙ Exocarp cell: appears sub-polygonal in surface view, some with prism of calcium oxalate and round crystal
- ⊙ Endocarp cell: appears strip-shaped in surface view, usually adheres to mesocarp cell or testa cell

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