LICORICE

This product is the dried root and rhizome of Glycyrrhiza uralensis Fisch., Glycyrrhiza inflata Bat. or Glycyrrhiza glabra L. of the Leguminosae family. It is dug up in spring and autumn, the fibrous roots are removed, and the product is dried in the sun.

Licorice root is cylindrical, 25 to 100cm long and 0. 6 to 3. 5cm in diameter. The outer skin varies in tightness. The surface is reddish brown or gray brown, with obvious longitudinal wrinkles, grooves, lenticels and sparse fine root marks. The texture is solid, the cross-section is slightly fibrous, yellow-white, powdery, with obvious cambium rings, radial rays, and some cracks. The rhizome is cylindrical, with bud marks on the surface and pith in the middle of the cross section. Smell, taste
Sweet and special. The roots and rhizomes of Licorice are thick and woody, some are branched, and the outer skin is rough, mostly

【 IDENTIFICATION 】

(1) Cross section of this product: The cork layer is composed of several rows of brown cells. The inner layer of the plug is narrow. The phloem has broad rays, many bends, and often cracks; the fibers are mostly bundled, non-lignified or slightly lignified, and the surrounding parenchyma cells often contain calcium oxalate square crystals; the sieve tube group is often deformed due to compression. The cambium within the bundle is obvious. The xylem rays are 3 to 5 rows of cells wide; there are many vessels with a diameter of about 160 μm; the wood fibers are in bundles, and the surrounding parenchyma cells also contain calcium oxalate square crystals. There is no pith in the center of the root; there is pith in the center of the rhizome. The powder is light brown. The fibers are in bundles, with a diameter of 8 to 14 μm, thick walls, and slight lignification. The surrounding parenchyma cells contain calcium oxalate square crystals to form crystal fibers. Calcium oxalate cubic crystals are common. Marginal pit ducts are larger and reticulated ducts are rare. Cork cells are reddish brown, polygonal, slightly woody.
(2) Take 1g of powder of this product, add 40ml of acetate, heat and reflux for 1 hour, filter, discard the brewing liquid, add 30ml of methanol to the residue, heat and reflux for 1 hour, filter, evaporate the filtrate to dryness, add 40ml of water to the residue to dissolve , extracted with n-butanol three times, 20ml each time, combined the n-butanol liquid, washed three times with water, discarded the water, evaporated the n-butanol liquid to dryness, added 5ml of methanol to the residue to dissolve, and used it as the test solution. Take another 1g of licorice control medicinal material and prepare the reference medicinal material solution in the same way. Then take the glycyrrhizic acid monosaddle salt reference substance, add methanol to make a solution containing 2mg per 1ml, and use it as the reference substance solution. According to the thin layer chromatography (General Chapter 0502) test, absorb 1 to 20 of each of the above three solutions, respectively point on the same silica gel G thin layer plate prepared with 1% sodium hydroxide solution, and use ethyl acetate-formic acid-glacial acetic acid. - Use water (15: 1: 1: 2) as a developing agent, unfold, take out, dry, spray with 10% sulfuric acid ethanol solution, heat at 105°C until the spots become clear, and inspect under ultraviolet light (365nm). In the chromatogram of the test product: the same color of fluorescent spots appears at the position corresponding to the chromatogram of the reference medicinal material; the same orange-yellow fluorescent spot appears at the position corresponding to the chromatogram of the reference substance.

Phone / WeChat / WhatsApp: +8618633640012
Mail: 277605659@qq.com Website: www.cn-qihuikang.com

【EXAMINE】

The moisture content must not exceed 120% (General Rule 0832 Second Method).
The total ash content must not exceed 7.0% (General Chapter 2302).
Acid-insoluble ash shall not exceed 20% (General Chapter 2302).
Heavy metals and harmful elements are measured according to the determination method of lead, cadmium, arsenic, mercury, and copper (General Chapter 2321 Atomic Absorption Spectrophotometry or Inductively Coupled Plasma Mass Spectrometry). Lead must not exceed 5 mg/kg; cadmium must not exceed 1 mg/kg; arsenic must not exceed 1 mg/kg. More than 2 mg/kg; mercury must not exceed 0 2 mg/kg; copper must not exceed 20 mg/kg. Other organochlorine pesticide residues are determined according to the pesticide residue determination method (General Chapter 2341 Determination of Organochlorine Pesticide Residues - First Method). The content of pentachloronitrobenzene shall not exceed 0. lmg/kg.

