

# Herba Polygoni Avicularis versus Rhizoma Belamcandae



## Source

**\*Herba Polygoni Avicularis**  
is the dried aerial part of  
*Polygonum aviculare* L.  
in the family Polygonaceae

**Rhizoma Belamcandae<sup>^</sup>**  
is the dried rhizome of  
*Belamcanda chinensis* (L.) DC.  
in the family Iridaceae

## Overview

Herba Polygoni Avicularis and Rhizoma Belamcandae are both listed under the Chinese Pharmacopoeia (2020) and Schedule 2 of the Chinese Medicine Ordinance. According to *Zhong hua ben cao*, Herba Polygoni Avicularis has been recorded in the *Ben cao jing ji zhu* to be “Everywhere...with small and green leaves, and also called ‘Bian zhu’”, while *Ben cao gang mu* recorded Rhizoma Belamcandae to possess “flat leaves and bamboo-like roots”, and thus interpreted and named as “Bian zhu”. Since these two Chinese Materia Medica (CMM) are also referred as “Bian zhu”, they can easily cause confusion despite they are of different origins. According to the Chinese Pharmacopoeia, Herba Polygoni Avicularis has strangury relieving and diuretic properties, as well as killing worm and relieving itch; while Rhizoma Belamcandae can clear heat and detoxify and eliminate phlegm and soothe the throat. As the functions of these two CMM differ, they should be used accordingly.

Note:

\*Its name in the Chinese Pharmacopoeia (2020) is “Polygoni Avicularis Herba”.

<sup>^</sup>Its name in the Chinese Pharmacopoeia (2020) is “Belamcandae Rhizoma”.

## Key identification features

### Macroscopic features of Herba Polygoni Avicularis decoction pieces



◆ Irregular sections, varies in length



Flower is small, fascicled at the leaf axil, mostly fallen off and occasionally observable. Perianth is brownish-green and the margin is white or light red

Leaf nearly has no petiole or has short petiole. Mostly fallen off and some are broken

Intact leaf appears lanceolate or elliptical, with entire margin and appears greyish-green, brownish-green or light brown when flattened



Surface of the stem is brownish-green, reddish-brown or greyish-green and has fine, dense and slightly protruded longitudinal striations

Node is slightly swollen and has light brown or whitish membranous ocrea which divided into filiform



Appears cylindrical and slightly flat, some with branches



Cut surface of the pith is white

### Micro-morphological feature

A: Glabrous, with dotted striations(→) observable between longitudinal ridges



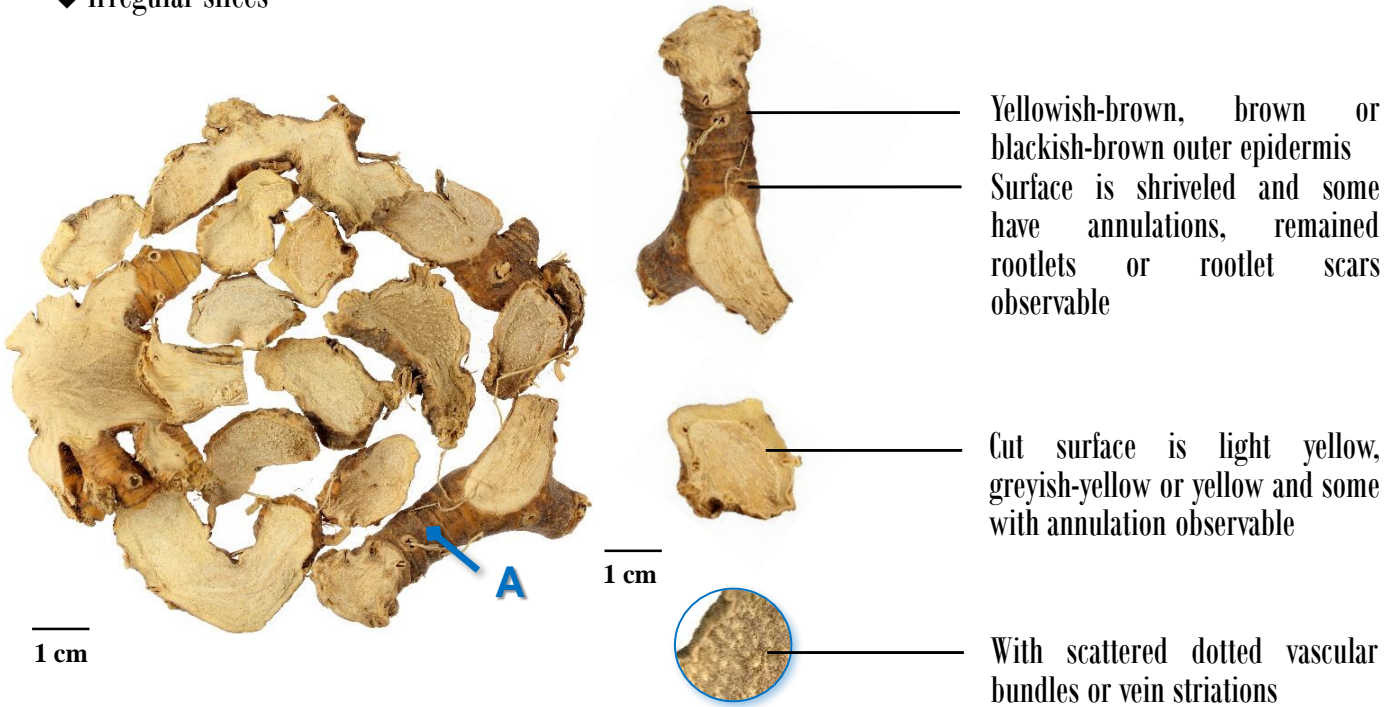
(Surface of the stem)

