

天胡荽的生药鉴定

广西柳州药材站(545001)

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摘要 报道了天胡荽的植物来源、性状、显微组织特征及理化鉴别。为天胡荽的鉴定和药材标准的修订提供依据。

关键词 天胡荽 破铜钱 生药学

天胡荽为民间常用药,又名满天星、天星草等^[1,2]始载于《千金要方·食治》,其来源为伞形科天胡荽属植物天胡荽*Hydrocotyle sibthorpioides* Lam.及破铜钱*Hydrocotyle sibthorpioides* Lam.var.*batrachium* (Hance) Hand.-Mazz.的全草^[3]。该药性寒,味苦、辛,具清热解毒、利湿退黄、止咳、消肿散结的功能。用于湿热黄疸、咳嗽、百日咳、咽喉肿痛、目赤云翳、淋病、湿疹、带状疱疹、疮疡肿毒等症^[3]。天胡荽已收入1990年版《广西中药材标准》,但对其显微特征、理化鉴别均未收载,亦未有系统报道,本文对该品种进行了生药鉴定研究,为天胡荽的鉴定和药材标准的修订提供依据。

1 材料

样品由黄成勇于1993-05采于柳州市郊草地,并鉴定为伞形科天胡荽属植物天胡荽*Hydrocotyle sibthorpioides* Lam.及破铜钱*Hydrocotyle sibthorpioides* Lam.var.*batrachium* (Hance) Hand.-Mazz.的全草。

2 结果

2.1 药材性状

天胡荽:茎呈细长圆柱形,直径0.2~0.7mm。黄绿色或黄褐色。节明显,节上有须根或根痕。叶互生,多皱缩,展平后呈圆形或肾圆形,长5~15mm。宽7~17mm,基部心形,叶缘5~7浅裂,并有钝齿。上表面黄绿色或黄褐色、下表面色较浅。叶柄长7~45mm,无毛或顶端有毛。有的带花,伞形花序与叶对生,有花5~18朵,细小。双悬果略呈心形,两侧压扁(图1, A)。气微,味淡。

破铜钱:叶片长10~20mm,宽13~15mm,3~5深裂几达基部,裂片均成楔形(图1, B)。

2.2 显微特征

2.2.1 天胡荽: a) 叶表面观:上、下表皮细胞均为不规则形,垂周壁呈波状弯曲,下表皮细胞弯曲更为明显,上表皮细胞长39~67 μ m,下表皮细胞长41~79 μ m,上、下表皮均有气

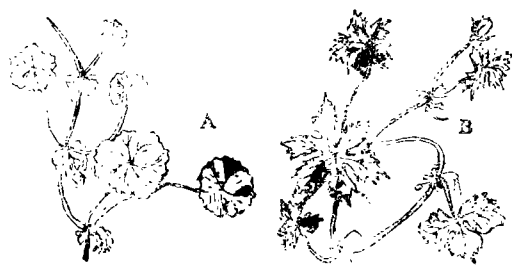


图1 药材外形

A-天胡荽 B-破铜钱

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孔，长圆形或类圆形，平轴式或直轴式。下表面叶脉处偶见多细胞非腺毛形状与破铜钱相似（图2）。b）叶柄横切面：表皮细胞1列，外被角质层，表皮下为1列厚角组织。皮层薄壁细胞5~7列，外韧形维管束3个，每一维管束外缘均有1个直径约17 μ m的分泌道，由6个分泌细胞组成环。木部导管3~6个，多径向排列，中央髓部为薄壁组织、薄壁细胞中分布有大量淀粉粒，偶见草酸钙簇晶，直径约14~16 μ m（图3）。c）茎横切面：表皮细胞1列，外被角质层，表皮下为1列较整齐的厚角组织，皮层薄壁细胞5~9列，外韧形维管束5~6个，排列成环，形成层不明显，每一维管束外缘均有一直径约为16 μ m的分泌道，由6个扁平的分泌细胞组成环。木部导管3~6个，微木化，多为径向排列，中央髓部为薄壁组织。薄壁细胞内分布有大量淀粉粒，偶见草酸钙簇晶直径14~60 μ m（图4）。

