



ZHONGCAOYAO

Chinese Traditional and Herbal Drugs

第 53 卷 第 16 期 (总第 723 期)

2022 年 8 月 28 日出版

半月刊

1970 年 1 月创刊

主 管

天津药物研究院

主 办

天津药物研究院 (www.tjipr.com)

中国药学会 (www.cpa.org.cn)

编辑出版

《中草药》杂志编辑部

地址：天津市滨海高新区滨海科技园

惠仁道 306 号

邮编：300462

电话：022-27474913 23006821

网址：www.中药杂志社.中国

www.tiprpress.com

E-mail：zcy@tiprpress.com

国际标准连续出版物号

ISSN 0253-2670

国内统一连续出版物号

CN 12-1108/R

主 编 刘昌孝 汤立达

执行主编 陈常青

目 次

• 化学成分 •

- 4925 太白银莲花地上部分三萜皂苷类化学成分的研究
王啸洋, 李慧, 陆云阳, 平耀东, 张艳华, 汤海峰
4934 东北铁线莲地上部位化学成分研究 (II)
肖寒, 郭友朋, 李治周, 孙世伟, 王惠, 吕超艺, 张英华, 王威
4940 髓肠化学成分及其抗沙门菌 T3SS 的活性成分研究
张晓春, 鲁春华
4948 基于 UPLC-Q-TOF-MS/MS 分析黄精九蒸九晒炮制过程中化学成分的变化
梁泽华, 潘颖洁, 邱丽媛, 吴鑫雨, 徐晓强, 舒月文, 袁强
4958 光叶丁公藤及其 3 个潜在代用品治疗类风湿性关节炎差异性成分和作用机制研究
胡静, 杨媛媛, 任慧, 崔小敏, 李宁, 曲彤, 陈志永

• 药剂与工艺 •

- 4973 人参皂苷 Rg₃ 和大黄酸纳米乳的制备及其联合 aPD-L1 治疗三阴性乳腺癌的药效学研究
张翡翠, 钱柯, 马莉莎, 赵悦, 施经斌, 许淑君, 熊阳
4982 Box-Behnken 响应面优化蛇葡萄素纳米结构脂质载体处方工艺及体外评价
麦婉婷, 钟华帅, 苏晓丹, 陆建媚, 覃裕翠, 黄秋洁, 叶勇
4992 基于羧甲基壳聚糖-氧化透明质酸自组装行为构建的 pH 响应型纳米乳水凝胶给药系统
汤小涵, 王哲, 闫巧, 秦社剑, 袁海龙
5001 绿原酸-黄芩苷共载纳米粒鼻腔原位凝胶的制备及增强鼻黏膜免疫作用
梁达均, 林宇建, 时军, 吴欣颖, 刘锐萍
5010 星点设计效应面法优化赶山鞭总黄酮提取工艺及提取物指纹图谱研究
井中旭, 刘雨薇, 姜海波, 刘焱南, 秦国昭, 冯宇飞
5020 红芪精准煮散饮片 HPLC 指纹图谱建立及 3 种指标成分测定
李硕, 俱蓉, 杨秀娟, 赵林华, 全小林
5026 基于中红外光谱技术桂枝茯苓胶囊浓缩过程快速检测方法研究
王玉琴, 徐芳芳, 张欣, 吴云, 张永超, 章晨峰, 王振中

• 药理与临床 •

- 5034 18β-甘草次酸增强固有免疫细胞中 I 型干扰素响应进而协同抑制肝癌生长的机制研究
李硕, 白金钊, 刘国平
5044 黑树莓花青素联合奥沙利铂或喜树碱通过 Akt 信号通路协同增强结直肠癌化疗药物的治疗效果及作用机制研究
刘月, 李鑫, 庞文倩, 杨哲, 陈丽莉, 张秋华
李晓龙, 毕秀丽
5052 基于 PI3K/Akt 信号通路探究当归补血汤干预大鼠实验性脑缺血再灌注损伤的作用机制
石娅, 刘文, 刘兴德, 宋信莉, 李鑫, 舒万芬, 张甘纯
秦琴, 王洪鑫
5066 肠道菌群紊乱对泻心汤药效成分大黄素药动学的影响
刘莹, 贾兰, 张晓喻, 胡慧玲, 郭欣悦, 王战国



