

Radix Cynanchi Atrati versus Gerberae Piloselloidis Herba



1 cm



1 cm

Source

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

Gerberae Piloselloidis Herba
is the dried whole part of
Gerbera piloselloides (L.) Cass.
in the family Compositae

Overview

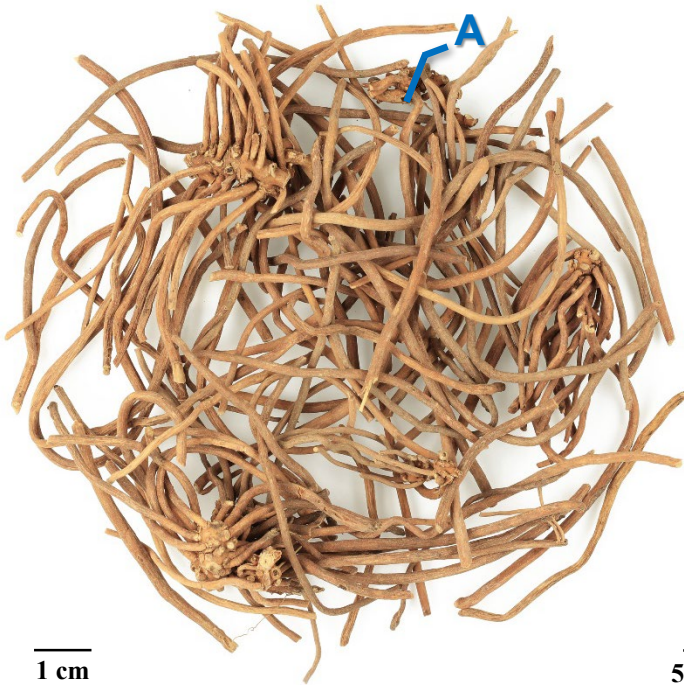
Radix Cynanchi Atrati is listed in both Schedule 2 of the Chinese Medicine Ordinance and the Chinese Pharmacopoeia (2020), while Gerberae Piloselloidis Herba has not been listed in either reference. According to the *Differentiation and Clinical Application of Confusable Traditional Chinese Medicinal Herbs Varieties*, as many as 20 plant species from 4 families had been medicinally used as “Bai wei” across the country. Among them, Hainan, Guangdong and Guangxi used the whole part of *Gerbera piloselloides* in the family Compositae as “Bai wei”, and is named as Gerberae Piloselloidis Herba in the *Chinese Materia Medica Standards in Guangdong Province*, with the functions of clearing heat and detoxification, diffusing lungs to suppress cough, and moving qi and activating blood. According to the Chinese Pharmacopoeia, the functions of Radix Cynanchi Atrati are to clear heat and cool blood, promote diuresis to relieve strangury, and detoxify to treat sores. Due to different functions, these two Chinese Materia Medica should be used accordingly.

Note:

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

Key identification features

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: Yellowish-white or yellowish-brown pith; some are hollow



(Transverse section of the rhizome)

1 mm

Macroscopic features of Gerberae Piloselloidis Herba decoction pieces



Short rhizome with greyish-white hairs frequently observable at the apex and numerous roots inserted at the lower part and on both sides

Slender, cylindrical and slightly curved root with brownish-yellow, yellowish-brown or light brown surface



Leaf shriveled. Intact leaf appears ovoid or oblong when flattened, with blackish-brown or brown upper surface

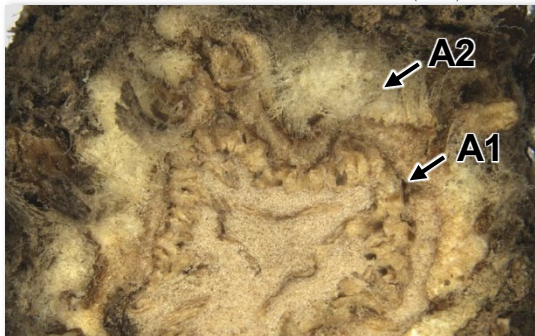
Lower surface is densely covered with greyish-white hairs

Micro-morphological features

A1: Bark, wood and pith in yellowish-white, yellowish-brown or brown. Colour of cambium ring(→) is usually darker. Some wood is not significant

A2: Frequently surrounded by remained petioles and greyish-white long hairs(→)

B: Densely covered with matted and long hairs







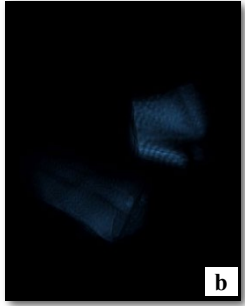
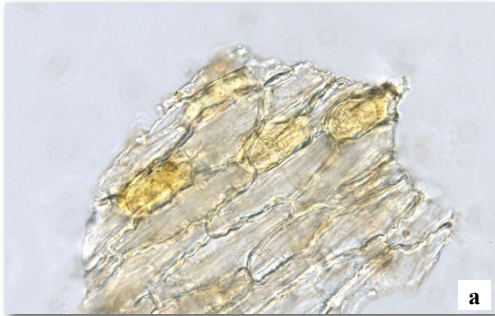

