



Identification of  
Tiny Seed and Fruit  
Types of Chinese  
Materia Medica

# Semen Allii Tuberosi\*



1 cm

## Source

The dried ripe seed of *Allium tuberosum* Rottl.# in the family Liliaceae

## Property and flavour

Warm; pungent and sweet

## Meridian affinity

Liver and kidney meridians

## Actions

To warm and tonify the liver and kidney; to strengthen yang and secure essence

Note:

\* Its name in Chinese Pharmacopoeia (2020 Edition) is “Allii Tuberosi Semen”.

# The scientific name of the plant source in Chinese Pharmacopoeia (2020 Edition) is “*Allium tuberosum* Rottl. ex Spreng.”.

## Micro-morphological features

### Shape

Appears semicircular or obovate in surface view



1 mm



Dorsal view



Ventral view

With linear hilum at the base, usually located towards one side

1 mm

Dorsal side is usually protruding

Some are protruding on both sides



Ventral side is flat or slightly dented

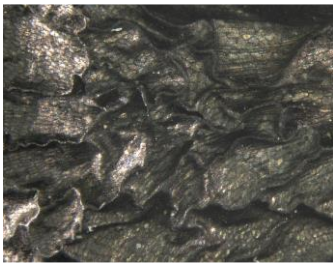


Lateral view

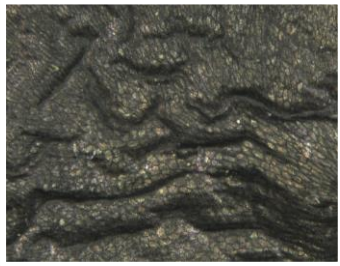
1 mm

**Surface**

**Black, lustrous, with wrinkles and fine and dense rectangular or polygonal striations on the surface, usually with less wrinkles on the ventral side**



Dorsal view



Ventral view

0.5 mm

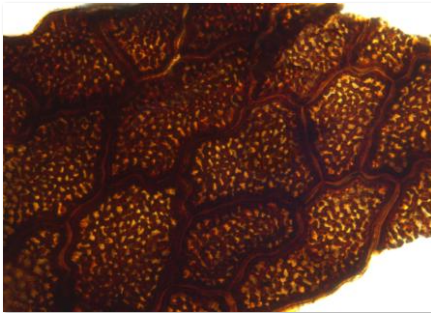
**Odour**

**Characteristic**

## Powder microscopic features

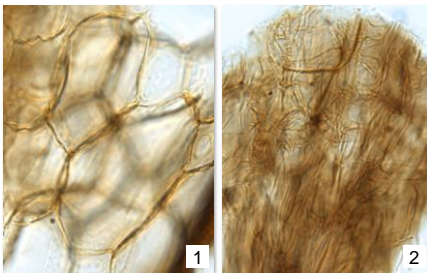
### Testa

#### Epidermal cell of testa<sup>^</sup>



Brownish-black or black, appears irregular, sub-rectangular or sub-square in surface view, with reticulate striations on the surface

#### Parenchymatous cell of testa



Brown, sub-polygonal or sub-rounded (1), usually shriveled (2)

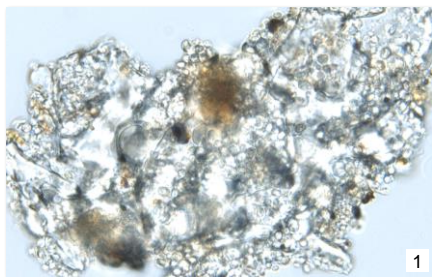
Note:

<sup>^</sup> In order to reveal clearly the shape of the cells, the light source intensity will need to be increased during observation or photography as this feature possesses a very dark colour

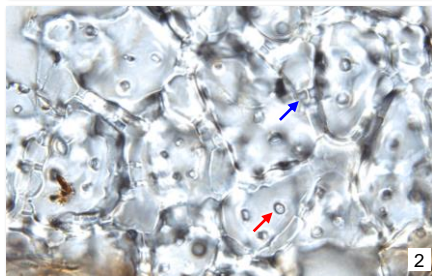
50 µm

## Endosperm

### Endosperm cell



Sub-rounded or sub-polygonal, with slightly thick wall, filled with aleurone granules and oil droplets (1); with broad pit canals ( $\rightarrow$ ) and large pits ( $\rightarrow$ ) observable after clearing (2)



50  $\mu$ m

## Key identification features

### Micro-morphology

- ⊙ Appears semicircular or obovate in surface view
- ⊙ Hilum at the base is usually located towards one side
- ⊙ With wrinkles and fine and dense rectangular or polygonal striations on the surface

### Powder microscopy

- ⊙ Epidermal cell of testa: brownish-black or black, with reticulate striations on the surface
- ⊙ Parenchymatous cell of testa: brown, usually shriveled
- ⊙ Endosperm cell: with broad pit canals and large pits

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

Allii Tuberosi Semen – HKCMMS (Vol 6)

Government Chinese Medicines Testing Institute

Department of Health

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