ZHONGCAOYAO

Chinese Traditional and Herbal Drugs

第 53 卷 第 16 期 (总第 723 期)

2022 年 8 月 28 日出版

广告合作

中草药杂志社媒体运营部

电话：022-23006868 23006895

印 刷

天津市恒远印刷有限公司

国内发行

天津市邮政局

订 阅

全国各地邮政局

国外发行

中国国际图书贸易集团有限公司

(100044 北京 399 信箱)

国内邮发代号

6-77

国外邮发代号

M221

定价

每期 50.00 元 全年 1200.00 元

广告发布登记号

BH 2020-01

封面图片提供

邓新华

英文责任编辑

王祎然

本期责任编辑

李亚楠

- 5074** 基于 TNF- α /IKK β /NF- κ B 信号通路研究消积丸治疗 *ApoE*^{-/-} 小鼠动脉粥样硬化的机制
涂宛晴, 梁秋儿, 谢鹏程, 谢 婷, 林丽群, 陈利国

- 5085** 基于 PI3K/PDK1/Akt 信号通路研究丹参-红花药对对寒凝血瘀型心肌缺血大鼠的保护作用及机制
王小平, 薛志鹏, 杜少兵, 周慧慧, 白吉庆, 李 菁, 王鹏飞
谢李红, 陈 妮

- 5093** 酸枣仁-五味子配伍对抗焦虑作用的影响及指标成分的肠吸收特性研究
刘金凤, 王晓玫, 李佳园, 杨 雪, 魏晓嘉, 王雨青, 吕 研
于佳禾, 金重先, 王春国, 石晋丽

• 数据挖掘与循证医学 •

- 5107** 中成药辅助治疗儿童反复呼吸道感染的网状 Meta 分析
李阳滔, 郭素香, 陈 慧

- 5119** 7 种常用口服中成药辅助治疗晚期非小细胞肺癌患者的回顾性研究
赵林林, 王艳亭, 孔凡铭, 李小江, 刘宏根, 王晓群, 贾英杰
5128 基于 Web of Science 文献计量分析的宁夏枸杞研究现状和发展态势
张 芳, 吴昌键, 张 霞, 郭 盛, 朱 悅, 余君伟, 段金廒

• 药材与资源 •

- 5142** 黄草乌异戊烯基焦磷酸异构酶基因的克隆与功能研究
马晓惠, 曹小青, 管丽娜, 李国栋, 王一博

- 5149** 过路黄 MYB 转录因子家族成员的挖掘及鉴定
杨敬天, 黎 华, 赵 欢, 龙 芸, 张咏祀, 刘小红

- 5159** 尖刀唇石斛和翅梗石斛叶绿体全基因组分析
李卓蔚, 邱 迁, 郎佳琪, 吴应梅, 杜慧慧, 周 浓

- 5170** 龙葵愈伤组织生长特性及次生代谢产物积累研究
陈媛媛, 刘秀岩, 刘福顺, 杨世海

- 5179** 基于指纹图谱和多成分含量测定的关黄柏及川黄柏差异性研究
冯 媛, 郭 龙, 常雅晴, 郑玉光, 张清清

• 综 述 •

- 5185** 基于应激颗粒的中药神经保护研究设想
陈 畅, 罗婉君, 段飞鹏, 王寓平, 胡雄飞, 杨萌楚, 姜金铸
谢永艳, 黄锦伟, 黄丽萍

- 5193** 五法经典方辨治肝纤维化的现代药理作用研究概况
李洁洁, 贾可欣, 刘闰平, 孙 蓉, 李晓骄阳

- 5205** 中医药靶向调节线粒体动力学及相关蛋白 SUMO 化修饰防治脑缺血/再灌注损伤的研究进展
陈祥宇, 阳晶晶, 梅志刚, 张文丽

- 5215** 牡丹皮化学成分、药理作用及其质量标志物 (Q-Marker) 的预测分析
张树蓉, 赵宏苏, 佟沫儒, 熊俊伟, 王 雪, 巫梦莹, 翟宏焱
吴德玲, 张 村, 张 伟