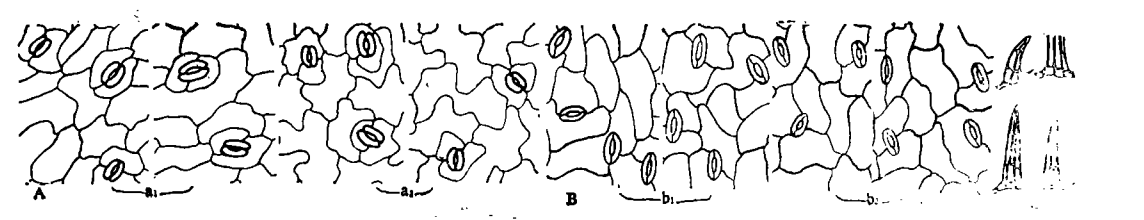


图2 叶表面观

A-天胡荽 B-破铜钱

a₁-上表皮细胞及气孔 a₂-下表皮细胞及气孔 b₁-上表皮 b₂-下表皮 c-下表皮非腺毛

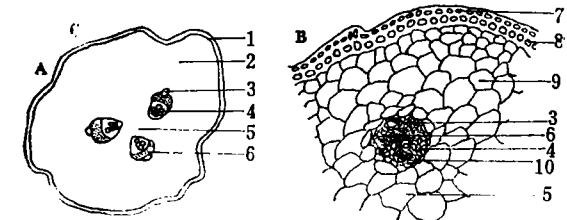


图3 天胡荽叶柄横切面

A-简图 B-详图

1-表皮 2-皮层 3-分泌道 4-木质部 5-髓部
6-韧皮部 7-表皮细胞 8-厚角组织 9-皮层薄壁细胞
10-导管

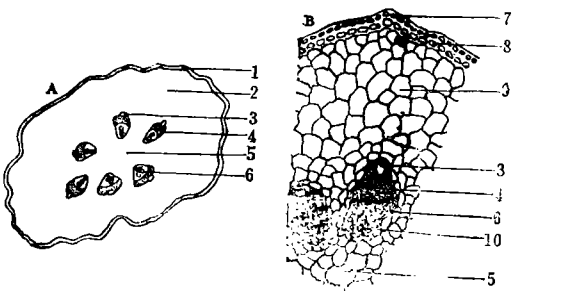


图4 天胡荽茎横切面

A-简图 B-详图

1-表皮 2-皮层 3-分泌道 4-韧皮部 5-髓部
6-木质部 7-表皮细胞 8-厚角组织 9-薄壁细胞
10-导管

2.2 破铜钱：与天胡荽主要区别：叶下表面均可见多细胞非腺毛，茎横切面维管束多为7个。叶柄及茎横切面薄壁细胞中含棕色块，导管多成群排列（图5~7）。



图5 破铜钱叶表面观

1-上表皮 2-下表皮非腺毛 3-下表皮

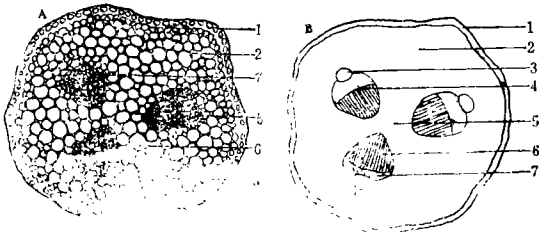


图6 破铜钱叶柄横切面

A-详图 B-简图

1-表皮 2-皮层 3-分泌道 4-形成层 5-髓部
6-木质部 7-韧皮部

2.3 理化鉴别：取药材粉末3g，加70%乙

醇30ml。回流30min过滤,滤液供以下实验。

2.3.1 取滤液1ml,加镁粉少许,再滴加浓盐酸4~5滴,水浴加热3~5min,溶液显棕色或红棕色。

2.3.2 取滤液1滴滴在滤纸上,喷洒1%三氯化铝乙醇液,挥干后,于365nm紫外灯下观察显鲜黄色荧光。

2.3.3 取滤液1ml,加3%碳酸钠溶液1ml,水浴加热3min,冷却后加新配制的重氮化试剂1~2滴,溶液呈红色或红棕色。

2.3.4 取滤液1滴滴在滤纸上,在365nm紫外灯下观察,呈浅兰色荧光,加10%氢氧化钠溶液1滴,挥干后,显黄色荧光。

3 讨论

关于天胡荽与破铜钱的区别,在两者叶的大小上存在有两种不同的看法,一种是认为天胡荽的叶大于破铜钱^[4,5]的叶,另一种看法相反^[6],从我们所收集的药材来看,情况与后一种看法相同,即天胡荽的叶小于破铜钱的叶,

致谢:部分图由柳州地区药检所黄桂华同志协助完成。

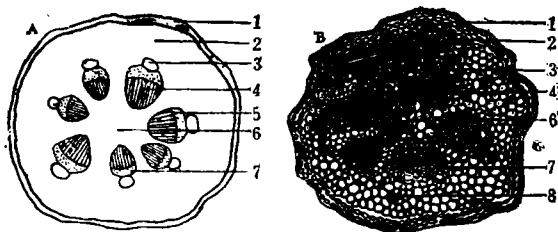


图7 破铜钱茎横切面

A-简图 B-详图

1-表皮 2-皮层 3-分泌道 4-木质部 5-形成层
6-髓部 7-韧皮部 8-棕色块

参 考 文 献

- 1 江苏新医学院编.中药大辞典.上册.上海:上海人民出版社,1977.328
- 2 江苏省植物研究所,等.新华本草纲要.第一册.上海:上海科学技术出版社,1988.364
- 3 广西壮族自治区卫生厅编.广西中药材标准.南宁:广西科学技术出版社,1990.27、151
- 4 福建省医药研究所.福建药物志.第一册.福州:福建人民出版社,1979.367
- 5 刘守炉.中国植物志.第五十五卷.第一分册.北京:科学出版社,1979.17
- 6 四川中药志协作编写组.四川中药志.第一卷.成都:四川人民出版社,1979.303