500 μm



## Macroscopic features of Rhizoma Belamcandae decoction pieces

### ◆ Irregular slices



### Micro-morphological feature

A: With reticulate striations(→) observable near to the annulations



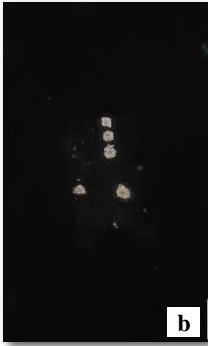



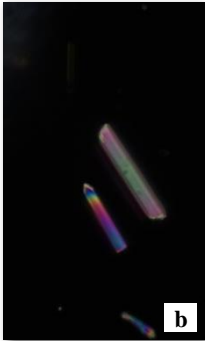



(Surface of the rhizome)

500 μm



Microscopic feature comparison of  
Herba Polygoni Avicularis decoction pieces  
and Rhizoma Belamcandae decoction pieces powder<sup>#</sup>



	Herba Polygoni Avicularis decoction pieces	Rhizoma Belamcandae decoction pieces
Cluster of calcium oxalate	<div></div> <p>Numerous, singly scattered or present in parenchymatous cell; polychromatic under the polarized light microscope</p>	<div></div> <p>Absent</p>
Columnar crystal of calcium oxalate	<div></div> <p>Absent</p>	<div></div> <p>Frequently found, scattered, mostly broken; polychromatic under the polarized light microscope</p>
Epidermal cell of leaf	<div></div> <p>Polygonal in surface view, with slightly beaded-thickened anticlinal wall, anisocytic stomata (→)</p>	<div></div> <p>Absent</p>

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

50 μm

## Summary

Major differences in the features between Herba Polygoni Avicularis decoction pieces and Rhizoma Belamcandae decoction pieces :

		Herba Polygoni Avicularis decoction pieces	Rhizoma Belamcandae decoction pieces
Macroscopic and micro-morphological features	Appearance	Irregular sections, varies in length	Irregular slices
	Cut surface	Pith of the stem is white	With scattered dotted vascular bundles or vein striations, some with annulations observable
	Surface	Glabrous, with dotted striations observable between longitudinal ridges	With reticulate striations observable near to the annulations
Microscopic features	Cluster of calcium oxalate	Present	Absent
	Columnar crystal of calcium oxalate	Absent	Present
	Epidermal cell of leaf	Present	Absent

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



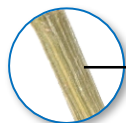
Polygoni Avicularis Herba - Hong Kong Chinese Materia Medica Standards (Volume 5)  
Rhizoma Belamcandae - Hong Kong Chinese Materia Medica Standards (Volume 3)

## Additional information

### Photo of crude Herba Polygoni Avicularis



1 cm



Stem is cylindrical and slightly flat and has branches, 15-40 cm long, 0.2-0.3 cm in diameter



Surface is greyish-green or brownish-red and has fine, dense and slightly protruded longitudinal striations



Node is slightly swollen and has light brown membranous ocrea. Node interval is about 3 cm long; hard, easily broken



Pith is white in fracture

Alternate leaf nearly has no petiole or has short petiole. Blade is mostly fallen off or shriveled and broken. Intact blade appears lanceolate, with entire margin and appears brownish-green or greyish-green on both sides when flattened.

◆ Slight odour and slightly bitter taste

### Photo of crude Rhizoma Belamcandae



1 cm



Appears irregular nodose, 3-10 cm long, 1-2 cm in diameter. Surface is yellowish-brown, brown or blackish-brown, shriveled and has denser annulations

Upper part has several stem scars dented in disk-shaped and occasionally has remnants of stem

Lower part has remained rootlets and root scars

Fracture is yellow and granular

◆ Hard

◆ Slight odour, bitter and slightly pungent taste



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