

Rhizoma Drynariae

versus

Rhizoma Davalliae Divaricatae



Source

***Rhizoma Drynariae**
is the dried rhizome of
Drynaria fortunei (Kunze) J. Sm.
in the family Polypodiaceae

Rhizoma Davalliae Divaricatae
is the dried rhizome of
Davallia divaricate Bl.
in the family Davalliaceae

Overview

Rhizoma Drynariae is a Chinese Materia Medica (CMM) listed in Schedule 2 of the Chinese Medicine Ordinance and the Chinese Pharmacopoeia (2020), while Rhizoma Davalliae Divaricatae has not yet been listed. According to the research from the *Species Systematization and Quality Evaluation of Commonly Used Chinese Traditional Drugs*, more than one type of “Gu shui bu” has been used by the ancients, in particular, the *Jing shi zheng lei bei ji ben cao* from the Song dynasty has recorded species from 4 different families. Currently, *Drynaria fortunei* is widely used across China, while *Davallia divaricate* is customarily used in Guangxi and is the main source of “Gu shui bu” in Guangdong. According to the Chinese Pharmacopoeia, Rhizoma Drynariae can cure trauma and relieve pain, tonify the kidney and strengthen the bone; while according to *Zhong hua ben cao*, Rhizoma Davalliae Divaricatae can activate blood and resolve stasis, tonify the kidney and strengthen the bone, dispel wind and relieve pain. As these two CMM differ in function, they should be used accordingly.

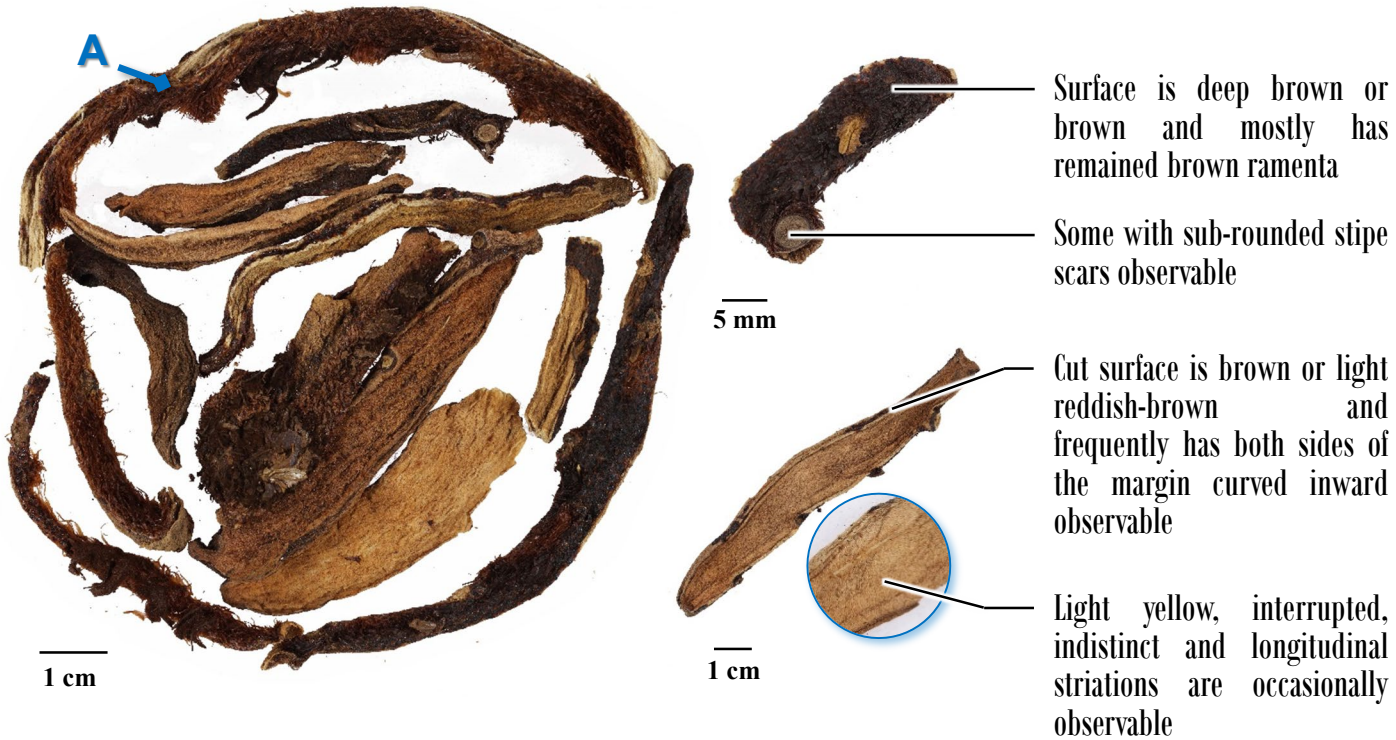
Note:

