

Reflecting the Steps of Modernization of Chinese Materia Medica from the Papers in *Chinese Traditional and Herbal Drugs* in 2009

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Abstract: The papers in the journal of *Chinese Traditional and Herbal Drugs* in Vol. 40, 2009 are briefly reviewed in the categories of chemical constituents, preparations and technologies, analysis and quality control, pharmacological and clinical studies, reviews, and finally healthy principles. Some comments, especially for hot topics have been personally provided.

Key words: Chinese herbal medicines; new compounds; extraction technology; quality control; HPLC fingerprint

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On the celebration of 40th anniversary of *Chinese Traditional and Herbal Drugs* (CTHD) ranked the top 15 of national journals and top one in the medical area during the 60 years since 1949, the most influential journal was awarded to the CTHD, originally named *Zhongcaoyao*, by National Media and Publication Agency. Prof. CHEN Chang-qing, the executive Editor-in-chief, was awarded the title of the most influential media personage during last 60 years in China.

During last 40 years, CTHD has been contributing significantly to serve scientists and readers in the herbal medicine related areas and playing a leading role for the modernization of Chinese materia medica (CMM). There are around 600 papers including chemical constituents, preparations and quality control, pharmacological and clinical studies, crude drugs and resources, reviews, forum on modernization of Chinese materia medica, and monographs published yearly, in which most are original full paper and short report. The papers on CTHD during 2008 had been highlighted and published in the initial issue of this journal, *Chinese Herbal Medicines* (CHM).

In 2009, there were 635 papers published on CTHD distributed in the columns of chemical constituents (137), preparations and quality (140), pharmacological and clinical studies (131), crude drugs and resources (123), reviews (81), special column (6), monograph (9), and the modernization of Chinese

materia medica (8). In this paper some representative articles will be reviewed in the following aspects.

Chemical constituents

There were 137 papers published on chemical constituents in 2009. Among them 28 new compounds including iridoid, flavonoid, saponin, alkaloid, dianthrone, coumarin, and triterpene etc, were characterized. Their structures and source materials were illustrated in Fig. 1.

Studies on chemical constituents or effective compounds from compound CMM with two and more herbal ingredients are thought to be more practicable way and close to the nature of CMM to treat diseases. It's well known that each herb or ingredient may contain many constituents and so-called a "Compound" composed of many herbs, which can be called a library of components. Also all components, especially containing phenol, ester bond, glycoside, and other labile group, may experience the structural change, such as hydrolysis, oxidation, condensation, transformation, and decomposition etc. during processing or making decoction. So, the complexity and difficulty to study the components of Compound Medicine is understandable. Sun *et al* (No. 3: 360) investigated the chemical constituents in Yizhi Fufang Tang composed of *Polygonum multiflorum* Thunb., Red ginseng (*Panax ginseng* C. A. Mey), *Epimedium brevicornum* Maxim., and *Borneolum syntheticum*, used for the prevention and