- 5225** 香附化学成分和药理作用研究进展及质量标志物 (Q-Marker) 预测分析
王凤霞, 钱 琪, 李葆林, 王鑫国, 牛丽颖

- 5235** 从社会发展角度探讨中药资源的历史、现在与未来
孟祥才, 于鹏程, 何录文, 关 瑜

- 5245** 外来药用资源“中药化”研究现状及策略
莫钰林, 王 龙, 杨艳君, 贾晓斌, 李志勇, 封 亮

• 药事管理 •

- 5255** 国际植物药高价值专利分析及应对策略
甄思圆, 刘 扬, 童元元, 高 曼, 李海燕

本刊投稿须知见《中草药》2022, 53(1): 326-328.

期刊基本参数: CN 12-1108 R * 1970 * sm * A4 * 240 * zh * P * ¥ 50.00 * 3000 * 35 * 2022 - 16

CHINESE TRADITIONAL AND HERBAL DRUGS

Vol. 53 No. 16 Aug. 2022

Chinese Traditional and Herbal Drugs

(Semimonthly)

Founded in January, 1970

Directed by

Tianjin Institute of Pharmaceutical Research

Sponsored by

Tianjin Institute of Pharmaceutical Research

(www.tjipr.com)

Chinese Pharmaceutical Association

(www.cpa.org.cn)

Edited and Published by

Editorial Office of Chinese Traditional
and Herbal Drugs

Address: 306# Huirendao, Binhai District,
Tianjin, China

Post Code: 300462

Tel: +86-22-27474913

Fax: +86-22-23006821

http:// www.中草药杂志社.中国

www.tiprpress.com

E-mail: zcy@tiprpress.com

Standard Number

ISSN 0253-2670

CN 12-1108/R

CODEN CTYAD8

Editor-in-chief

LIU Chang-xiao TANG Li-da

Executive Editor-in-chief

CHEN Chang-qing

Contents

• Chemical Constituents •

- 4925** Triterpenoid saponins from aerial parts of *Anemone taipaiensis*
WANG Xiao-yang, LI Hui, LU Yun-ying, PING Yao-dong, ZHANG Yan-hua,
TANG Hai-feng

- 4934** Chemical constituents from aerial parts of *Clematis manshurica* (II)
XIAO Han, GUO You-peng, LI Zhi-zhou, SUN Shi-wei, WANG Hui, LYU
Chao-ji, ZHANG Ying-hua, WANG Wei

- 4940** Chemical constituents from whole herbs of *Eclipta prostrata* and active
components inhibit T3SS of *Salmonella*
ZHANG Xiao-chun, LU Chun-hua

- 4948** Analysis on chemical components changes of *Polygonati Rhizoma* in processing
of nine times steaming and nine times sunning by UPLC-Q-TOF-MS/MS
LIANG Ze-hua, PAN Ying-jie, QIU Li-yuan, WU Xin-yu, XU Xiao-qiang, SHU
Yue-wen, YUAN Qiang

- 4958** Discriminatory compounds and mechanism of *Erycibe schmidii* and three
potential substitutes against rheumatoid arthritis
HU Jing, YANG Yuan-yuan, REN Hui, CUI Xiao-min, LI Ning, QU Tong,
CHEN Zhi-yong

• Pharmaceutics and Technology •

- 4973** Preparation of ginsenoside Rg₃ and rhein nanoemulsion and pharmacodynamics
study of its combination with aPD-L1 in treatment of triple negative breast
cancer
ZHANG Fei-feng, QIAN Ke, MA Li-sha, ZHAO Yue, SHI Jing-bin, XU
Shu-jun, XIONG Yang

