

POLYGONATUM



This product is the dried rhizome of *Polygonatum kingianum* Coll. et Hemsl., *Polygonatum sibiricum* Red. or *Polygonatum cyrtoneura* Hua, all of the Liliaceae family. It is commonly known as "big rhubarb", "chicken-headed rhubarb" or "ginger-shaped rhubarb" according to its shape. It is collected in spring and autumn, the

【 PROPERTIES 】

Rheum officinale is a thick and fleshy nodule, which can be more than 10cm long, 3-6cm wide, and 2-3cm thick. The surface is light yellow to yellow-brown, with segments, wrinkles and root scars. The stem scar on the upper side of the nodule is disc-shaped, with a concave circumference and a protruding middle. It is hard and tough, not easy to break, and the cross section is horny, light yellow to yellow-brown. It has a slight smell, sweet taste, and is sticky when chewed.

Rheum officinale is a nodule-shaped curved column, 3-10cm long, and 0.5-1.5cm in diameter. The nodule is 2-4cm long, slightly conical, and often has branches. The surface is yellow-white or gray-yellow, translucent, with longitudinal wrinkles, and the stem scar is round with a diameter of 5-8mm. *Rheum officinale* is a long nodule block, of varying lengths, and often several block nodules are connected. The surface is grayish yellow or yellowish brown, rough, with a protruding disc-shaped stem scar on the upper side of the nodule, with a diameter of 0.8-1.5 cm. Bitter ones cannot be used for medicinal purposes.

【 IDENTIFICATION 】

(1) Cross-section of this product: The outer wall of the epidermal cells of *Rhizoma Polygonati* is relatively thick. There are many large mucous cells scattered between the parenchyma tissues, containing bundles of calcium oxalate needle crystals. The vascular bundles are scattered, mostly of the peritrichous type. The vascular bundles of *Rhizoma Polygonati Sinensis* and *Rhizoma Polygonati Sinensis* are mostly of the exo-tough type.

(2) Take 1g of the powder of this product, add 20ml of 70% ethanol, heat and reflux for 1 hour, filter, evaporate the filtrate to dryness, add 10ml of water to the residue to dissolve it, add n-butanol and shake to extract twice, 20ml each time, combine the n-butanol solution, evaporate to dryness, add 1ml of methanol to the residue to dissolve it, and use it as the test solution. Take 1g of *Rhizoma Polygonati Sinensis* control medicinal material and prepare the control medicinal material solution in the same way. According to the thin layer chromatography method (General Rule 0502), 10μl of each of the above two solutions were taken and spotted on the same silica gel G thin layer plate, and petroleum acyl (60~90°C)-ethyl acetate-formic acid (5:2:0.1) was used as the developing agent. After development, the plate was taken out, dried, sprayed with 5% vanillin sulfuric acid solution, and heated at 105°C until the spots were clearly colored. In the chromatogram of the test sample, spots of the same color appeared at the corresponding positions of the chromatogram of the control medicinal material.

【 INSPECTION 】

Water content shall not exceed 18.0% (General Rule 0832 Method 4).

Total ash content Take this product, dry it at 80°C for 6 hours, and measure it after crushing. It shall not exceed 40% (General Rule 2302).

Heavy metals and harmful elements are determined according to the lead, cadmium, arsenic, mercury and copper determination method (General Rule 2321 atomic absorption spectrophotometry or inductively coupled plasma mass spectrometry). Lead shall not exceed 5mg/kg; cadmium shall not exceed 1mg/kg; arsenic shall not exceed 2mg/kg; mercury shall not exceed 0.2mg/kg; copper shall not exceed 20mg/kg.

【 EXTRACT 】

According to the hot leaching method under the alcohol-soluble extract determination method (General Rule 2201), dilute ethanol is used as the solvent, and the content shall not be less than 45.0%.

【 CONTENT DETERMINATION 】

Preparation of reference solution Take 33mg of anhydrous glucose reference substance dried to constant weight at 105°C, accurately weigh 9 and place in a 100ml volumetric flask, add water to dissolve and dilute to the scale, shake well, and obtain (each 1ml contains 0.33mg of anhydrous glucose). **Preparation of standard curve** Accurately measure 0 ml, 0.2 ml, 0.3 ml, 0.4 ml, 0.5 ml, and 0.6 ml of the reference solution and place them in 10 ml stoppered graduated test tubes respectively. Add water to 2.0 ml each and shake well. Slowly add 0.2% anthranone-sulfuric acid solution to the scale in an ice-water bath, mix well, cool and place in a water bath for 10 minutes, take out, immediately place in an ice-water bath to cool for 10 minutes, take out, and use the corresponding reagent as blank. According to the UV-Vis spectrophotometry method (General Rule 0401), measure the absorbance at a wavelength of 582 nm. Draw a standard curve with absorbance as the ordinate and concentration as the abscissa. **Determination method** Take about 0.25g of the fine powder of this product dried to constant weight at 60°C, weigh it accurately, put it in a round-bottom flask, add 150ml of 80% ethanol, heat it in a water bath and reflux it for 1 hour, filter it while hot, wash the residue with 80% hot ethanol 3 times, 10ml each time, put the residue and filter paper in a flask, add 150ml of water, heat it in a boiling water bath and reflux it for 1 hour, filter it while hot, wash the residue and flask with hot water 4 times, 10ml each time, combine the filtrate and washing liquid, cool it, transfer it to a 250ml volumetric flask, add water to the scale, shake it well, accurately measure 1ml, put it in a 10ml stoppered dry test tube, and measure the absorbance according to the method under the preparation of the standard curve, starting from "add water to 2.0ml", read the weight (mg) of anhydrous glucose in the test solution from the standard curve, and calculate it.

Calculated on the basis of dry product, the content of Polygonatum sibiricum polysaccharide in terms of anhydrous glucose (C₆H₁₂O₆) shall not be less than 70%.

【 PROPERTIES 】

This product is in irregular thick slices. The surface is brown to black, shiny, and the center is brown to light brown, with small veins visible. The texture is relatively soft. Sweet, with a slight aroma of wine.

【 INSPECTION 】

Water content is the same as the medicinal material, not more than 15.0%.

【 CONTENT DETERMINATION 】

The same medicinal material, the content of Polygonatum sibiricum polysaccharide is calculated as anhydrous glucose (C₆H₁₂O₆), not less than 4.0%.

◆ Phone / WeChat / WhatsApp: +8618633640012

◆ Mail: 277605659@qq.com ◆ Website: www.cn-qihuikang.com

**【 IDENTIFICATION 】 (EXCEPT CROSS SECTION) 【 INSPECTION 】 (TOTAL ASH) 【 EXTRACT 】**

Same as the medicinal material.

【 NATURE AND FLAVOR AND MERIDIANS 】

Sweet, flat. It enters the spleen, lung, and kidney meridians.

【 FUNCTIONS AND INDICATIONS 】

Tonify qi and nourish yin, strengthen the spleen, moisten the lungs, and benefit the kidneys. It is used for spleen and stomach qi deficiency, fatigue, insufficient stomach yin, dry mouth and less food, lung deficiency and dry cough, cough and hemoptysis due to fatigue, insufficient essence and blood, sore waist and knees, premature graying of hair, internal heat and thirst.

【 USAGE AND DOSAGE 】

9~15g.

【 STORAGE 】

Place in a ventilated and dry place to prevent mold and moth.

