

Spina Gleditsiae versus Gleditsiae Japonicae Spina



Source

***Spina Gleditsiae**
is the dried spine of
Gleditsia sinensis Lam.
in the family Leguminosae

Gleditsiae Japonicae Spina
is the dried spine of
Gleditsia japonica Miq.
in the family Leguminosae

Overview

Spina Gleditsiae is a Chinese Materia Medica (CMM) listed in both the Schedule 2 of the Chinese Medicine Ordinance and the Chinese Pharmacopoeia (2020), while Gleditsiae Japonicae Spina is not listed in either references. Both CMM is the spine of the trees of the genus *Gleditsia* (family Leguminosae) and they share similar appearances. According to the research by the authors of the *Species Systematization and Quality Evaluation of Commonly Used Chinese Traditional Drugs*, some areas had mistakenly used the spine of the *Gleditsia japonica* as “Zao jiao ci”. Although no literatures has compared the efficacies of these two CMM, the authors of the *Species Systematization and Quality Evaluation of Commonly Used Chinese Traditional Drugs* had performed simple chemical colour reaction and fluorescence identification and found that there are significant differences between the two CMM, thus, they should be used accordingly.

Note:

*Its name in Chinese Pharmacopoeia (2020) is “Gleditsiae Spina”.

Key identification features

Macroscopic features of Spina Gleditsiae decoction pieces



◆ Cylindrical, conic or irregular sections



1 cm



Apex of spine is pointed and fine

Surface is brown, reddish-brown or dark brown and usually has fine longitudinal striations

Slightly lustrous

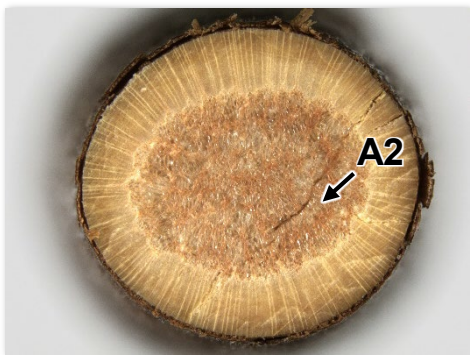
Usually with branches

5 mm

Micro-morphological features

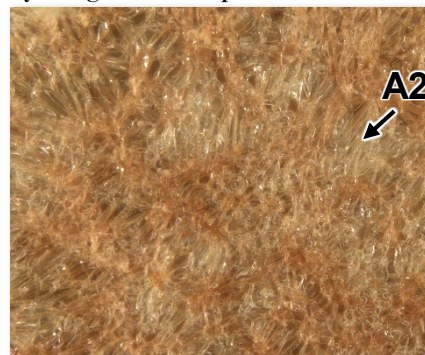
A1: Rounded or sub-rounded

A2: Pith(→) is large and light reddish-brown or yellowish-brown. Cells are usually varied in size and relatively irregular in shape



(Transverse section)

2 mm



(Transverse section)

0.5 mm

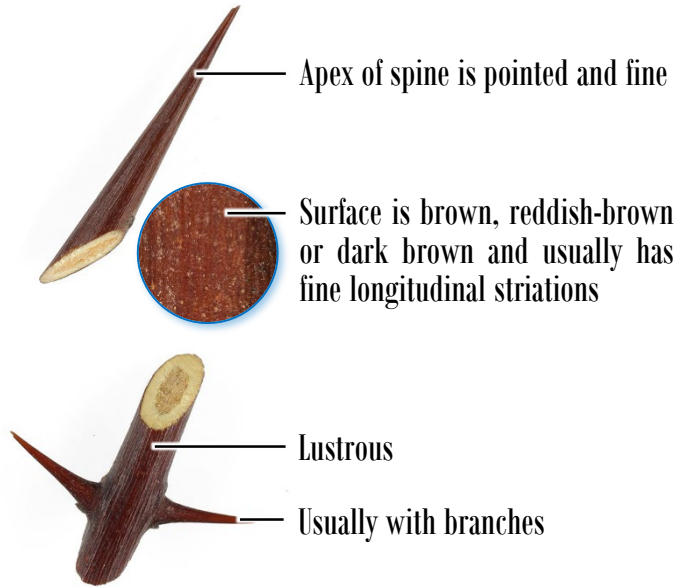
Macroscopic features of Gleditsiae Japonicae Spina decoction pieces



◆ Flattened cylindrical, flattened conic or irregular sections



1 cm



Apex of spine is pointed and fine

Surface is brown, reddish-brown or dark brown and usually has fine longitudinal striations