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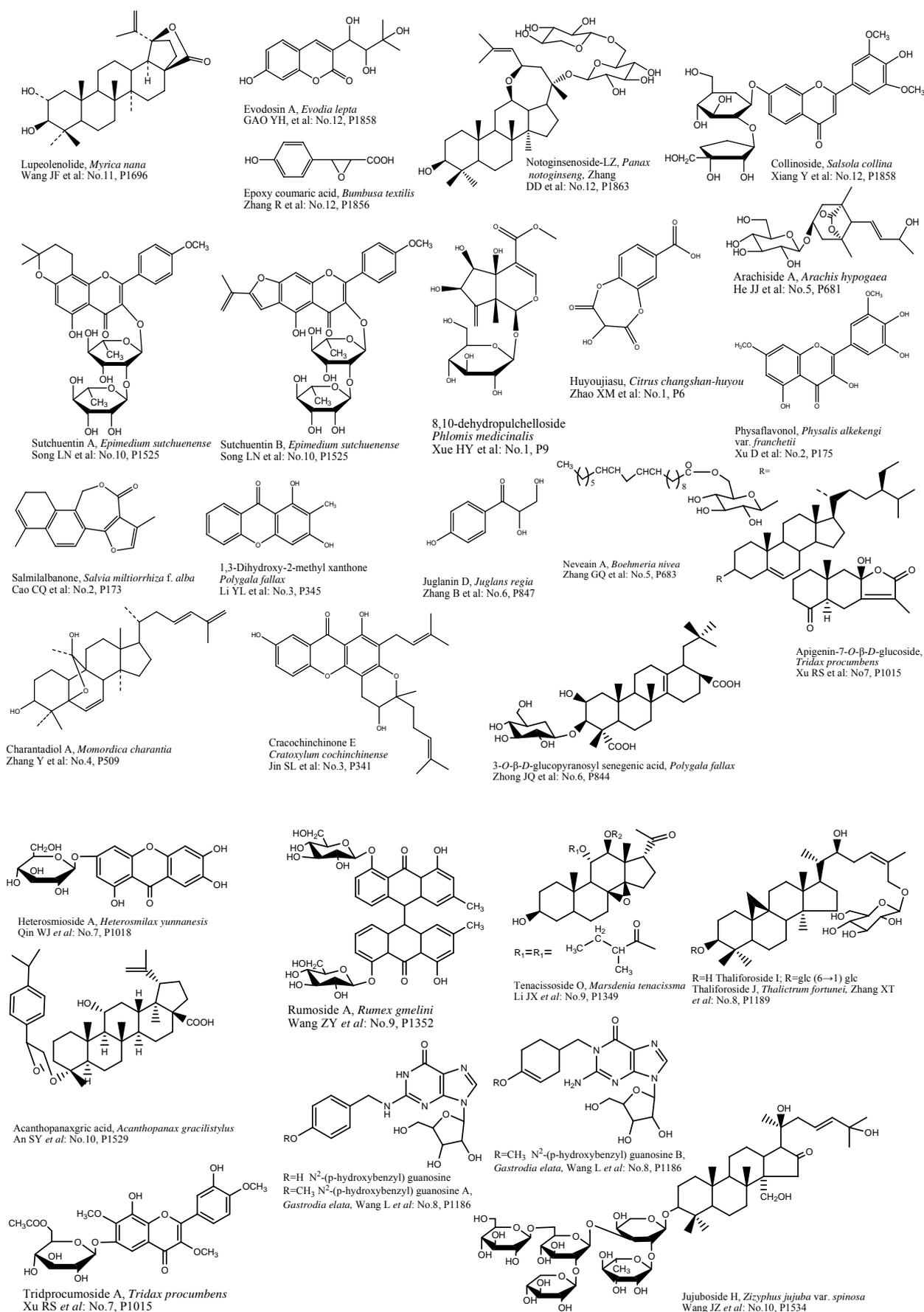


Fig. 1 New compounds reported on CTHD in 2009

treatment of Alzheimer's disease. The mixed materials were extracted with boiling water for three times, two hours for each time. The combined extract was isolated through various column chromatographies. Nine compounds were isolated and characterized as 20(*S*)-ginseng saponin Rg₃, 20(*R*)-ginseng saponin Rg₃, 20(*S*)-ginseng saponin Rh₁, 20(*S*)-ginseng saponin Rh₂, 3-methyl emodin-8-*O*-β-*D*-glucoside, emodin-8-*O*-β-*D*-glucoside, icraiin, icariside I, and *p*-methoxycinnamic aldehyde. All these compounds were isolated in their original form in corresponding herbs.

Preparations and technologies

Preparations

Traditionally Chinese material medica, specifically derived from plants and animals, was used by clinician or in pharmaceutical industry in the form of *Yinpian*, which means all crude drugs before entering pharmacy or pharmaceutical factory to be used as ingredient to make patent or registered medicines have to be properly processed by following particular processing technology. Mostly these technologies include cleaning to remove dust and nonmedicinal part, slicing to proper size or thickness, treated with honey, salt, alcohol, and other materials based on the specific requirement or clinical purpose. A new form called *Peifang Keli* (single extract granule for prescription), which means single herbal extract from *Yinpian* but used as *Yinpian* by pharmacist. The most significant feature is that the amount of *Peifang Keli* is just 5%–20% of original *Yinpian* based on the nature of individual material and easy to be used by dissolving it with hot water. Although the efficacy of this type of medicinal material has not been clearly proved from more examples because of the difference between individual-decoction and co-decoction, but experimental use of *Peifang Keli* in some registered pharmacies has been permitted by national government to be used. As one of examples, the processing technology and quality standard of *Belamcanda chinensis* (L.) DC. has been extensively investigated (Tian *et al.* No. 7: 1073).

