

# Radix Sophorae Tonkinensis versus Rhizoma Menispermis



## Source

**\*Radix Sophorae Tonkinensis**  
is the dried root or rhizome of  
*Sophora tonkinensis* Gapnep.  
in the family Leguminosae

**Rhizoma Menispermis<sup>#</sup>**  
is the dried rhizome of  
*Menispermum dauricum* DC.  
in the family Menispermaceae

## Overview

Radix Sophorae Tonkinensis and Rhizoma Menispermis are both listed in the Chinese Pharmacopoeia (2020). In addition, Radix Sophorae Tonkinensis and Rhizoma Menispermis are listed in Schedules 1 and 2 of the Chinese Medicine Ordinance respectively. The *Modern Chinese Materia Medica* described the complexity of species being used as "*Shan dou gen*" in various places, with *Sophora tonkinensis* produced mainly in Guangxi being more commonly used in most regions. On the other hand, *Menispermum dauricum* (Rhizoma Menispermis) is produced mainly in the Northeast and Northern regions of China, and its name carries the meaning of "*Shan dou gen* used in the North". According to the Chinese Pharmacopoeia, both Radix Sophorae Tonkinensis and Rhizoma Menispermis can clear heat and detoxify. Radix Sophorae Tonkinensis possesses toxicity, and can alleviate edema and soothe the throat. On the other hand, Rhizoma Menispermis possesses slight toxicity, and can dispel wind to relieve pain. Due to variations in toxicity and functions, these two Chinese Materia Medica should be used accordingly.

Note:

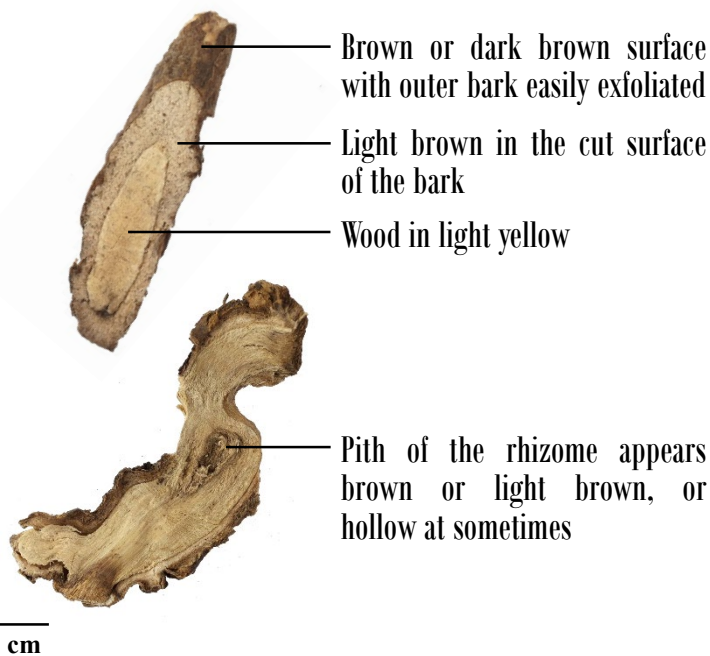
\*Its name in the Chinese Pharmacopoeia (2020) is "Sophorae Tonkinensis Radix et Rhizoma".

<sup>#</sup>Its name in the Chinese Pharmacopoeia (2020) is "Menispermis Rhizoma".