*Its name in the Chinese Pharmacopoeia (2020) is “Drynariae Rhizoma”.

Key identification features

Macroscopic features of Rhizoma Drynariae decoction pieces

- ◆ Irregular long strip-shaped, mostly curled



Micro-morphological feature

A: Usually densely covered with unburnt or incompletely burnt ramenta



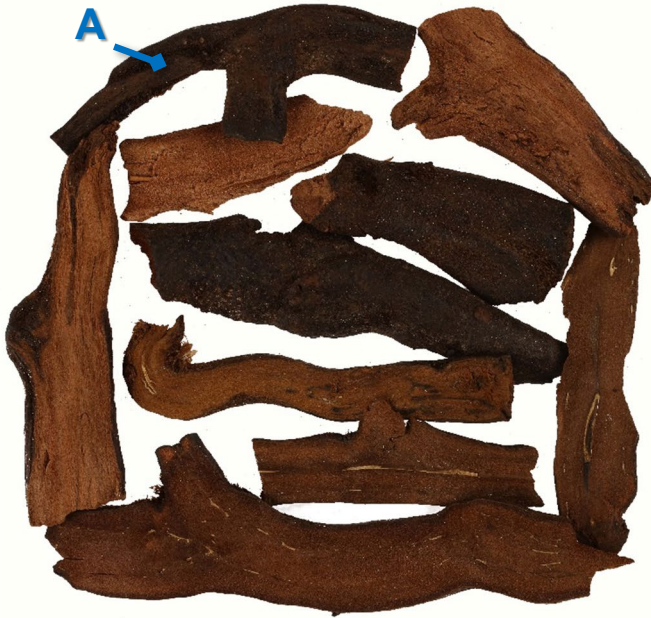
(Surface)

1 mm

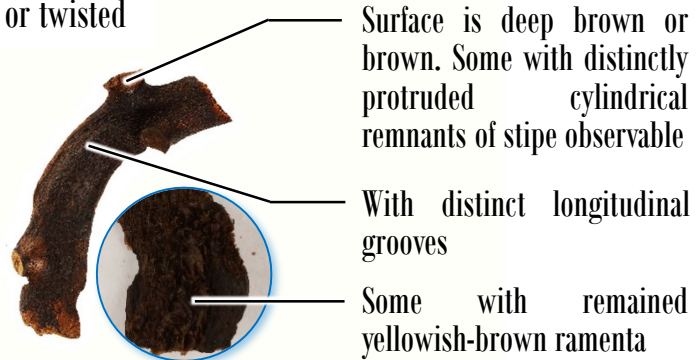
Macroscopic features of Rhizoma Davalliae Divaricatae decoction pieces



◆ Irregular long strip-shaped, slightly straight or twisted



1 cm



Surface is deep brown or brown. Some with distinctly protruded cylindrical remnants of stipe observable

With distinct longitudinal grooves

Some with remained yellowish-brown ramenta

1 cm



Cut surface is brown or reddish-brown and relatively flat

2 yellow, interrupted and longitudinal striations are frequently observable

1 cm

Micro-morphological feature

A: Ramenta are mostly burnt. Surface is relatively smooth and lustrous and has remained ramenta observable sometimes