Danshen (*Salvia miltiorrhiza* Bunge) is one of the most popular herbs and compound preparations for cardiovascular diseases, Compound Danshen Tablets and Compound Danshen Dripping Pills using *Danshen* as one of three ingredients are two representative preparations

clinically used. In order to improve the quality and bioavailability of Danshen preparations, Li *et al.* (No. 4: 544) investigated the preparing technique to make Compound Danshen Sustained-release Capsula by multiparticulate time-controlled release technology. The result shows that the multi-particulate time-controlled release technology made it possible that the active components with significantly different physico-chemical properties in sustained-release form of traditional Chinese compound preparations could get to release synchronously while sustained-releasing. Qiyeshenan Dispersible Tablets made from the total saponins of *P. notoginseng* leaves used for the treatment of insomnia and palpitation caused by insufficient heart energy and stagnation of the heart-blood, a modern preparation form with advantages of both tablet and liquid, was reported in the specific column (Huang *et al.* No.10: a1) including HPLC analysis (Dai *et al.* No.10: a2), solubility test (Liu *et al.* No.10: a4), clinical observation of 86 cases with tension headache (Yang. No.10: a6), clinical effect for generalized anxiety disorder (Zhou. No.10: a7), and its effective observation for post-stroke depression (Wang and Fang. No.10: a9). Double layers sustained-release tablet represented by Guizhi Fuling Double-layers Sustained-release Tablets (Liao *et al.* No.4: 553) and nanoparticles lyophilized powder represented by Schizonepetolide Nanoparticles Lyophilized Powder (Zhang *et al.* No.4: 548) have also been reported.

Technologies

Extraction of active components from medicinal material is the first step for any kind of research, such as chemical constituent, pharmacology, analysis, and quality control, etc. and for preparation to make a final herbal product. Besides the first concern to get more effective components and fewer impurities, cost effectively (time, energy, solvent, equipment), environmental friendly, and sustainable use are also very important. Water has almost all above advantages but less solubility, although many kinds of compounds can be dissolved by boiling through the interaction of molecules within different polar and solubility. To use water as solvent, orthogonal test was designed for the extraction of *Millettia nitida* Benth. var. *hirsutissima* Z. Wei. Result shows that extracting three times, 3 h for each time, and eight times of water is the best combination based on the yield of total extract, total flavonoid, and formononetin, which means totally 9 h and

24 times of solvent are required (Zhong *et al.* No.7: 1066). Another two papers reported the extraction of *Lindera aggregata* (Sims) Kosterm. (Chen *et al.* No.7: 1079) and *Selaginella tamariscina* (Beauv.) Spring (Feng *et al.* No.6: 893) by orthogonal test with refluxing 50%–95% ethanol in order to optimize the combination of several factors. The prediction to choose ethanol as solvent and reflux was thought to be the solubility issue that most of components contained in these two herbs are better to be dissolved in ethanol. The result shows that the best combination is 75% ethanol, 10 times solvent, and refluxing 1.5 h (without consideration of extraction times) for *L. aggregate* and 95% ethanol, 10 times solvent, extracting two times, and 2 h for each time for *S. tamariscina*.

Extraction of alkaloids from *Nelumbo nucifera* Gaertn. leaves by multi-stage countercurrent extraction was reported (Huang *et al.* No.8: 1229). As a group connected tanks, each tank is full filled with material and the fresh solvent enters the tank from beginning one to final one. Once the balance is achieved, every 25 min there will be extractive solution equivalent to one tank obtained and the residue in first tank will be replaced by fresh material. By doing so, 25 min, 50 times of solvent under certain temperature is required to finish the extraction of one tank. Pressure extraction through heating has been successfully tested for the extraction of total isoflavones from red clover (*Trifolium pretense* L.). By comparing with other techniques, the time can be shortened to 10 min and yield of total extract is two times higher than reflux (Yang *et al.* No.9: 1406). For the same object, the technique to remove polycyclic aromatic hydrocarbons from *T. pretense* extract by solvent 6 was successfully achieved (Xu *et al.* No.8: 1235), which has been thought to be a critical issue for health product made from total isoflavones of *T. pretense*. Cellulose enzyme assisted extraction of aconitine and total alkaloid from *Aconitum carmichaeli* Debx. had been tested and the result shows that the best conditions are 45 °C, pH 4.5, enzyme 8 mg/g, and enzyme hydrolysis 5 h. Under this condition, the yield of aconitine and total alkaloid are 0.002447% and 0.244410%, which is higher than ethanol-reflux of 0.001869% and 0.200720% (Li *et al.* No.11: P1735).

Comparing with above extraction techniques, smashing tissue extraction (STE) also called flash extraction because its fastness countable in seconds to

minutes to finish an extraction has been showing amazing advantage. Liu *et al.* (No.7: 1071) used STE to extract the total saponins from *Gynostemma pentaphyllum* (Thunb.) Makino by comparing with ultrasonic extraction (UE) and fluxing extraction (FE). The result shows that the yields of crude extracts and the contents of total saponins in the extract are 9.45% and 21.0% (UE), 11.50% and 31.2% (FE), and 12.10% and 32.7% (STE), respectively. The time spent were 90 min at 60 °C (UE), 360 min at 100 °C (FE), and 4 min at room temperature (STE). The saving of energy and time are very significant except for the safety without the risk of decomposition of heat sensitive compounds. Another report on using STE to prepare analyzing sample for the analysis of LC-MS was from She-minority medicine, *Glochidion puberum* (L.) Hutch. (Huang *et al.* No.6: 872). *G. puberum* (40 g) was STE extracted with 75% ethanol (200 mL) for total 5 min in five times. Filtration was treated with chloroform and silica gel column chromatography to prepare samples for analysis of GC-MS and LC-MS. In the GC-MS, total more than 100 peaks had been detected and 35 of them were identified. In the LC-MS analysis, nine well-separated peaks were detected, which looks like the pattern of gallogannin.