## Key identification features

### Macroscopic features of Radix Sophorae Tonkinensis decoction pieces<sup>^</sup>

- ◆ Elliptical or irregular oblique slices
- ◆ Mainly root

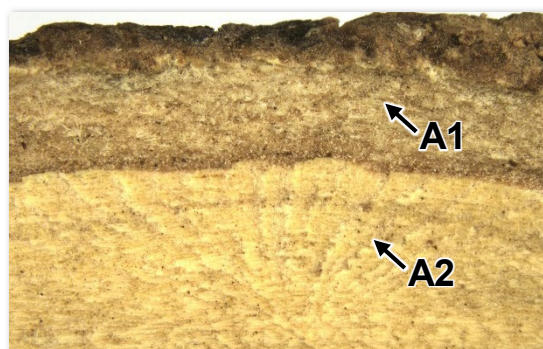


- ◆ With bean-like odour

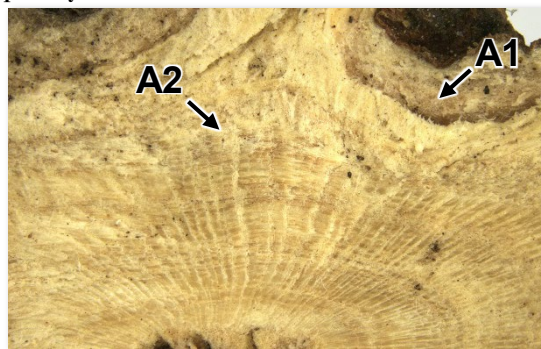
### Micro-morphological features

A1: No significant differences in the colour at the bark

A2: With radial striations frequently observable in wood



(Cut surface of the root)



(Cut surface of the rhizome)

Note:

<sup>^</sup>Radix Sophorae Tonkinensis is a toxic CMM. Handle it with care and avoid tasting during identification.



## Macroscopic features of Rhizoma Menispermii decoction pieces



### ◆ Cylindrical sections

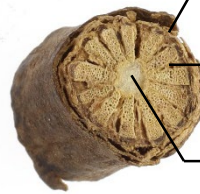


1 cm



Yellowish-brown, brown or dark brown surface with outer bark easily exfoliated

Some with curved rootlets



Narrow bark appears as light brown in the cut surface

Wood in light yellow with radial fissures

White pith

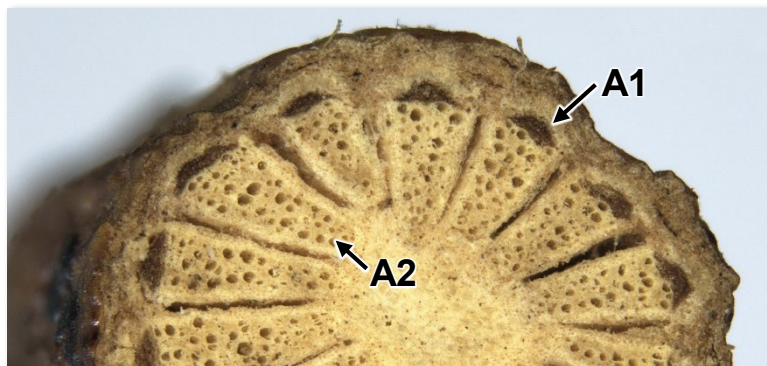
5 mm

### ◆ Slight odour

## Micro-morphological features

A1: Phloem appeared in the bark as a deeper colour, crescentic or semi-circular in shape