Lustrous

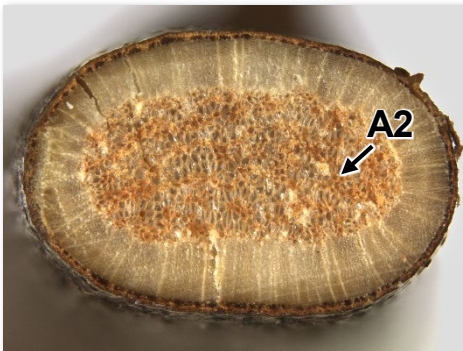
Usually with branches

5 mm

Micro-morphological features

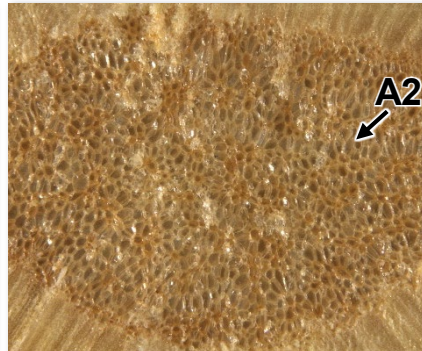
A1: Elliptical or oblong

A2: Pith(→) is large and light reddish-brown or yellowish-brown. Cells are usually similar in size and relatively regular in shape



(Transverse section)

1 mm

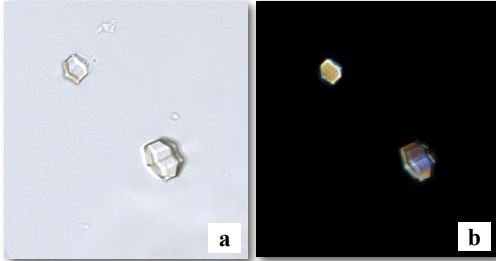
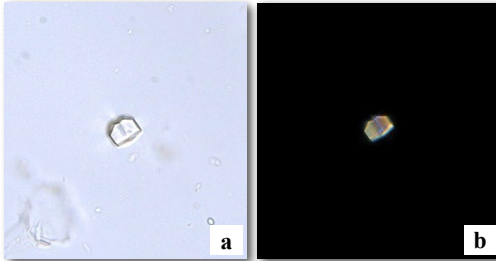
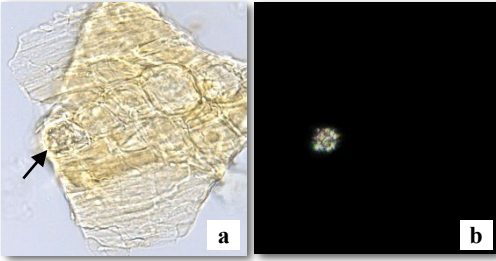
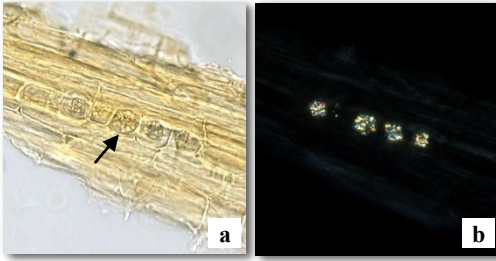
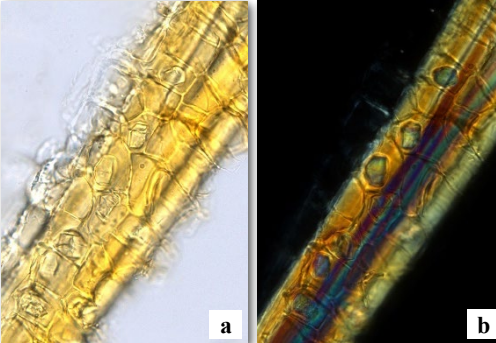
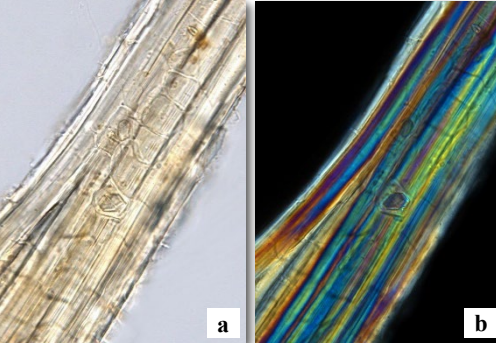


(Transverse section)

0.5 mm

Microscopic feature comparison of Spina Gleditsiae decoction pieces and Gleditsiae Japonicae Spina decoction pieces powder[#]