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参 考 文 献

- 1 张晓岗,等.浙江医科大学学报,1989,(6),224
- 2 高国栋,等.湖北医药,1985,7(1):3
- 3 Ohkawa H, et al. Anal Bilche, 1979, 95: 351
- 4 上海市医学化学研究所主编.临床生化检验.上册,上海:上海科学技术出版社,1979,315、337
- 5 叶耀征,等.浙江医学,1980,2(5):227
- 6 李广生,等主编.心脏病理学.上海:上海科技出版社,1985.61
- 7 孙瑞元.定量药理学.北京:人民卫生出版社,1987.84
- 8 Kondo T, et al. Cardivasc Res, 1987, 21: 248
- 9 Noyer M, et al. J Mol Cell Cardiol, 1983, 15(Suppl I): 215
- 10 于严,等.中国病理生理学杂志,1991,7(6):566
- 11 刘德强,等.中国药理学报,1991,12(3):253
- 12 贾之慎.中国茶叶,1990,12(4):17

(1994-04-88收稿)

Effect of Emodin (EMD) on free intracellular Ca^{2+} ($[\text{Ca}^{2+}]_i$) in peritoneal macrophages of mice was measured with Ca^{2+} sensitive fluorescent indicator Fura-2/Am quantitatively. Results showed that in the resting, $[\text{Ca}^{2+}]_i$ level in the peritoneal macrophages was $198.56 \pm 44.82 \text{ nmol/L}$ ($n=11$) in Ca^{2+} free Hank's solution. After adding 0.75, 1.75 and 2.75 mmol/L CaCl_2 to macrophages suspension sequentially, the free $[\text{Ca}^{2+}]_i$ levels were obviously higher as compared with that of the resting level ($P < 0.01$). When the macrophages were pretreated with adequate doses of EMD for 10 min, in the resting or using the above doses of CaCl_2 , the $[\text{Ca}^{2+}]_i$ was significantly increased as compared with the control groups ($P < 0.01$). The present investigation indicated that EMD can not only promote the release of intracellular Ca^{2+} but also the influx of extracellular Ca^{2+} . Furthermore the effect of EMD on $[\text{Ca}^{2+}]_i$ is dose dependent.

(Original article on page 199)

Studies on Resource Utilization of Chinese Drug

Dwarf Lilyturf (*Ophiopogon japonicus*)

Yu Boyang, Xu Guojun

"Maidong" (*Radix Ophiopogonis*), is a traditional Chinese drug. Chinese Pharmacopoeia (1990) recorded that the botanical origin of "Maidong" is *Ophiopogon japonicus* (L. f.) Ker-Gawl. (Liliaceae). A recent survey of drug resources in Zhejiang, Sichuan, Hubei, Hunan, Yunnan, Guizhou, Jiangsu, Anhui and Fujian Provinces showed that plants under the general name "Maidong" involve 26 species and varieties from Gen. *Ophiopogon* to Gen. *Liriope*. Among these, 16 species and varieties are used as "Maidong" in commerce, the most popular being *O. japonicus*, *L. spicata* var. *prolifera* and *L. muscari*. The steroid saponins and homeisoflavonoids contained in the tuberous roots of 16 species and varieties mentioned above were compared on the basis of HPTLC with 45 steroid saponins and 5 homeisoflavonoids as authentic samples. The results showed that the plants belonging to Gen. *Ophiopogon* contain either steroid saponins composed of ruscogenin or diosgenin, or homeisoflavonoids; the plants belonging to Gen. *Liriope* contain only steroid saponins composed of 25(S)-ruscogenin or yamogenin. It is easy to identify the varied species and varieties on TLC. The polysaccharide in the tuberous roots of the 16 species and varieties was determined by visible spectrophotometry. Results indicated that the polysaccharide content in varied species is very different, and is also dependent on locations, cultivated years and the grade of crude drug.

(Original article on page 205)

Pharmacognostical Identification of Lawn Pennywort

(*Hydrocotyle sibthorpioides*)

Huang Chengyong, Luo Zeyun, et al

The botanical Origin, macroscopical and microscopical characteristics and physical chemical tests for the identification of Tianhusui (*Hydrocotyle sibthorpioides* Lam.) and Potongqian (*H. sibthorpioides* Lam. var. *batrachium* (Hance) Hand-Mazz.) were reported to provide a basis for the identification of the drug and revision of the drug standard.

(Original article on page 211)