

论文

萝芙木的生药学研究(第一报:根和根状茎)

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摘要:

本文简单地介绍了过去数年内国外方面对于几种萝芙木属Rauwolfia植物生药的生药学研究结果,然后就国产萝芙木R.verticillata(Lour.)Baill.的植物形态、分布、根和根状茎的形状、组织构造及粉末特征,分别作了较全面而详细的描述,以备今后鉴定生药原料时的参考,并附有说明插图14幅。根据本研究的结果,发现本种根与印度蛇木根在组织上有种种差异(参照前表1)。此外,本文并报告芙木根的水分、灰分、酸不溶性灰分及全植物硷含量的测定结果,荧光试验的结果,以及几种植物硷反应的试验。

关键词:

A PHARMACOGNOSTICAL STUDY OF CHINESE RAUWOLFIA,PART I .ROOT AND RHIZOME

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Abstract:

(1). Rauwolfia verticillata (Lour.) Baill. (family Apocyanaceae) is an erect evergreen shrub growing wild in Kwangtung, Yunnan, and the islands of Taiwan and Hainan. An alkaloid, named Rauwolfia A (C₂₅H₂₈N₂O₂) was isolated recently from root and stem by Chao (赵承祜) and proved to possess sedative and hypo- tensive activity. 2). The macroscopical, microscopical and sensory characters of the root and of rhizome were studied. The principal differences in microscopic structure between roots of R. verticillata and R. serpentina, compared in a table, were also presented. 3). The root is cylindrical, more or less branched, curved or slightly torturous slowly tapering toward the end. Externally, it shows a grayish-brown cork and many irregular longitudinal ridges and furrows. The fracture of thin pieces is short and irregular, that of thick pieces is irregular and splintery; the freshly fractured surface exhibits a grayish-brown cork, white to dark brown phelloderm and phloem which are easily peeled off, and a pale yellow central core of hard and compact wood, occupies about 3/4 to 4/5 part of the root in diameter, it possesses 1 to 4 growth rings and numerous, almost straight-arranged medullary rays. Odour indistinct, and taste bitter. 4). The important microscopical features of the root: The transverse section shows a stratified cork consisting of 3 to 16 alternating tangential bands of larger and smaller cork cells, both of them possess thin, lignified wall. Phelloderm consists up to about 10 layers of tangentially elongated parenchymatous cells, most of which contain starch grains and calcium oxalate crystals. Secondary phloem shows starch- and crystal-bearing phloem parenchyma and sieve tubes traversed by phloem rays, the latter being of mostly from 1 to 2 cells, occasionally up to 4 cells in width containing abundant starch grains and a few calcium oxalate crystals and from 7 to 16 cells high in the tangential-longitudinal sections; sclerenchymatous fibres which measure 330-670μlong and 13-30μ wide and stone cells which measure up to 70 μ in diameter are scantily scattered singly or in small groups of 2 in the outer part of the secondary phloem and the inner part of phelloderm of the older thick parts of the root, both possess pitted lignified wall. Wood wedges consist of wood fibres, wood parenchyma cells, vessels, tracheids and shorter rays, the cell walls of all these elements are lignified; vessel elements varied greatly in shape and size, from isodiametric or irregular circular, oval, spindle shape, polygonal to cylindrical, up to 760 μ long and 70 μ wide, some of the vessels exhibit tylosis or gummy lignin in the cavity; tracheids measuring up to 290 μ long, and 35μ wide with moderately thick end and pitted walls; wood fibres up to 1520μ long and 30 μ wide possess tapered to abruptly tapered ends, and rarely bifurcate, walls with simple and oblique pits: 5). The chief microscopical characters of the rhizome are as follows: the cork shows a similar stratification to that of the root. Inside is a outer narrow zone of phelloderm followed by an inner broad zone of starch- and crystal-bearing parenchyma in which numerous isodiametric or irregular, elongated stone cells, sclerenchymatous fibres, and latex cells are scattered; stone cells with lignified wall are arranged singly or in groups of 2 to 3, and measure up to 270 μ long, and 115μ wide; sclerenchymatous fibres with tapered ends and lignified wall are more longer than that of the root and measure up to 860 μ long, 60 μ wide; pericycle, usually broad, contains a few

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thick, non-lignified pericyclic fibres which are scattered singly and measure up to 2850 μ long, 20 μ wide; the fibres show taping and often lobed ends, with alternate, constricted and enlarged portions having thin wall and broad lumen which measure up to 30 μ wide and concentrically zoned in cross, section. The bundles are of bicollateral type, constituted of external phloem, xylem, and internal phloem; vessels are shorter than that of the root, up to 690 μ long, 50 μ wide; wood fibres are longer than that of the root, up to 1610 μ long, 30 μ wide; internal phloem forms a ring at the margin of the pith containing starch grains, calcium oxalate crystals and a few sclerenchymatous fibres which are similar to that of the cortex; numerous irregular amorphous masses of brownish colour also occur in the root and rhizome. 6). The starch grains are mostly simple, with a few 2 to 3-compound grains, the individual grains are spheroidal, ovoid, elliptical, and possess a centric point or cliff hilium, measuring up to 17 μ in diameter; no distinct polarization and stratifications are visible. 7). The monoclinic prisms, tabular crystals, clusters, and a number of twin crystals of calcium oxalate were found in the root and the rhizome measuring up to 43 μ long; they are often arranged in longitudinal rows.

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