Analysis and quality control

As a critical issue to keep identical quality of crude drugs (medicinal materials) and preparations (registered medicines or patent medicines) and so consistent clinical efficacy, the development and validation of analyzing method for quality control is one of four major areas published in CTHD. TLC is still playing an important role because its simplicity and sensitivity, especially for the qualitative detection of known herb or ingredient in compound preparation. But HPLC equipped with different detectors has been playing more and more irreplaceable role by its accuracy, sensitivity, specificity, and universality. The combination of TLC and HPLC has been used for the quality control of Yiganle Granula composed of *Paederia scandens* (Lour.) Merr, *Polygonum cuspidatum* Sieb. et Zucc, *Verbena officinalis* L, and *Mahonia bealei* (Fort.) Carr. etc for liver disease (Cai *et al.* No.5: 739) and Xiaochuanning Tablet composed of *Ephedra sinica* Stapf, *Pseudostellaria heterophylla* (Miq.) Pax et Hoffm, *Schisandra chinensis* (Turcz.) Baill, *Polygala tenuifolia* Willd, *Pinellia pedatisecta* Schott, *Datura metel* L, and

Glycyrrhiza uralensis Fisch etc for asthma (Yu *et al.* No.5: P736).

Fingerprinting spectral analysis represented by HPLC has been used as major tool for the quality assurance of crude drugs and compound preparations. The following four representative registered herbal preparations have been investigated with HPLC fingerprinting spectral analysis for the purpose of quality control: Compound Wurenchun Capsula (Dou *et al.* No.3: 386) composed of *Schisandra chinensis* (Turcz.) Baill, *Panax notoginseng* (BurK.) F.H.Chen, *Bupleurum chinense* DC, and *Phyllanthus urinaria* Linn for the treatment of chronic hepatitis (detected from serum); Xuefu Zhuyu Oral Liquid (Yan *et al.* No.4: 566) composed of *Carthamus tinctorius* L, *Paeonia lactiflora*

Pall, *Aaugellica sinensis* (Oliv) Diels, *Ligusticum chuanxiong* Hort., *Citrus aurantium* L., and *Glycyrrhiza uralensis* Fisch. etc 11 ingredients for the treatment of headache and chest pain caused by interior retention of blood stasis; Chidan Capsula (Xu *et al.* No.7: 1069) composed of *Paeonia lactiflora* Pall, *Salvia miltiorrhiza* Bonge, *Scutellaria baicalensis* Georgi, *Wolfiporia cocos* (Schw.) Ryv. et Gibn, and *Sparganium stoloniferum* Buch.-Ham. for the treatment of chronic pelvic inflammatory disease (PID) and appendagitis; Yinhuang Oral Liquid (Zhao *et al.* No.7: 1053) composed of *Scutellaria baicalensis* Georgi and *Lonicera japonica* Thunb. for upper respiratory tract infection, acute and chronic tonsillitis, and faucitis. Fig. 2 showed their HPLC fingerprinting spectra.