A2: With radial fissures and numerous duct holes(→) in the wood

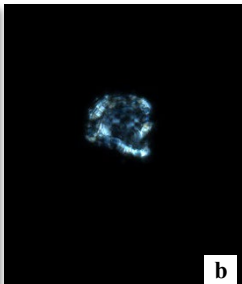

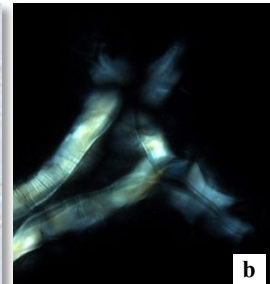

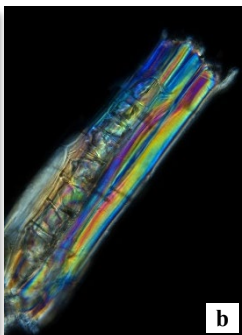

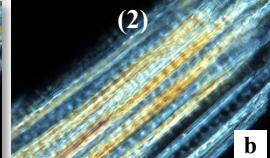
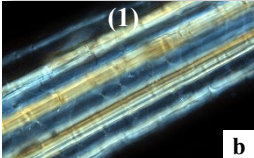
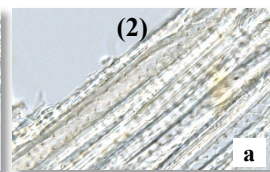
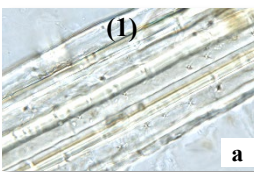
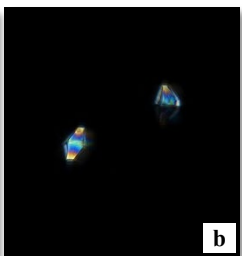
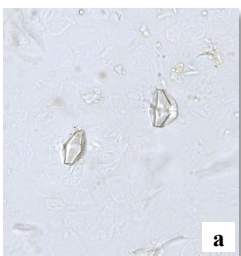
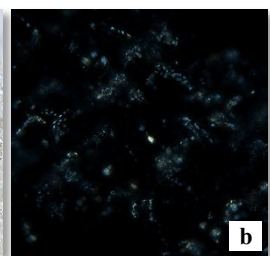
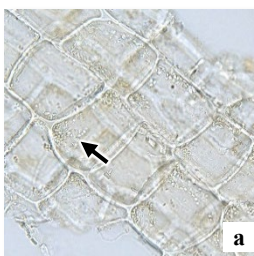


(Cut surface of the rhizome)

1 mm

Microscopic feature comparison of Radix Sophorae Tonkinensis decoction pieces and Rhizoma Menispermii decoction pieces powder



	Radix Sophorae Tonkinensis decoction pieces	Rhizoma Menispermii decoction pieces
Stone cell	<div></div> <p>Barely found, sub-square, sub-rounded or sub-polygonal; orange-yellow or bright white under the polarized light microscope</p>	<div></div> <p>Frequently found, irregular or sub-polygonal, mostly with branches; orange-yellow or bright white under the polarized light microscope</p>
Fibre	<div></div> <p>With 1 form only. Fibre with thick wall, with primary wall easily separated from the secondary wall. Crystal fibre is formed as a result of fibres surrounded by parenchymatous cells which usually contain prisms of calcium oxalate; polychromatic under the polarized light microscope</p>	<div></div> <p>With 2 forms. Pericyclic fibre(1) has slightly thick wall, with dotted or cleft-like pits, some with septa; xylem fibre(2) has slightly thick wall, with numerous cruciform or cleft-like pits; bright white or orange-yellow under the polarized light microscope</p>
Crystal of calcium oxalate	<div></div> <p>Numerous prisms of calcium oxalate, mainly appears rhombic, double-conical or polygonal; polychromatic under the polarized light microscope</p>	<div></div> <p>Crystal sand of calcium oxalate is visible, fine, present in the parenchymatous cell, cylindrical or granular, appears square for larger one; bright white or orange-yellow 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 Radix Sophorae Tonkinensis decoction pieces and Rhizoma Menispermi decoction pieces:

		Radix Sophorae Tonkinensis decoction pieces	Rhizoma Menispermi decoction pieces
Macroscopic and micro-morphological features	<b>Appearance</b>	Elliptical or irregular	Cylindrical
	<b>Bark</b>	Without significant differences in colour	Phloem appears as deeper colour
	<b>Wood</b>	Without duct holes	With numerous duct holes
Microscopic features	<b>Stone cell</b>	Without branches	Mostly with branches
	<b>Fibre</b>	With crystal fibres	Without crystal fibres
	<b>Crystal of calcium oxalate</b>	Prism of calcium oxalate	Crystal sand of calcium oxalate

