

Radix Rhapontici versus Radix et Rhizoma Veratri



Source

***Radix Rhapontici**
is the dried root of
Rhaponticum uniflorum (L.) DC.
in the family Compositae

Radix et Rhizoma Veratri
is the dried root or rhizome of
Veratrum nigrum L.# or
V. schindleri Loes. f.
in the family Liliaceae

Overview

The Chinese Materia Medica (CMM) Radix Rhapontici is listed in both the Schedule 2 of the Chinese Medicine Ordinance and the Chinese Pharmacopoeia (2020), while Radix et Rhizoma Veratri is only listed in Schedule 2 of the Chinese Medicine Ordinance. In the past, there have been poisoning cases due to incorrect dispensing of Radix et Rhizoma Veratri as Radix Rhapontici to patients. According to the Chinese Pharmacopoeia, Radix Rhapontici can clear heat and detoxify, disperse abscesses and promote lactation. According to *A Reference Book for Chinese medicines which had been reported as adverse events in Hong Kong*, Radix et Rhizoma Veratri can induce vomiting of wind-phelgm, and kill worms. However, it has a narrow therapeutic window and it is toxic to the cardiovascular system and nervous system. External applications of it can also cause burning sensation on the skin and mucosa, sneezing and tearing, etc. Traditionally, it is believed that Radix et Rhizoma Veratri is antagonise various CMM named “Shen”, Herba Asari and Radix Paeoniae. Despite the name of Radix Rhapontici and Radix et Rhizoma Veratri includes the word “Lu”, their source, efficacy and toxicity varies significantly, therefore, extra precautions is needed when distributing and using these two CMM.

Note:

*Its name in the Chinese Pharmacopoeia (2020) is “Rhapontici Radix”.

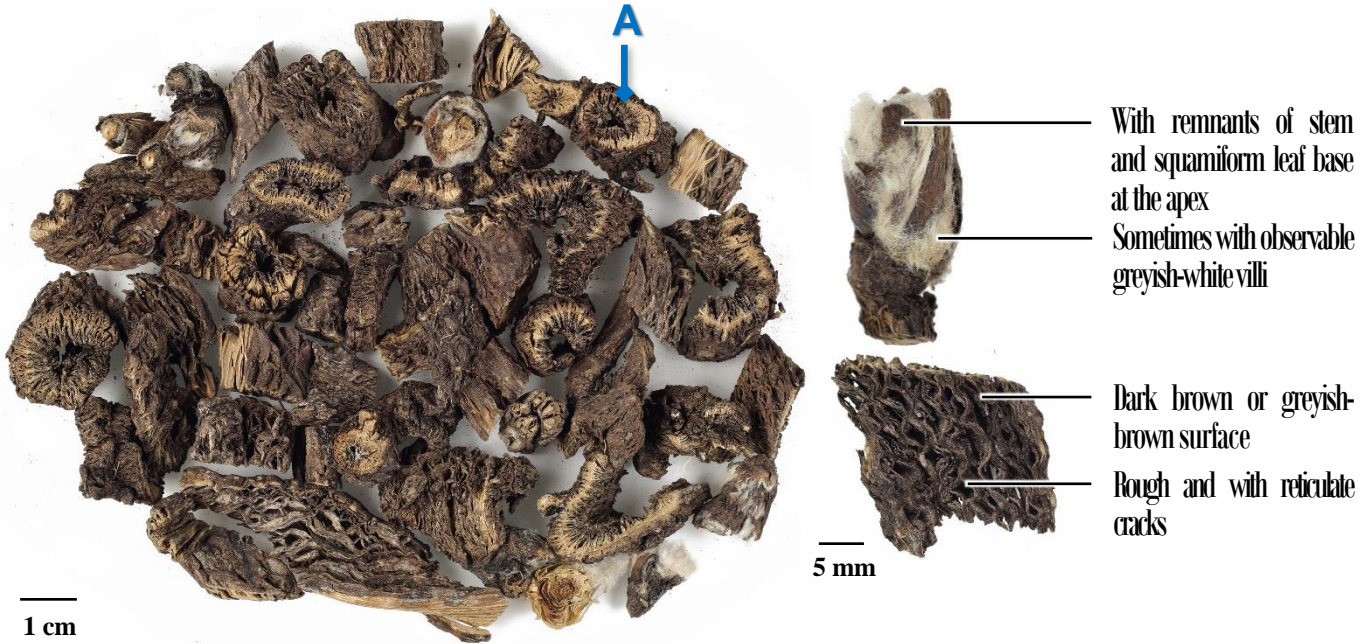
#Only *Veratrum nigrum* is included in this study as currently it is the main species of Radix et Rhizoma Veratri in the market.

Key identification features

Macroscopic features of Radix Rhapontici decoction pieces



- ◆ Sub-rounded or irregular thick slices



Micro-morphological feature

A: Wood(→) is yellow or yellowish-white, sub-triangular and has black radial fissures(→) in the centre



(Transverse section of the root)

2 mm

Macroscopic features of Radix et Rhizoma Veratri

- ◆ Rhizome is cylindrical or conic and the lower part has numerous slender and curved roots



Micro-morphological features

A: Yellow or light yellowish-brown. Cortex has observable brown or light brown dots (→). With observable light yellow, irregular and scattered annular or linear striations (→) in the centre



(Transverse section of the root)

1 mm

B: Whitish or yellowish-white. With observable yellowish-white or yellowish-brown steles (→) in the centre






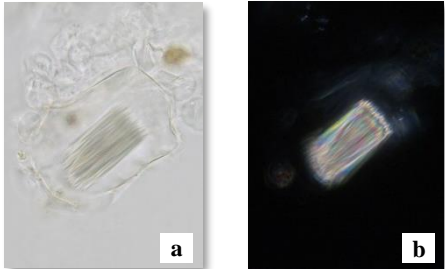


(Transverse section of the rhizome)

500µm

Microscopic feature comparison of Radix Rhapontici decoction pieces and Radix et Rhizoma Veratri powder



	Radix Rhapontici decoction pieces	Radix et Rhizoma Veratri[%]
Non-glandular hair	 <p>Frequently found, mostly broken, colourless or light yellow</p>	 <p>Absent</p>
Secretory canal	 <p>Absent</p>	 <p>Long strip-shaped, contains reddish-brown or yellowish-brown secretion</p>
Raphide of calcium oxalate	 <p>Absent</p>	 <p>Frequently found, present in bundles in mucilage cell or scattered; polychromatic under the polarized light microscope</p>

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

50 µm

Note:

[%]Radix et Rhizoma Veratri Powder is irritating to skin and mucosa. Handle it with care during powder and slide preparation.

Summary

Major differences in the features between Radix Rhapontici decoction pieces and Radix et Rhizoma Veratri :

		Radix Rhapontici decoction pieces	Radix et Rhizoma Veratri
Macroscopic and micro-morphological features	Apex	With remnants of stem and squamiform leaf base; sometimes with observable greyish-white villi	Sometimes with observable remnants of leaf base
	Surface	With reticulate cracks	With fine and dense horizontal wrinkles on the root
	Transverse section of the root	With black radial fissures in the centre	With observable yellowish-white or yellowish-brown steles in the centre
Microscopic features	Non-glandular hair	Present	Absent
	Secretory canal	Absent	Present
	Raphide of calcium oxalate	Absent	Present

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



Radix Rhapontici - Hong Kong Chinese Materia Medica Standards (Volume 8)

Additional information

Photo of crude Radix Rhapontici



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