【CONTENT DETERMINATION】

Determine according to high performance liquid chromatography (General Chapter 0512).
Chromatographic conditions and system suitability test use octadecylsilane bonded silica gel as filler; use acetonitrile as mobile phase A, use 0.05% phosphoric acid solution as mobile phase B, and perform gradient elution as specified in the table below; detect wavelength The number of theoretical plates for 237nmo should not be less than 5,000 based on licorice peak.

TIME (MINUTES)	MOBILE PHASE A (%)	MOBILE PHASE B (%)
0~8	19	81
8~35	19→50	81→50
35~36	50→100	50→0
36~40	100→19	0→81

Preparation of reference solution Take appropriate amount of glycyrrhizic acid reference and glycyrrhizic acid methyl ester reference, weigh them accurately, add 70% ethanol to make solutions containing 20 mg of glycyrrhizic acid and 0.2 mg of glycyrrhizic acid methyl ester per 1 ml, and obtain (weight of glycyrrhizic acid = weight of glycyrrhizic acid methyl ester / 1.0207). Preparation of test solution Take about 0.2 g of this product powder (passed through No. 3 sieve), weigh it accurately, put it in a stoppered conical bottle, accurately add 100 ml of 70% ethanol, plug it tightly, weigh it, ultrasonically treat it (power 250W, frequency 40kHz) for 30 minutes, let it cool, weigh it again, make up the lost weight with 70% ethanol, shake it well, filter it, and take the filtrate to obtain it.
Determination method Accurately aspirate 10 ml of reference solution and test solution respectively, inject them into liquid chromatograph, and determine them to obtain it.
Calculated on the basis of dry product, this product contains not less than 0.50% licorice ($C_{21}H_{22}O_{16}$) and not less than 2.0% glycyrrhizic acid ($C_{42}H_{62}O_{16}$).

DECOCTION PIECES

【PROCESSING】

Licorice slices Remove impurities, wash, moisten, cut into thick slices, and dry.

【PROPERTIES】

This product is in the form of thick slices of quasi-circular or oval shape. The outer skin is reddish brown or grayish brown with longitudinal wrinkles. The cut surface is slightly fibrous, the center is yellowish white, with obvious radiating texture and cambium ring. The texture is solid and powdery. The smell is slight, and the taste is sweet and special.

【INSPECTION】

Total ash Same as medicinal materials, not more than 50%.

【CONTENT DETERMINATION】

Same as medicinal materials, containing not less than 0.45% liquiritin (C21 H22 O9), and not less than 1.8% glycyrrhizic acid (C42H62O16).

【IDENTIFICATION】 (EXCEPT CROSS SECTION) 【INSPECTION】 (WATER, HEAVY METALS AND HARMFUL ELEMENTS)

Same as medicinal materials.

【NATURE AND FLAVOR AND MERIDIANS】

Sweet, flat. Enter the heart, lung, spleen, and stomach meridians.

【NATURE AND FLAVOR AND MERIDIANS】

Tonify the spleen and replenish qi, clear away heat and detoxify, eliminate phlegm and relieve cough, relieve pain, and harmonize various medicines. Used for spleen and stomach weakness, fatigue, palpitations and shortness of breath, cough and sputum, abdominal and limb cramps and pain, carbuncle, sore, and relieve drug toxicity and potency.

【USAGE AND DOSAGE】

2~10g.

【NOTE】

It is not suitable to be used with seaweed, Beijing euphorbia, red euphorbia, gansui, and genkwa.

【STORAGE】

Place in a ventilated and dry place to prevent moth.

Phone / WeChat / WhatsApp: +8618633640012
Mail: 277605659@qq.com Website: www.cn-qihuikang.com