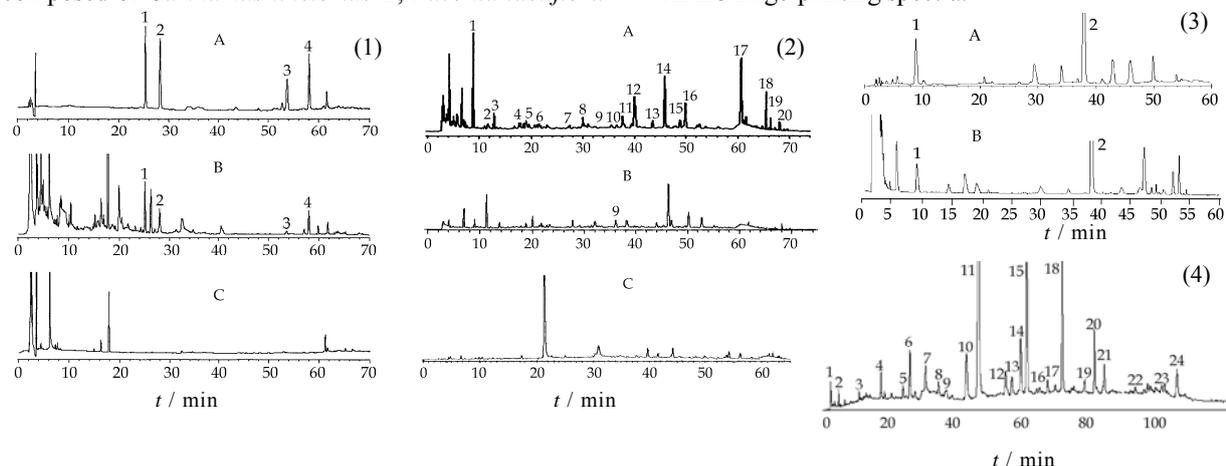


Fig. 2 HPLC fingerprinting analysis of compound preparations of CMM

- (1): HPLC chromatogram of serum containing references substances (A) and Wurenchun Capsula (B), and blank serum (C) (Dou *et al.* No. 3: 386-389)
 (2): HPLC fingerprint of Xuefu Zhuyu Oral Liquid at 254 nm (A), 320 nm (B), and 400 nm (C) (Yan *et al.* No. 4: 566-568)
 (3): HPLC chromatogram of Yinhuang Oral Liquid (A) and references (B) (Zhao *et al.* No. 7: 1053-1056)
 (4): HPLC fingerprint chromatogram of Chidan Capsula (Xu *et al.* No. 7: 1069-1070)

For the quality analysis of crude drug or single herb from batch to batch, from different places collected, and from different processing techniques, HPLC fingerprinting analysis is more useful to recognize their quality level and similarity based on their active compounds and/or major compounds. Some of representative researches, e.g. *Ligusticum chuanxiong* Hort. (Wang *et al.* No.12: 1980), *Catsia tora* Linn. (Wang *et al.* No.10: 1638), *Citrus aurantium* L. (Li *et al.* No.9: 1469), *Astragalus membranaceus* (Fisch.) (Qin *et al.* No.3: 471), *Verbena officinalis* L. (Dun *et al.* No.12: 1984), and the baby root of *Aconitum carmichaeli* Debx. (Sun *et al.* No.1: 131) are illustrated in Fig. 3.

The process of *Fuzi* and *Wutou*, the baby root and mother root of *Aconitum carmichaeli* Debx. is a very complicated issue and controversial for years and years because the diterpenoidal alkaloids, such as aconitine, mesaconitine, jesaconitine, and hypaconitine in the rough *Fuzi* and *Wutou* play double actions of activity and toxicity. Evidence has proved that once one or two ester groups were cleaved through the treatment of base, both the toxicity and activity will lose accordingly. So, over processed *Fuzi* and *Wutou* increased the safety, but lost efficacy at same time. As shown in Fig. 3, three major alkaloids, mesaconitine, aconitine, and hypaconitine are completely decomposed, while other three alkaloids were a little increased.

