

Rhizoma Cynanchi Stauntonii versus Radix Cynanchi Atrati



1 cm



1 cm

Source

#Rhizoma Cynanchi Stauntonii

is the dried rhizome or root of
Cynanchum stauntonii (Decne.) Schltr. ex Levl. or
C. glaucescens (Decne.) Hand. -Mazz.[^]
in the family Asclepiadaceae

Radix Cynanchi Atrati*

is the dried root or rhizome of
Cynanchum atratum Bge. or
C. versicolor Bge.
in the family Asclepiadaceae

Overview

Both Rhizoma Cynanchi Stauntonii and Radix Cynanchi Atrati are listed in Schedule 2 of the Chinese Medicine Ordinance and Chinese Pharmacopoeia (2020). According to the *Zhong yao cai pin zhong lun shu*, it was recorded in *Ben cao chong yuan* of the Qing Dynasty that: “In the drug stores of Suzhou, *Bai qian* had been mistaken for *Bai wei* and vice versa for a long time”, both Chinese Materia Medica (CMM) have had the problem of misuse since ancient times. The author of the aforesaid literature observed that in some areas of Jiangsu, Anhui, Jiangxi and Guangxi once called Rhizoma Cynanchi Stauntonii as “*Bai wei*”. According to the Chinese Pharmacopoeia, Rhizoma Cynanchi Stauntonii has the functions of directing qi downward, resolving phlegm and suppressing cough whilst the functions of Radix Cynanchi Atrati are clearing heat, cooling the blood, promoting diuresis to relieve strangury, detoxifying to treat sores. The functions of these two CMM are quite different and therefore should be used accordingly

Note:

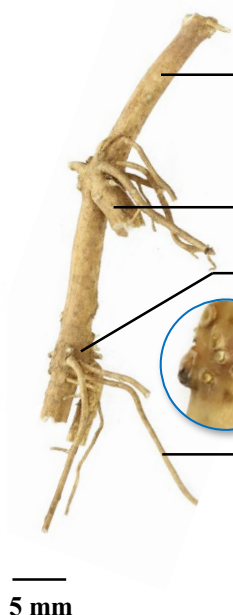
#Its name in the Chinese Pharmacopoeia (2020) is “Cynanchi Stauntonii Rhizoma et Radix”.

[^]Only *Cynanchum stauntonii* is included in this study as currently it is the main species of Rhizoma Cynanchi Stauntonii in the market.

*Its name in the Chinese Pharmacopoeia (2020) is “Cynanchi Atrati Radix et Rhizoma”.

Key identification features

Macroscopic features of Rhizoma Cynanchi Stauntonii decoction pieces



Rhizome is slender, cylindrical and has yellowish-white or yellowish-brown surface

Some with branches

Node is distinct and with numerous roots, which are frequently broken, inserted on
Some only have remained root scars observable

Tenuous, cylindrical and slightly curved root with yellowish-white or yellowish-brown surface

Micro-morphological features

A1: Bark in yellowish-white

A2: Wood in yellow or light yellowish-brown

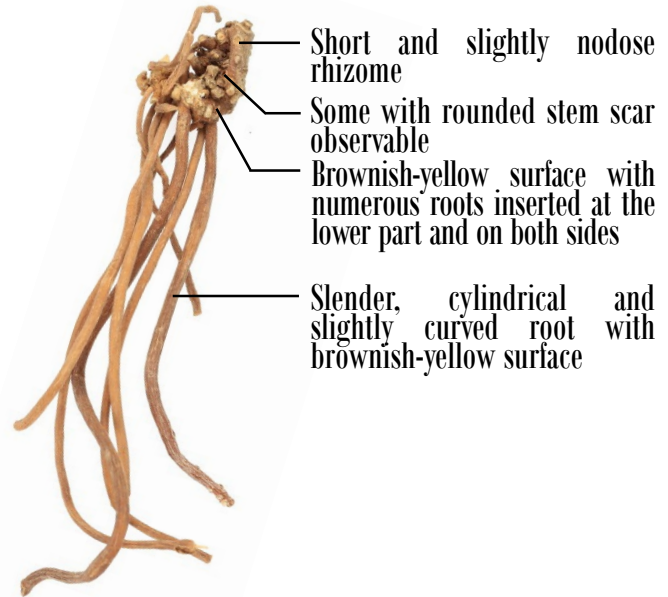
A3: Pith is relatively large, yellowish-white and frequently hollow



