



Identification of
Tiny Seed and Fruit
Types of Chinese
Materia Medica

Fructus Polygoni Orientalis*

1 cm

Source

The dried ripe fruit of *Polygonum orientale* L. in the family Polygonaceae

Property and flavour

Mild cold; salty

Meridian affinity

Liver and stomach meridians

Actions

To dissipate blood and eliminate masses; to resolve masses and alleviate pain; to induce urination and resolve oedema

Note:

* Its name in Chinese Pharmacopoeia (2020 Edition) is “Polygoni Orientalis Fructus”.

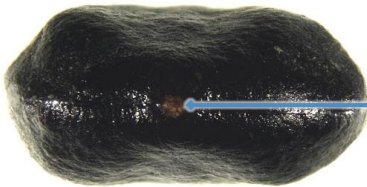
Micro-morphological features

Shape

Flattened round



1 mm



With protruding stylopodium
at the apex

Top view

0.5 mm

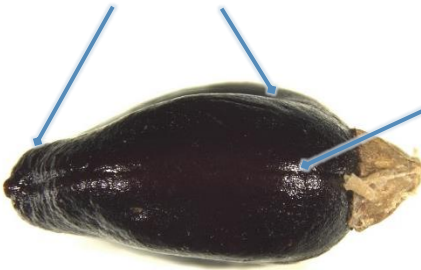


With light brown and slightly protruding fruit stalk scar at the base, usually with remained membranous perianth

Bottom view

0.5 mm

The end near the base is thicker than the end near the apex



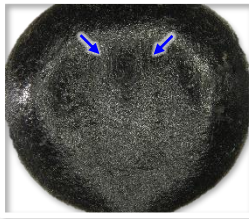
And a line connecting both ends

Lateral view

0.5 mm

Surface

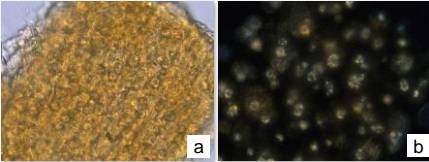
Lustrous, brownish-black or reddish-brown, both sides are slightly dented, usually with 1-2 longitudinal protuberances (→) in the middle of the slightly dented area



0.5 mm

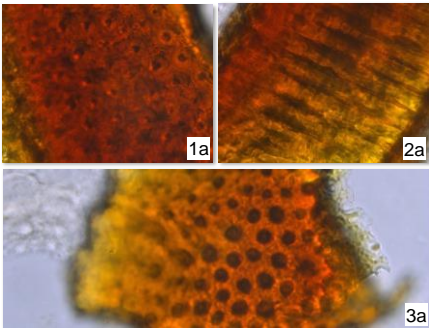
Powder microscopic features

Crystal

Cluster of calcium oxalate

Scattered or present in parenchymatous cell; polychromatic under polarized light microscope

Pericarp

Palisade cell of pericarp

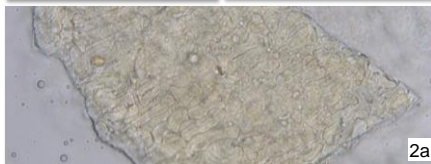
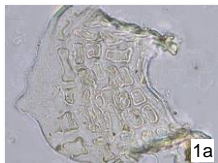
In groups or broken, yellowish-brown or reddish-brown, cell appears polygonal or sub-rounded in top view (1), with indistinct intercellular space, anticlinal wall near the surface is extremely thick, with small lumen, sinuous anticlinal wall is visible when slightly focusing downward, with irregular lumen; cells occur in 1 row in lateral view (2), with irregularly thickened radial wall; lumen is relatively large in bottom view (3), sub-rounded, some contain yellowish-brown or reddish-brown substances

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

50 μ m

Testa

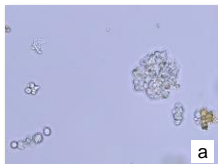
Cuticle and fragment of testa cell



Frequently found, epidermal cell of testa (1) appears rectangular in surface view, anticlinal wall is deeply sinuous and the end of its protruding part is relatively truncate, some are embedded partly with adjacent cells to form sub-rounded or conic intercellular spaces; cell is covered with cuticle, some can be observed with curved edges in surface view, below which are several layers of long strip-shaped or irregular parenchymatous cells (2) in yellowish-brown or yellow, loosely arranged, with large intercellular space

Endosperm

Starch granule



Frequently found, mainly as sub-rounded simple granule, compound granule consists of dozens of units and appears in irregular masses; black and cruciate-shaped under polarized light microscope

Key identification features

Micro-morphology

- ⊙ Flattened round, with protruding stylopodium at the apex, with light brown and slightly protruding fruit stalk scar at the base, usually with remained membranous perianth
- ⊙ Lustrous, brownish-black or reddish-brown, both sides are slightly dented, usually with 1-2 longitudinal protuberances in the middle of the slightly dented area

Powder microscopy

- ⊙ Palisade cell of pericarp: in groups or broken, yellowish-brown or reddish-brown, with indistinct intercellular space in top view, anticlinal wall near the surface is extremely thick, with small lumen; cells occur in 1 row in lateral view, with irregularly thickened radial wall; lumen is relatively large in bottom view, some contain yellowish-brown or reddish-brown substances
- ⊙ Cuticle and fragment of testa cell: frequently found, epidermal cell of testa has deeply sinuous anticlinal wall, is covered with cuticle, some can be observed with curved edges in surface view, below which are several layers of long strip-shaped or irregular parenchymatous cells, loosely arranged, with large intercellular space

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

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Government Chinese Medicines Testing Institute

Department of Health

Enquiry hotline: 3188 8079

Website: www.cmro.gov.hk

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