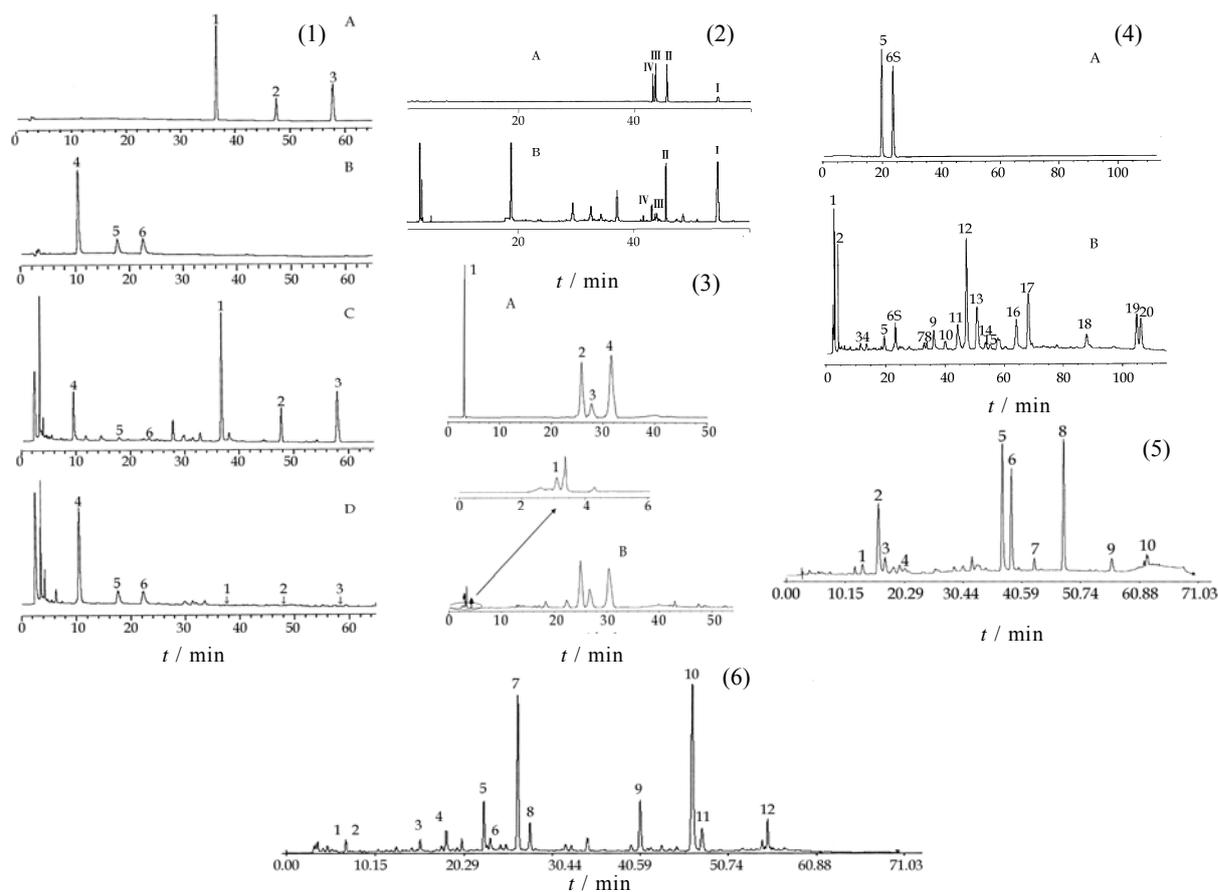


Fig. 3 HPLC fingerprints of six herbs

- (1): HPLC chromatograms of alkaloids reference substance (A and B), *Aconiti Lateralis Radix Praeparate* (C), and its processing herbal product *Heishunpian* (D) (Sun *et al.* No. 1: 131-134)
 (2): HPLC-ELSD chromatograms of astragaloside I–IV (A) and *Astragali Radix* (B) (Qin *et al.* No 3: 471-473)
 (3): Chromatogram of mixed reference substance (A) and *Aurantii Immaturus Fructus* sample (B) (Li *et al.* No 9: 1469-1474)
 (4): HPLC chromatogram of reference substance (A) and *Verbenae Herba* sample (B) (Duan *et al.* No 12: 1984-1988)
 (5): HPLC chromatogram and main characteristic peaks of *Cassiae Semen* (Wang *et al.* No 10: 1638-1641)
 (6): HPLC chromatogram and main characteristic peaks of *Chuanxiang Rhizoma* (Wang *et al.* No 12: 1980-1983)

Pharmacological and clinical studies

Pharmacological and clinical study is the third part following the preparation and quality and the chemical constituents. Among 131 papers published in 2009, antitumor is still one of the hot points and well noted. Cynanauriculoside is a new steroid glycoside with four sugars isolated from *Cynanchum auriculatum* Royle ex Wight. Pharmacological study shows that this compound has significant antitumor effect *in vitro* and *in vivo*. Moderate effect on inducing tumor cells apoptosis was thought to be one of the mechanisms of antitumor activity (Wang *et al.* No.6: 920). *Tamarix chinensis* is a traditional herbal medicine used for the treatment of measles without adequate eruption, rheumatism, and arthralgia. Wang *et al.* (No.5: 697) reported the first isolation and structural characterization of ten terpenoids

from the young twigs. With the dosage of 50 $\mu\text{g/mL}$, betulin, betulinic acid, lupeol, and 24-methylene-cycloartanol shows activity for human lung A-549 cancer cell, phytol shows significant activity for human liver BEL-7402 cancer cell. *Paris polyphylla* var. *yunnanensis* (Franch.) Hand. Mazz. is a Liliaceaeous plant known as antitumor herb in the folk medicines with a long history. Saponins were thought to be the active constituents for cancer and other activities. Yan *et al.* (No.3: 424) investigated the antitumor activity of the extract and some pure compounds isolated from this herb and found that the total saponins of *Paridis Rhizoma*, saponin I of *Paridis Rhizoma*, and diosgenin have strong cytotoxicity against the growth of LA795 cells with the IC_{50} value of 24.33 $\mu\text{g/mL}$, 1.85, and 149.75 $\mu\text{mol/L}$. The tumor weight in all treated group was significantly lower than