(Transverse section of the rhizome)

500 μ m

Macroscopic features of Radix Cynanchi Atrati decoction pieces



Short and slightly nodose rhizome

Some with rounded stem scar observable

Brownish-yellow surface with numerous roots inserted at the lower part and on both sides

Slender, cylindrical and slightly curved root with brownish-yellow surface

Micro-morphological features

A1: Bark in yellowish-brown or light brown

A2: Wood in yellowish-white

A3: Pith is relatively small and yellowish-white or yellowish-brown; some are hollow

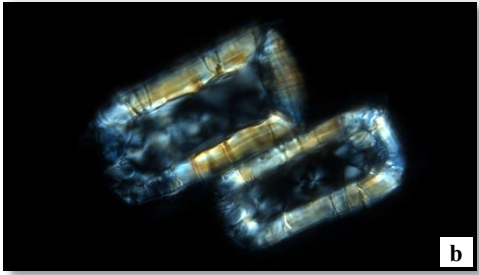

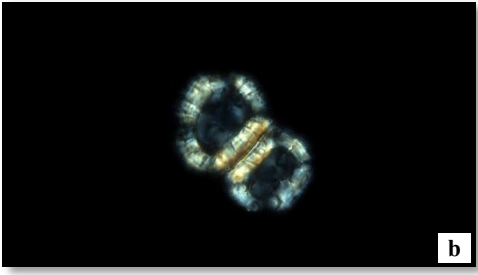

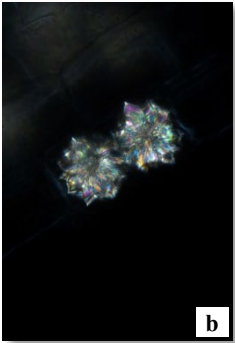

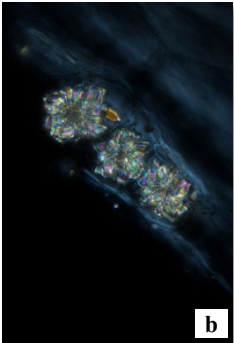
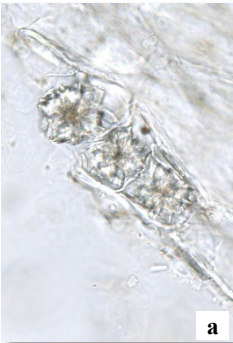


(Transverse section of the rhizome)

1 mm

Microscopic feature comparison of
Rhizoma Cynanchi Stauntonii decoction pieces
and Radix Cynanchi Atrati decoction pieces powder⁺



	Rhizoma Cynanchi Stauntonii decoction pieces	Radix Cynanchi Atrati decoction pieces
Stone cell	<div></div> <p>Frequently found or observable, several in groups or singly scattered, relatively large, polygonal, rectangular or sub-rounded, with distinct striations and pit canals, with pits; bright white or orange-yellow under the polarized light microscope</p>	<div></div> <p>Barely found, mostly several in groups, relatively small, polygonal, rectangular or sub-rounded, with distinct striations and pit canals, with pits; bright white or orange-yellow under the polarized light microscope</p>
Cluster of calcium oxalate	<div></div> <p>Frequently found, scattered or present in parenchymatous cell; polychromatic under the polarized light microscope</p>	<div></div> <p>Numerous, scattered or present in parenchymatous cell; polychromatic under the polarized light microscope</p>

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

50 μm

Note:
⁺Features of Rhizoma Cynanchi Stauntonii decoction pieces and Radix Cynanchi Atrati decoction pieces powders are very similar, only small differences in size and amount are observable.

