

COPTIS CHINENSIS



This product is the dried rhizome of *Coptis chinensis* Franch., *Coptis deltoidea* C. Y. Cheng et Hsiao or *Coptis chinensis* Wall. The above three types are commonly known as "Weilian", "Yalian" and "Yunlian" respectively. Excavate in autumn, remove fibrous roots and sediment, dry and knock out the remaining fibrous roots.

【 PROPERTIES 】

The rhizomes of the yam are mostly gathered in clusters, often curved, shaped like chicken feet, with a single rhizome 3-6cm long and 0.3-0.8cm in diameter. The surface is grayish yellow or yellowish brown, rough, with irregular nodular protrusions, fibrous roots and fibrous root residues. Some internodes have smooth surfaces like stems, commonly known as "bridges". There are many brown scale leaves remaining on the upper part, and there are often residual stems or petioles at the top. It is hard, with irregular cross-sections, orange-red or dark brown in the cortex, bright yellow or orange-yellow in the wood, arranged radially, and some of the pith is hollow. The smell is slight and the taste is extremely bitter. The yam is mostly single-branched, slightly cylindrical, slightly curved, 4-8cm long, 0.5-1cm in diameter, and the "bridge" is longer. There are a few residual stems at the top. The cloud yam is curved and hooked, mostly single-branched, and relatively small.

【 IDENTIFICATION 】

- (1) Cross section of this product: The cork layer of the flavonoids is composed of several rows of cells, with an epidermis outside, which often falls off. The cortex is relatively wide, with stone cells scattered singly or in groups. The pericycle fibers are bundled or accompanied by a few stone cells, all of which are yellow. The vascular bundles are tough outside and arranged in rings. The xylem is yellow, all lignified, and the wood fibers are relatively developed. The pith is composed of thin-walled cells without stone cells. The pith of the flavonoids has stone cells. The cortex, pericycle and pith of the flavonoids have no stone cells.
- (2) Take 0.25g of the powder of this product, add 25ml of methanol, ultrasonically treat for 30 minutes, filter, and take the filtrate as the test solution. Take 0.25g of the reference medicinal material of *Coptis chinensis* and prepare the reference medicinal material solution in the same way. Take the hydrochloric acid slurry alkali reference substance and add methanol to prepare a solution containing 0.5mg per 1ml as the reference substance solution. According to the thin layer chromatography method (General Rule 0502), take 1 of each of the above three solutions and spot them on the same high-efficiency silica gel G thin layer plate, use cyclohexane-ethyl acetate-isopropanol-methanol-water-triethylamine (3:3.5:1:1.5:0.5:1) as the developing agent, place it in a developing cylinder pre-saturated with concentrated ammonia test solution for 20 minutes, develop, take out, dry, and inspect under ultraviolet light (365nm). In the chromatogram of the test sample, at the corresponding position of the chromatogram of the reference medicinal material, more than 4 fluorescent spots of the same color appear; at the corresponding position of the chromatogram of the reference sample, fluorescent spots of the same color appear.

【 INSPECTION 】

The water content shall not exceed 14.0% (General Rule 0832 Method 2).
The total ash content shall not exceed 5.0% (General Rule 2302).

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【 EXTRACT 】

Determine by hot leaching method under the alcohol-soluble extract determination method (General Rule 2201), using dilute ethanol as solvent, not less than 150%.

【 CONTENT DETERMINATION 】

Determine by high performance liquid chromatography (General Rule 0512).

Chromatographic conditions and system suitability test: Octadecylsilane bonded silica gel is used as filler; ethyl 1t-0.05mol/L potassium dihydrogen phosphate solution (50:50) (add 0.4g of sodium dodecyl sulfate to every 100ml, and adjust the pH value to 4.0 with phosphoric acid) is used as mobile phase; the detection wavelength is 345nm, and the number of theoretical plates calculated based on the hydrochloric acid pyrocatechol peak should not be less than 5000.

Preparation of reference solution: Take an appropriate amount of pyrocatechol hydrochloride reference substance, accurately weigh it, and add methanol to make a solution containing 90.5g per 1ml. Preparation of test solution Take about 0.2g of the powder of this product (passed through No. 2 sieve), weigh accurately, place in a stoppered conical flask, accurately add 50ml of a mixed solution of methanol-hydrochloric acid (100:1), stopper, weigh, ultrasonically treat (power 250W, frequency 40kHz) for 30 minutes, cool, weigh again, make up the lost weight with methanol, shake well, filter, accurately measure 2ml of the filtrate, place in a 10ml volumetric flask, add methanol to the scale, shake well, filter, and take the filtrate. Determination method Accurately aspirate 100ml of the reference solution and the test solution, respectively, inject into the liquid chromatograph, and determine. Using the peak area of the hydrochloric acid pyrocatecholamine reference substance as a reference, calculate the contents of pyrocatecholamine, epipyrocatecholamine, coptisine and bampine, respectively, and determine them by the relative retention time of the chromatographic peak of the component to be measured and the chromatographic peak of pyrocatecholamine hydrochloride. The peak positions of pyrimidine, coptisine, palmatine and pyrimidine should be within $\pm 5\%$ of the specified value. The relative retention time is shown in the following table:

COMPONENT TO BE MEASURED (PEAK)	RELATIVE RETENTION TIME
EPICHLORINE	0.71
COPTINE	0.78
PALMATINE	0.91
SMALL PULP BASE	0.91

This product, calculated on a dry basis, contains not less than 5.5% of chloranine (C₂₀H₁₇NO₄), not less than 0.80% of epichloranine (C₂₀H₁₇NO₄), not less than 1.6% of coptisine (C₁₉H₁₃NO₄), and not less than 1.5% of palmatine (C₂₁H₂₁NO₄). Yalian This product, calculated on a dry basis, contains not less than 45% of chloranine (C₂₀H₁₇NO₄) as chloranine hydrochloride (C₂₀H₁₈ClNO₄). Yunlian This product, calculated on a dry basis, contains not less than 7.0% of chloranine (C₂₀H₁₇NO₄) as chloranine hydrochloride (C₂₀H₁₈ClNO₄).