(Transverse section of the rhizome) 500 μm



(Lower surface of the leaf) 500 μm

Microscopic feature comparison of Radix Cynanchi Atrati decoction pieces and Gerberae Piloselloidis Herba decoction pieces powder



	Radix Cynanchi Atrati decoction pieces	Gerberae Piloselloidis Herba decoction pieces
Non-glandular hair	<div></div> <p>Absent</p>	<div><p>a</p></div> <p>Numerous, extremely long, thin wall, mostly broken</p>
Inulin [#]	<div></div> <p>Absent</p>	<div><p>a</p><p>b</p></div> <p>Numerous, irregular or slightly fan-shaped, some with radial striations visible on the surface; white under the polarized light microscope</p>
Secretory cell	<div><p>a</p></div> <p>Sub-square, sub-rounded or sub-polygonal, contains yellow or yellowish-brown secretions</p>	<div></div> <p>Absent</p>

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

50 μm

Note:

[#]Prepare the slide by adding chloral hydrate test solution without heating and observe.

Summary

Major differences in the features between Radix Cynanchi Atrati decoction pieces and Gerberae Piloselloidis Herba decoction pieces:

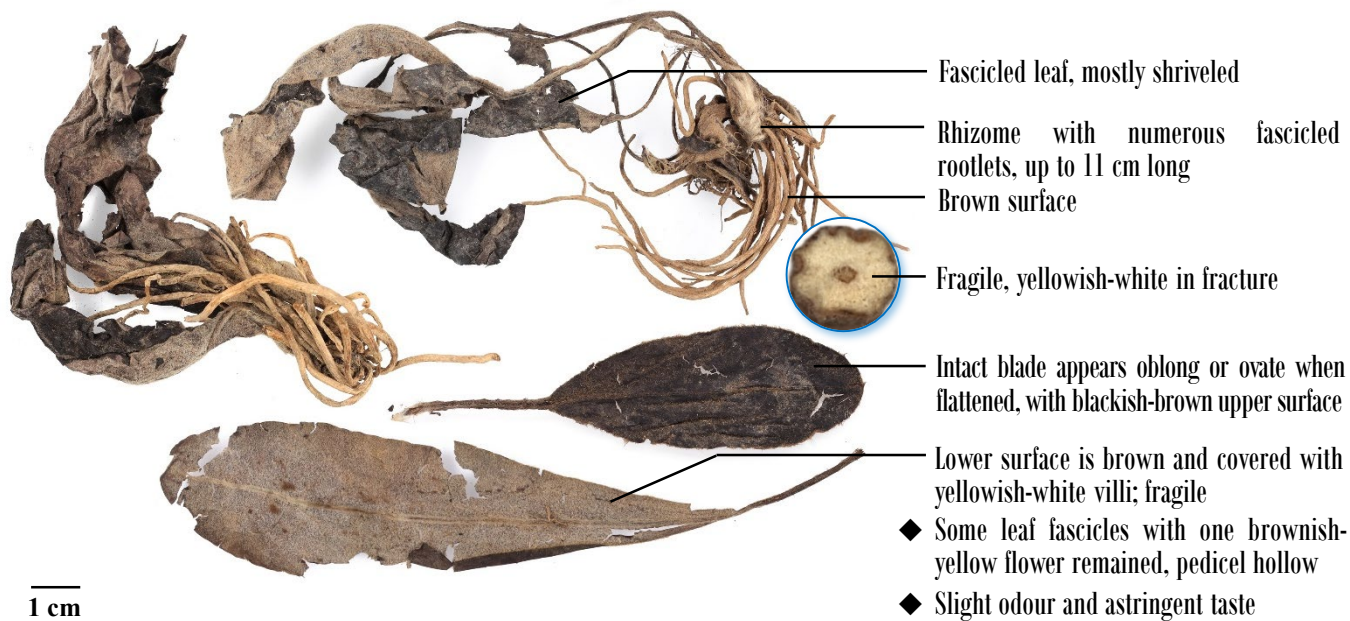
		Radix Cynanchi Atrati decoction pieces	Gerberae Piloselloidis Herba decoction pieces
Macroscopic and micro-morphological features	Apex of the rhizome	Glabrous	Frequently with greyish-white hairs observable
	Leaf	Absent	Lower surface is densely covered with matted and long hairs
Microscopic features	Non-glandular hair	Absent	Present
	Inulin	Absent	Present
	Secretory cell	Present	Absent

Additional information

Photo of crude Radix Cynanchi Atrati



Photo of crude Gerberae Piloselloidis Herba



Government Chinese Medicines Testing Institute
Department of Health
Enquiry Hotline: 3188 8079
Website: www.cmro.gov.hk

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