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

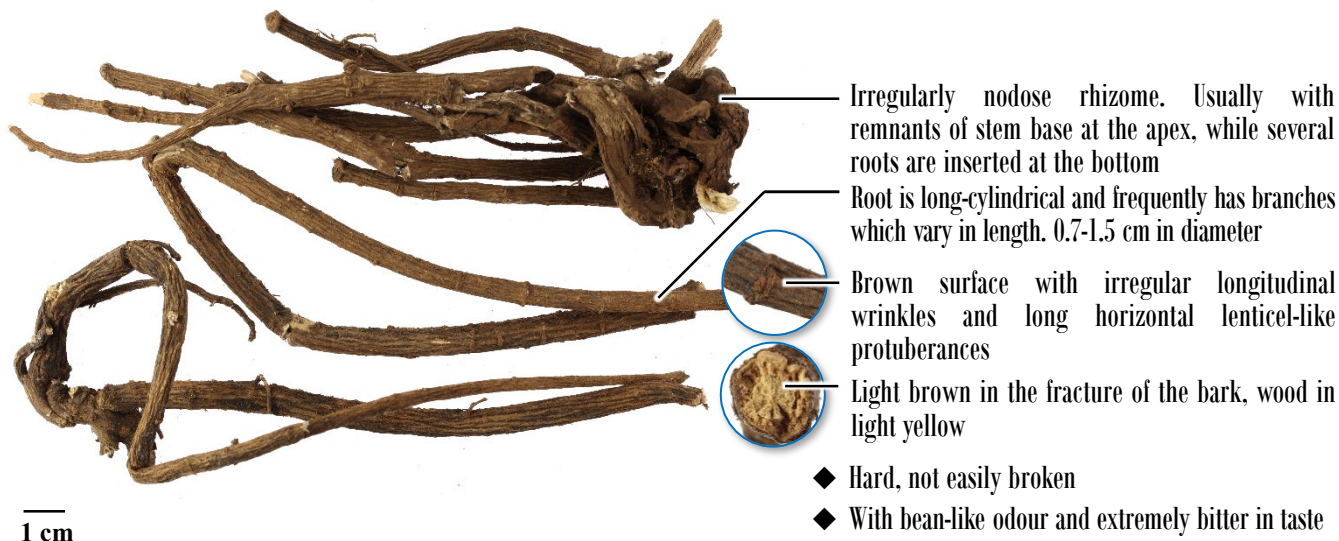


Sophorae Tonkinensis Radix et Rhizoma - Hong Kong Chinese Materia Medica Standards (Volume 8)  
Menispermi Rhizoma - Hong Kong Chinese Materia Medica Standards (Volume 8)

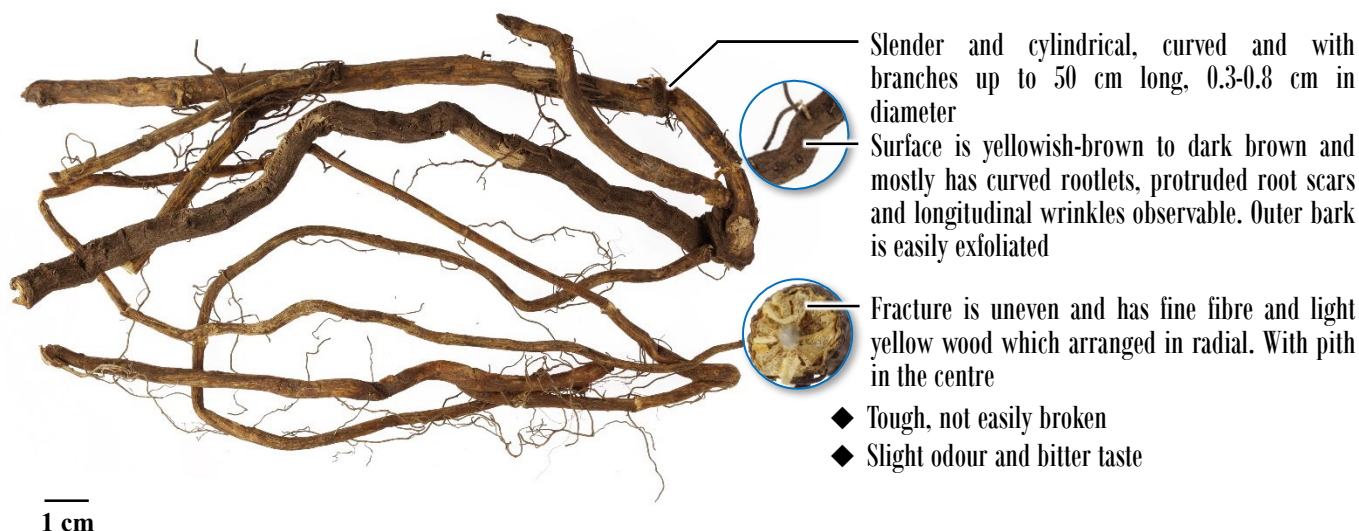


## Additional information

### Photo of crude Radix Sophorae Tonkinensis



### Photo of crude Rhizoma Menispermii



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