DECOCTION PIECES (WEILIAN)**【 PROCESSING 】**

Coptis slices Remove impurities, moisten thoroughly, cut into thin slices, dry, or crush when used.

【 PROPERTIES 】

This product is irregular thin slices. The outer skin is grayish yellow or yellowish brown, rough, with tiny fibrous roots. The cut surface or broken section is bright yellow or reddish yellow, with radial texture, slight odor, and extremely bitter taste.

【 INSPECTION 】

Water content is the same as the medicinal material, not more than 12.0%.

Total ash is the same as the medicinal material, not more than 3.5%.

【 CONTENT DETERMINATION 】

The same medicinal material, calculated as pyranine hydrochloride, contains pyranine (C₂₀H₁₇NO₄) not less than 5.0%, and the total amount of epipyranine (C₂₀H₁₇NO₄), berberine (C₁₉H₁₃NO₄) and bamipine (C₂₁H₂₁NO₄) not less than 3.3%.

【 IDENTIFICATION】 (EXCEPT CROSS SECTION) 【EXTRACT】

The same as the medicinal material. Wine Coptis Take clean Coptis and stir-fry it according to the wine roasting method (General Rule 0213) until dry. For every 100kg of Coptis, use 12.5kg of yellow wine.

【 PROPERTIES 】

This product is shaped like Coptis tablets, with a darker color. Slightly has a wine aroma.

【 IDENTIFICATION】 【INSPECTION】 【EXTRACT】 【CONTENT DETERMINATION】

Same as Coptis tablets. Jiang Huanglian Take clean Coptis and stir-fry it according to the ginger juice roasting method (General Rule 0213) until dry. For every 100kg of Coptis, use 12.5kg of ginger

【 PROPERTIES 】

This product is shaped like Coptis tablets, with a brown-yellow surface. Has a spicy taste of ginger.

【 IDENTIFICATION】 【INSPECTION】 【EXTRACT】 【CONTENT DETERMINATION】

Same as Coptis tablets. Yu Huanglian Take Evodia rutaecarpa and add appropriate amount of water to decoct, mix the decoction with clean Coptis, wait until the liquid is absorbed, and stir-fry until dry.

For every 100kg of Coptis, use 10kg of Evodia rutaecarpa.

【 PROPERTIES 】

This product is shaped like Coptis tablets, with a brown-yellow surface. It has the spicy aroma of Evodia rutaecarpa.

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【 IDENTIFICATION 】

Take 2g of the powder of this product, add 20ml of chloroform, ultrasonically treat for 30 minutes, filter, treat the residue twice in the same way, combine the filtrate, recover the solvent under reduced pressure to dryness, add 1ml of chloroform to dissolve, and use it as the test solution. Take 0.5g of *Evodia rutaecarpa* reference medicinal material and prepare the reference medicinal material solution in the same way. Take the limonin reference substance and add chloroform to prepare a solution containing 1mg per 1ml as the reference substance solution. According to the thin layer chromatography method (general rule 0502), the test solution 6R, the control medicinal material solution 3Q and the reference substance solution 2R were taken and spotted on the same high-efficiency silica gel G thin layer plate, and petroleum acyl (60-90°C)-chloroform-acetone-methanol-diethylamine (5:2:2:1; 0.2) was used as the developing agent. Pre-saturation was performed for 30 minutes, and the plate was developed. The plate was taken out, dried, and sprayed with 2% vanillin sulfuric acid solution. The plate was heated at 105°C until the spots were clearly colored. In the chromatogram of the test sample, the main spot of the same color appeared at the corresponding position of the chromatogram of the control medicinal material; the spot of the same color appeared at the corresponding position of the chromatogram of the reference substance.

【 INSPECTION 】 【 EXTRACT 】 【 CONTENT DETERMINATION 】

Same as Huanglian tablets.

【 NATURE AND FLAVOR AND MERIDIANS 】

Bitter, cold. It enters the heart, spleen, stomach, liver, gallbladder, and large intestine meridians.

【 FUNCTIONS AND INDICATIONS 】

Clears heat and dampness, purges fire and detoxifies. Used for damp-heat fullness, vomiting and acid regurgitation, diarrhea, jaundice, high fever and coma, hyperactivity of heart fire, restlessness and insomnia, palpitations, vomiting of abalone due to blood heat, red eyes, toothache, thirst, carbuncle, furuncle; external treatment of eczema, wet sores, and pus in the ear canal. Wine-coptis chinensis is good at clearing the heat of the upper jiao. Used for red eyes and mouth sores. Turmeric and coptis chinensis clear the stomach and stop vomiting. Used for cold and heat, damp heat blocking the middle, fullness and vomiting. *Cornus officinalis* and coptis chinensis soothe the liver and stop vomiting. Used for liver and stomach disharmony, vomiting and acid regurgitation.

【 USAGE AND DOSAGE 】

2~5g. Appropriate amount for external use.

【 STORAGE 】

Place in a ventilated and dry place.

