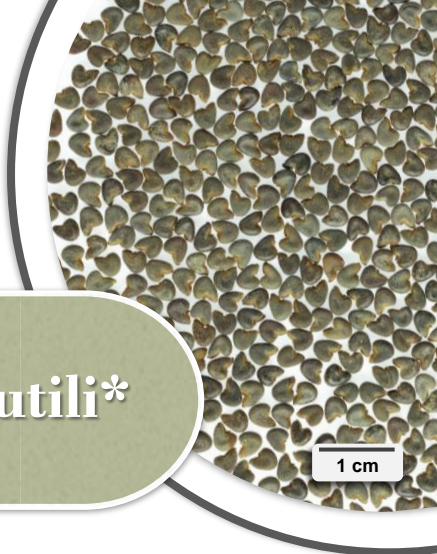




Identification of Tiny Seed and Fruit Types of Chinese Materia Medica



Semen Abutili*

Source

The dried ripe seed of *Abutilon theophrastii* Medic. in the family Malvaceae

Property and flavour

Neutral; bitter

Meridian affinity

Large intestine, small intestine and bladder meridians

Actions

To clear heat and remove toxins; to drain dampness; to relieve nebula

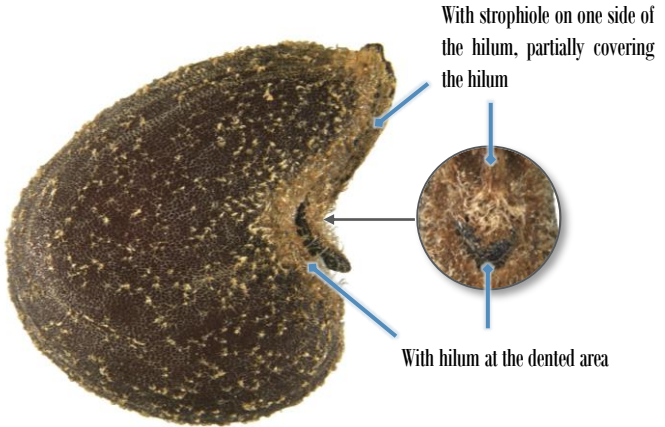
Note:

* Its name in Chinese Pharmacopoeia (2020 Edition) is “Abutili Semen”.

Micro-morphological features

Shape

Triangular-reniform, relatively pointed at one end



Surface view

0.5 mm

The end with strophiole is usually narrower, which can be observed in ventral and dorsal views



Ventral view

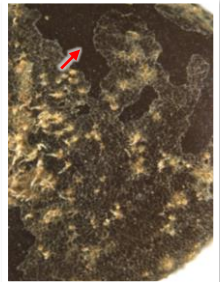
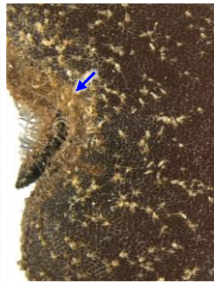


Dorsal view

0.5 mm

Surface

Blackish-brown or dark reddish-brown, with greyish-white or yellowish-brown reticulate striations on the surface; with abundant short pubescence, usually broken, relatively long and dense for that near the hilum and strophiole (→). Some have reticulate striations and short pubescence partially detached (→)



0.5 mm

Powder microscopic features

Trichome

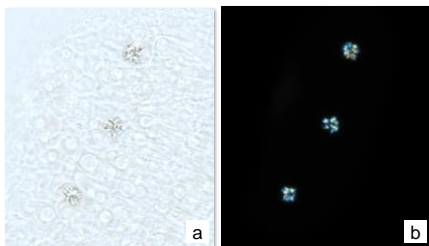
Non-glandular hair



Frequently found, unicellular, with slightly thick or thick wall, with smooth surface

Crystal

Cluster of calcium oxalate



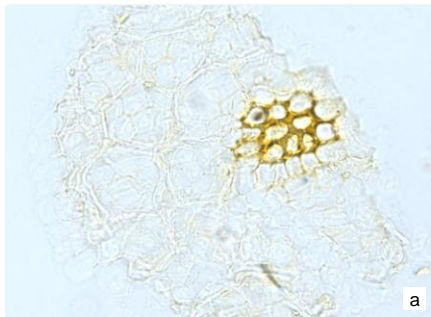
Mostly present in cotyledon cell; polychromatic under polarized light microscope

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

50 μ m

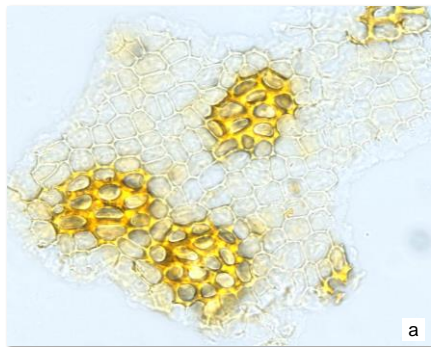
Testa

Epidermal cell of testa

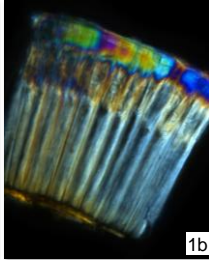


Colourless, appears sub-polygonal or polygonal in surface view, usually adheres to hypodermal cell; intact ones are barely found

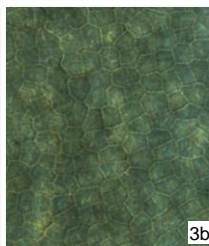
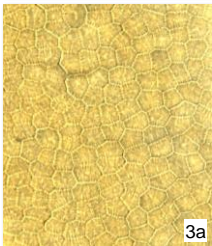
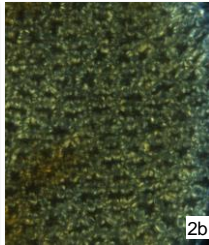
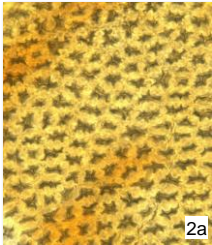
Hypodermal cell



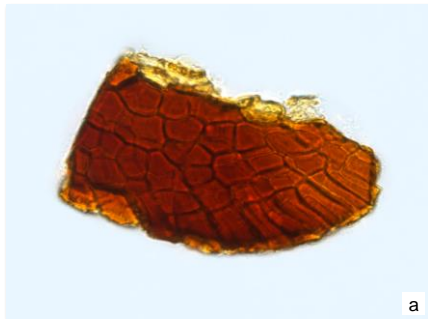
Light yellow or yellowish-brown, appears polygonal or sub-polygonal in surface view, some cell walls are thickened

Palisade cell of testa

Rectangular cells occur in 1 row in lateral view (1), lumen is significantly located towards the outer side; polychromatic under polarized light microscope. Appears sub-rounded or irregular in top view (2), with irregular lumen observable; appears polygonal in bottom view (3); orange-yellow under polarized light microscope



Pigment cell of testa



Appears polygonal or sub-polygonal in surface view, contains yellowish-brown or reddish-brown masses

Key identification features

Micro-morphology

- ⊙ Triangular-reniform
- ⊙ The end with strophiole is usually narrower, which can be observed in ventral and dorsal views
- ⊙ With reticulate striations and abundant short pubescence on the surface

Powder microscopy

- ⊙ Non-glandular hair: unicellular, frequently found
- ⊙ Hypodermal cell: appears polygonal or sub-polygonal in surface view, some cell walls are thickened
- ⊙ Palisade cell of testa: lumen is significantly located towards the outer side in lateral view, appears sub-rounded or irregular in top view, appears polygonal in bottom view

Government Chinese Medicines Testing Institute

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