	Spina Gleditsiae decoction pieces	Gleditsiae Japonicae Spina decoction pieces
Prism of calcium oxalate	 <p>Frequently found or visible, scattered or present in parenchymatous cell; polychromatic under the polarized light microscope</p>	 <p>Barely found, scattered or present in parenchymatous cell; polychromatic under the polarized light microscope</p>
Cluster of calcium oxalate	 <p>Occasionally or barely found, scattered or present in parenchymatous cell, angle broad and obtuse; polychromatic under the polarized light microscope</p>	 <p>Visible, scattered or present in parenchymatous cell, angle broad and obtuse; polychromatic under the polarized light microscope</p>
Crystal fibre	 <p>Barely found, fibre wall thick or slightly thick, crystal fibre is formed as a result of fibres surrounded by parenchymatous cells which usually contain prisms of calcium oxalate; bright white, orange yellow or polychromatic under the polarized light microscope</p>	 <p>Occasionally found, fibre wall thick or slightly thick, crystal fibre is formed as a result of fibres surrounded by parenchymatous cells which usually contain prisms of calcium oxalate; bright white, orange yellow or polychromatic under the polarized light microscope</p>

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

50 μm

Note:

[#]Features of Spina Gleditsiae decoction pieces and Gleditsiae Japonicae Spina decoction pieces powders are very similar, only small differences in amount are observable.

Summary

Major differences in the features between Spina Gleditsiae decoction pieces and Gleditsiae Japonicae Spina decoction pieces :

		Spina Gleditsiae decoction pieces	Gleditsiae Japonicae Spina decoction pieces
Macroscopic and micro-morphological features	Appearance	Cylindrical, conic or irregular sections	Flattened cylindrical, flattened conic or irregular sections
	Transverse section	Rounded or sub-rounded	Elliptical or oblong
Microscopic features	Prism of calcium oxalate	Visible or frequently found	Barely found
	Cluster of calcium oxalate	Occasionally or barely found	Visible
	Crystal fibre	Barely found	Occasionally found

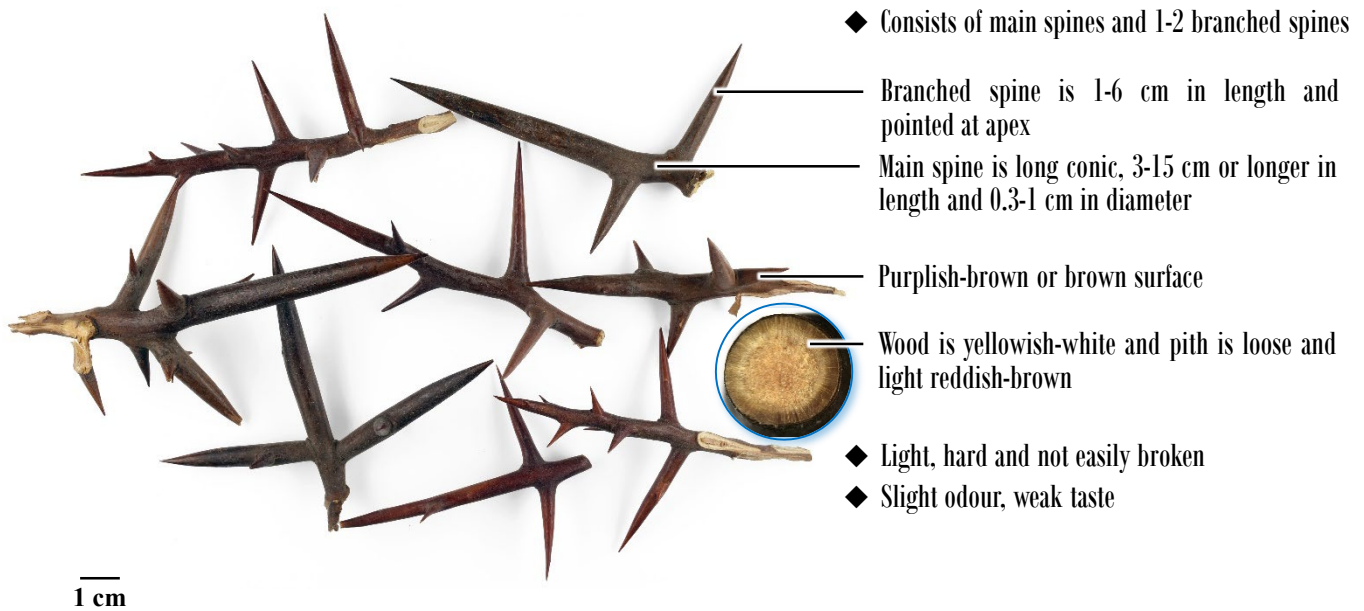
For more information, please refer to the [Hong Kong Chinese Materia Medica Standards website](#):



Gleditsiae Spina - Hong Kong Chinese Materia Medica Standards (Volume 6)

Additional information

Photo of crude Spina Gleditsiae



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