Identification of Easily Confused Species of Chinese Materia Medica in Hong Kong by Macroscopic and Microscopic Characteristics Project

Rhizoma Acori Tatarinowii versus Rhizoma Anemones Altaicae





1 cm

Source

*Rhizoma Acori Tatarinowii

is the dried rhizome of Acorus tatarinowii Schott in the family Araceae

Rhizoma Anemones Altaicae

is the dried rhizome of Anemone altaica Fisch. ex C. A. Mey in the family Ranunculaceae

Overview

The Chinese Materia Medica (CMM), Rhizoma Acori Tatarinowii, is listed in both Schedule 2 of the Chinese Medicine Ordinance and the Chinese Pharmacopoeia (2020). On the other hand, Rhizoma Anemones Altaicae is only listed in Schedule 2 of the Chinese Medicine Ordinance. According to the research by Species Systematization and Quality Evaluation of Commonly Used Chinese Traditional Drugs, the description of "not less than 9 nodes in 1 inch" refers to Rhizoma Acori Tatarinowii or plants belonging to the same genus. In fact, "Jiu jie chang pu" was the simplified CMM name used in prescription at that time. Confusion has arisen when recent literatures and some early editions of the Chinese Pharmacopoeia listed Anemone altaica in the name of Rhizoma Anemones Altaicae (Jiu jie chang pu). According to Zhong hua ben cao, both CMM can resolve phlegm to open the orifices. Rhizoma Acori Tatarinowii can disperse swelling to relieve pain, while Rhizoma Anemones Altaicae can diffuse dampness and enliven the spleen. Due to different functions, these two CMM should be used accordingly.

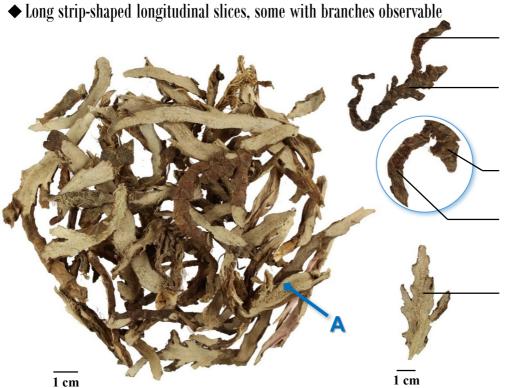
Note:

^{*}Its name in the Chinese Pharmacopoeia (2020) is "Acori Tatarinowii Rhizoma".

Key identification features

Macroscopic features of Rhizoma Acori Tatarinowii decoction pieces





Epidermis is deep brown or greyish-brown and rough

Some with uneven annulate nodes observable and with fine longitudinal striations

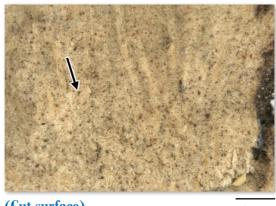
With rootlets remained or rounded root scars

Some with hairy and scaly remnants of leaf observable

Fibrous, whitish or light brown in the cut surface. oil some with spots observable

Micro-morphological feature

A: Densely distributed with brown oil spots

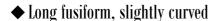


(Cut surface)

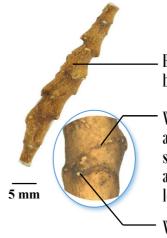
1 mm

Macroscopic features of Rhizoma Anemones Altaicae





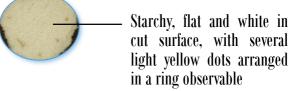




Brownish-yellow or deep brown epidermis

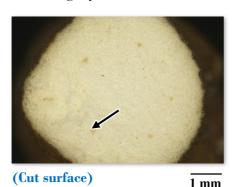
With numerous semiannularly protruded nodes slanting and alternately arranged and with scale leaf scars on the node

With 1-3 protruded root scars on the node



Micro-morphological features

A: With light yellow dotted vascular bundles intermittently arranged in a ring





(Enlargement of the cut surface)

0.5 mm

Microscopic feature comparison of Rhizoma Acori Tatarinowii decoction pieces and Rhizoma Anemones Altaicae powder



	Rhizoma Acori Tatarinowii decoction pieces	Rhizoma Anemones Altaicae
Crystal fibre	Crystal fibre is formed as a result of fibre bundle surrounded by cells which contain prisms of calcium oxalate; polychromatic under the polarized light microscope	Absent
Starch granule	Compound granule frequently found, consists of 2-20 (or more) units	Mainly simple granule, compound granule barely found, consists of 2-3 units
Secretory cell	Sub-rounded or oblong, lumen filled with orange-yellow or yellowish-brown secretions	Absent

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

 $50 \mu m$

Summary

Major differences in the features between Rhizoma Acori Tatarinowii decoction pieces and Rhizoma Anemones Altaicae:

		Rhizoma Acori Tatarinowii decoction pieces	Rhizoma Anemones Altaicae
Macroscopic and micro-morphological features	Shape	Long strip-shaped longitudinal slices	Long fusiform
	Surface	Deep brown or greyish- brown	Brownish-yellow or deep brown
	Cut surface	Densely distributed with brown oil spots	With light yellow dotted vascular bundles intermittently arranged in a ring
Microscopic features	Crystal fibre	Present	Absent
	Starch granule	Mostly compound granule	Mostly simple granule
	Secretory cell	Present	Absent

For more information, please refer to the <u>Hong Kong Chinese Materia Medica</u> Standards website:



Acori Tatarinowii Rhizoma - Hong Kong Chinese Materia Medica Standards (Volume 5)

Additional information

Photo of crude Rhizoma Acori Tatarinowii



◆ Flattened cylindrical, mostly curved, frequently with branches, 3-20 cm long, 0.3-1 cm in diameter

Surface is brown or greyish-brown, rough, and has uneven annulate nodes. Node interval 0.2-0.8 cm long, with fine longitudinal striations. With remained rootlets or rounded root scars on one side

Triangular leaf scars arranged left and right alternately. Some with hairy and scaly remnants of leaf on them

Fibrous, whitish or slightly red in fracture. With significant endodermis ring, numerous vascular bundle dots and brown oil cells observable

- ◆ Hard
- ◆ Aromatic. Bitter and slightly pungent taste



Government Chinese Medicines Testing Institute Department of Health

Enquiry Hotline: 3188 8079
Department of Health Website: www.cmro.gov.hk

The information in this pamphlet may be re-disseminated or reproduced, provided that the Government Chinese Medicines Testing Institute (GCMTI), as the source of information, is acknowledged and that the re-dissemination or reproduction is for non-commercial use. Any other reproduction, adaptation, distribution, dissemination or making available of the information in this pamphlet for commercial use is strictly prohibited unless prior written authorization is obtained from the GCMTI.