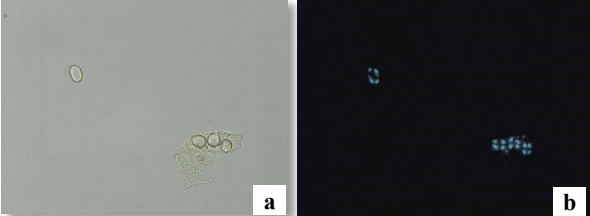
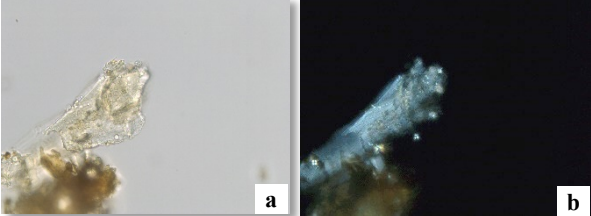


(Surface)

2 mm

Microscopic feature comparison of Rhizoma Drynariae decoction pieces and Rhizoma Davalliae Divaricatae decoction pieces powder



	Rhizoma Drynariae decoction pieces	Rhizoma Davalliae Divaricatae decoction pieces
Body cell of raymentum	 <p>Frequently found, long strip-shaped or irregular, slightly curved or straight wall, usually with hairy protuberances at the margin, cells seriated in 2, apex separated</p>	 <p>Observable or barely found, long strip-shaped or irregular, slightly curved or straight wall, occasionally with or without hairy protuberances at the margin</p>
Starch granule	 <p>Frequently found, relatively large, simple granule rounded, ovate or elliptical, indistinct hilum and striation; black and cruciate-shaped under the polarized light microscope</p>	 <p>Absent or occasionally found, extremely small, simple granule rounded or sub-rounded, indistinct hilum and striation; black and cruciate-shaped under the polarized light microscope</p>

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

50 μm

Summary

Major differences in the features between Rhizoma Drynariae decoction pieces and Rhizoma Davalliae Divaricatae decoction pieces:

		Rhizoma Drynariae decoction pieces	Rhizoma Davalliae Divaricatae decoction pieces
Macroscopic and micro-morphological features	Shape	Mostly curled	Slightly straight or twisted
	Cut surface	Both sides of the margin frequently curved inward. Light yellow longitudinal striations are occasionally observable	Relatively flat. Yellow longitudinal striations are frequently observable
	Surface	Usually densely covered with unburnt or incompletely burnt ramenta	Surface is relatively smooth and lustrous and has distinct longitudinal grooves
Microscopic features	Body cell of ramentum	Frequently found, usually with hairy protuberances at the margin	Observable or barely found, occasionally with or without hairy protuberances at the margin
	Starch granule	Frequently found	Occasionally found or absent

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



Drynariae Rhizoma - Hong Kong Chinese Materia Medica Standards (Volume 7)

Additional information

Photo of crude Rhizoma Drynariae



- ◆ Appears flat long strip-shaped, mostly curved and has branches, 5-15 cm long, 1-1.5 cm wide, 0.2-0.5 cm thick

Surface is densely covered with deep brown to dark brown ramenta which are soft like hairs and become brown or dark brown when burnt

Both sides and the upper surface also have protruded or dented rounded leaf scars, while remnant of stipe and remained rootlet are barely observable

Fracture is reddish-brown and has dotted yellow meristeles arranged annularly

- ◆ Light, fragile and easily broken
- ◆ Slight odour, weak and slightly astringent taste

Photo of crude Rhizoma Davalliae Divaricatae



- ◆ Rhizome is cylindrical and usually twisted, 4-15 cm long, about 1 cm in diameter

Surface is reddish-brown to brown and has distinct longitudinal grooves and circularly protruded scars of frond base

It also has remained yellowish-brown ramenta

Fracture is slightly flat, reddish-brown and has numerous dotted yellow meristeles arranged annularly, of which the 2 meristeles in the centre are relatively large

- ◆ Hard, not easily broken
- ◆ Slight odour and astringent taste



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