Summary

Major differences in the features between Rhizoma Cynanchi Stauntonii decoction pieces and Radix Cynanchi Atrati decoction pieces:

		Rhizoma Cynanchi Stauntonii decoction pieces	Radix Cynanchi Atrati decoction pieces
Macroscopic and micro-morphological features	Rhizome	Slender and cylindrical	Short and slightly nodose
	Transverse section of the rhizome	Pith is relatively large and frequently hollow	Pith is relatively small and some are hollow
Microscopic features	Stone cell	Frequently found or observable, relatively large	Barely found, relatively small
	Cluster of calcium oxalate	Frequently found	Numerous

Additional information

Photo of crude Rhizoma Cynanchi Stauntonii

C. stauntonii

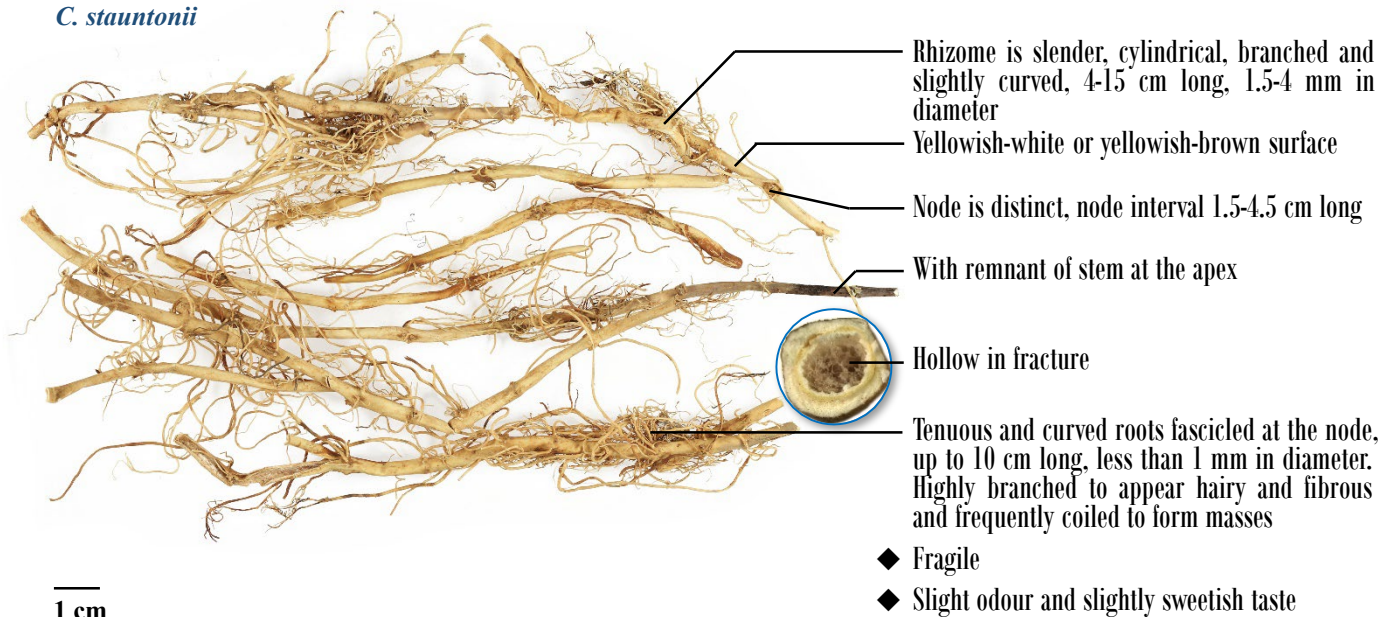


Photo of crude Radix Cynanchi Atrati



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