in the control group. Lung cancer is still the number two within the cancer patients and shows growing trend in China. The root and aerial part of *Lysimachia clethroides*, a Primulaceae plant, is used as an herbal medicine with the function of clearing away heat and toxic material, promoting blood flow for regulating menstruation, promoting diuresis, and relieving edema to treat swelling and sore throat, traumatic injury, and irregular menstrual periods. Its ethanol extract (ZE4) containing total flavonoids was tested for anticancer activity against liver cancer SMMC-7221 cells *in vitro* and H₂₂ cells *in vivo*. The result shows that ZE4 has significant activity to inhibit liver cancer (Tang *et al.* No.1: 108). Kanglaite is a registered injection made from the oil extract of *Coix lacryma-jobi* for the treatment of various tumors clinically. Tryglyceride containing mixed fatty acid chains of palmitic acid and linoleic acid is thought to be the active component. Its pharmacological actions and clinical evaluation have been reviewed (Wei and Han, No.7: 1166)

Araceae plant *Typhonium giganteum* Engl. is a toxic herb used for the treatment of facial neural paralysis and hemiplegia etc traditionally. Because it had been reported to have anti-SARS activity during 2003–2005, Wen *et al* (No.12: 1940) investigated its anti-HIV activity and found that purified ethanol extracts from fresh tuber of *Typhonium giganteum* show potential anti-HIV-1 activity. The searching of new active compounds from the genus of *Schisandra* Michx. is still attracting scientist to contribute their efforts. Rao *et al* (No.2: 248) investigated the *in vitro* anti-HBV activity of phyllocoumarin and (-)-epicatechin isolated from *S. lancifolia* and found that these two compounds both show anti-HBV activity and exert cytotoxicity against HepG2.2.15 cells with CC₅₀ > 200 µg/mL. Phyllocoumarin decreased the level of HBsAg and HBeAg secretion more effective than (-)-epicatechin and stronger than positive control Adefovir Dipivoxil (ADV) at the same concentration of 1.6 µg/mL, indicating that these two compounds are potential anti-HBV agents with lower cytotoxicity.

Oligomeric proanthocyanidin (OPC) is a well known nutritional component in the grape seeds extract, red wine, pine extract, and related products. Its function for cardiovascular, cancer, and allergy etc by its free radical scavenging effect had been well acknowledged

world wide. Xie *et al* (No.10: 1615) investigated its lowering blood sugar effect in rats and found that OPC could decrease the level of blood sugar in model rats with diabetes and increase the tolerance of blood sugar in normal rats. The seed of *Cassia obtusifolia* L. is a traditionally medicinal food with the function of liver flush, improving eyesight, relaxing bowels, lowering blood lipid, and losing weight. Liu *et al* (No.4: 583) first time investigated the mechanism of *C. obtusifolia* extract lowering blood lipid on the expression of lipogenesis genes in hyperlipidemia model mice. The result showed that *C. obtusifolia* extract containing 1% anthraquinones could significantly decrease the level of blood lipid including cholesterol, triglyceride, and low density lipoprotein in hyperlipidemia model mice, while high density lipoprotein cholesterol was significantly increased, through regulating the expression of lipid metabolism gene.

Drug abuse is still a very serious social problem and showing increasing trend. Traditional herbal therapy is expected to exert preventing some symptoms like anxiety etc during rehabilitation. Compound Ruikangxin Capsula (CRC) is composed of *Corydalis yanhusuo* W. T. Wang, *Aaugellica sinensis* (Oliv) Diels, *Ligusticum chuanxiong* Hort., and *Uncaria rhynchophylla* (Miq.) Jacks etc for the relief of rehabilitation symptoms of opioid, such as anxiety, pain, and insomnia. Its effect has been proved through animal and clinical studies. He *et al* (No.5: 763) investigated the mechanism of CRC on anxiety-like symptoms of morphine-withdrawal rats. The result shows that CRC would play an important role in rehabilitating the anxiety like behavior in morphine-withdrawal rats. Reversal of synaptophysin on hippocampus of anxious rats could be contributed to exploring the mechanism

Computer-assisted technique for discovering leading compound has been applied on activities of iridoids from *Gardenia jasminoides* Ellis (Fu *et al.* No.5: 767) and *Rehmannia glutinosa* Libosch. (Xing *et al.* No.6: 930)

Reviews

There were more than 80 reviews covering various aspects of traditional and herbal medicines published in 2009. For the single active compound or leading compound, the comprehensive research progress of

bergenin (Li *et al.* No.9: 1500) for aspiratory system diseases, taxol (Zhao *et al.* No.7: 1172) for cancer, andrographolide (Yang, No.7: 1168) with antiinflammation, antibacterial, antiviral, anticancer, and immune-regulation effects, matrine (Zhang *et al.* No.6: 1000) for liver damage, cancer, hepatic fibrosis, and cardiovascular diseases, ginsenoside Rd (Zhou and Zhou, No.5: 832) for protecting cardio-brain vascular, free radical scavenging, analgesic, enhancing study and memory function, immune-regulation, anticancer, and antiradiation, and curcumin (Yu *et al.* No.5: 828) with antiinflammation, anticancer, antioxydation, and antibacterial were reviewed.

Cordyceps sinensis (Berk.) Sacc., also called cordyceps, has been going extremely expensive because of its rare availability wildly and hardness to be cultured. The chemical constituents including amino acids and peptides, nucleoside and base, polysaccharide, mannitol and sterols, minerals, and others had been reviewed (Wang and Liu, No.7: 1157). The medicinal plants of *Paris* L. have been well noted because some of them are used as key ingredient in Yunnan Baiyao, a world famous traditional medicines for bleeding and internal-external injury. Saponins from several medicinal plants of this genus are thought to be effective components. The review about the saponins from plants of *Paris* L. and their pathway of biogenesis was reviewed (Huang *et al.* No.3: 483).

Advances in hemostatic components in CMM (Bao *et al.* No.8: 1324), on HIV entry inhibitors from natural products (Yang *et al.* No.11: 1837), on innovative drug research and development from CMM (Yang *et al.* No.10: 1513), on fingerprinting of CMM (Shao, No.6: 994), and on serum pharmacology of CNM (Wei *et al.* No.9: 1489) etc. have been reviewed.

The change of chemical constituents in the herbs between fresh-harvest to complete dry even storage has been noted. People gradually forget the use and importance of fresh herbs which has longer history than dry material as the development of society and technology. Some fresh materials may contain more required components than dry or processed one because of post-harvest synthesis or decomposition by internal enzymes. Zeng (No.1: 1) systematically reviewed the modern processing technology of CMM based on fresh materials. It's a good reference for researchers who want

to get more target compounds for specific purpose.

A new concept called Modern CMM *Yinpian* had been proposed in 2008 in CTHD (Zhao *et al.*, 2008, No.2: 161). Authors gave a further description and emphasized on some key points for the modernization of CMM. Authors also put the point and the realization of modern CMM *Yinpian* to a position of "point of the points". But, the term of CMM processing pieces, its definition, and the difference with standardized extract are still confused. Is it powder of extract, or is it processed pieces? Should it be called *Yinpian*, or should it be called processing pieces? More constructive view points and discussion are expected.

Healthy principles

Herbal ingredient is not only used for the prevention and treatment of diseases, but also for the purpose of healthier and better life. As one of the applications in the area of cosmetics, natural active components with whitening and hypopigmenting efficacy from plant, including flavonoids, hydroxyl stilbenes, coumarins, diphenylheptanes, saponins, and other types, have been reviewed (Wang *et al.* No.11: a5). The flowers of *Rosa rugosa* Thunb. and eatable fungus *Pleurotus cystidiosus* Han. Chen et Cheng are two health food with pleasant smell or taste. Chen *et al.* (No.12: 1952) investigated their pharmacological actions and mechanism to lower blood sugar. The result shows that both of them could upgrade the expression level of insulin, SOD, and PDX-1 genes, about 20% higher than model mice of diabetes showing the activity to lower blood sugar. Green tea is not only health drink with increasing trend world wide, but also used for the purpose of treatment of diseases. VeregenTM, tea polyphenols containing totally 85%–95% of (–)-epicatechin (EC), (–)-epigallocatechin (ECG), (–)-epicatechin gallate (EGC), (–)-epigallocatechin gallate (EGCG), and other polyphenols as major active constituents was approved as first botanical medicine used for the treatment of external genital warts. Liu *et al.* (No.9: 1448) observed the clinical effect of tea polyphenols paste for severe acne. The result shows that 6% tea polyphenols paste has higher effect, lower relapse rate, and fewer side effects. Red wine, especially dry red wine has been becoming more and more popular for human life. The healthy effect derived from catechin, epicatechin, resveratrol, and OPC are well approved by a

lot of evidences. Wang *et al* (No.5: 745) analyzed the contents of these compounds from collected 12 domestic commercial dry red wines by HPLC. The results indicate that the Dynasty brand contains more epicatechin, more resveratrol, and more total detected compounds than that in other brands. It's a helpful message for consumers to choose better red wine for

better health effect.

Authors are very thankful for the authors who contributed their intelligence and papers to CTHD to make this article possible. Authors also feel regretful for more good contributions couldn't be included in this limit text. All the papers cited can be found in corresponding place of the text.

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