- 4982** Formulation optimization of ampelopsin nanostructured lipid carriers by
Box-Behnken response surface method and *in vitro* evaluation
MAI Wan-ting, ZHONG Hua-shuai, SU Xiao-dan, LU Jian-mei, QIN Yu-cui,
HUANG Qiu-jie, YE Yong

- 4992** pH-responsive nanoemulsion hydrogel drug delivery system based on self-
assembly behavior of carboxymethyl chitosan-oxidized hyaluronic acid
TANG Xiao-han, WANG Zhe, YAN Qiao, QIN Zhi-jian, YUAN Hai-long

- 5001** Preparation of chlorogenic acid-baicalin co-loaded nanoparticles *in situ* nasal gel
and investigation on enhancing nasal mucosal immunity
LIANG Da-jun, LIN Yu-jian, SHI Jun, WU Xin-ying, LIU Rui-ping

- 5010** Optimization of extraction process of total flavonoids from *Hypericum attenuatum*
by central composite design response surface method and fingerprint research
JING Zhong-xu, LIU Yu-wei, JIANG Hai-bo, LIU Yan-nan, QIN Guo-zhao,
FENG Yu-fei

- 5020** Establishment of HPLC fingerprint of *Hedysari Radix* precision boiled powder
decoction pieces and determination of three indicative components
LI Shuo, JU Rong, YANG Xiu-Juan, ZHAO Lin-hua, TONG Xiao-lin

- 5026** Research on rapid detection method of concentration process of Guizhi Fuling
Capsules based on mid-infrared spectroscopy
WANG Yu-qin, XU Fang-fang, ZHANG Xin, WU Yun, ZHANG Yong-chao,
ZHANG Chen-feng, WANG Zhen-zhong

• Pharmacological Studies and Clinical Observations •

- 5034** 18β-Glycyrrhetic acid enhances response of type I interferon in innate immune
cells and inhibits hepatocellular carcinoma growth
LI Shuo, BAI Jin-zhao, LIU Run-ping

- 5044** Black raspberry anthocyanins combined with oxaliplatin or camptothecin
synergistically enhance therapeutic effect of colorectal cancer chemotherapy
drugs and mechanism through Akt signaling pathway
LIU Yue, LI Xin, PANG Wen-qian, YANG Zhe, CHEN Li-li, ZHANG Qiu-hua,
LI Xiao-long, BI Xiu-li

- 5052** Mechanism of Danggui Buxue Decoction in intervention of experimental cerebral
ischemia reperfusion injury in rats based on PI3K/Akt signaling pathway
SHI Ya, LIU Wen, LIU Xing-de, SONG Xin-li, LI Xin, SHU Wan-fen, ZHANG
Gan-chun, QIN Qin, WANG Hong-xin

- 5066** Effect of intestinal flora disorder on pharmacokinetics of emodin in Xiexin
Decoction
LIU Ying, JIA Lan, ZHANG Xiao-yu, HU Hui-ling, GUO Xin-yue, WANG
Zhan-guo

Chinese Traditional and Herbal Drugs

(Semimonthly)

Founded in January, 1970

Advertising cooperationDepartment of Media Operations, Tianjin
Press of Chinese Herbal Medicines

Tel: (022)23006868 23006895

Printed by

Tianjin Hengyuan Printing Co., Ltd.

Distribution

Tianjin Post Office

Subscription Domestic

Local Post Office

Subscription Overseas

China International Book Trading Corporation,

PO Box 399, Beijing 100044, China

Advertising Registration Number

BH 2020-01

Publication Date

Aug. 28, 2022

Editor in Charge of English

WANG Yi-ran

Editor in Charge of This Issue

LI Ya-nan

- 5074** Mechanism of Xiaoji Pills in treatment of atherosclerosis in *ApoE^{-/-}* mice based on TNF- α /IKK β /NF- κ B signaling pathway
TU Wan-qing, LIANG Qiu-er, XIE Peng-cheng, XIE Ting, Lam Lai Kwan, CHEN Li-guo
- 5085** Protective mechanism of *Salviae Miltiorrhizae Radix et Rhizoma-Carthami Flos* drug pair on myocardial ischemia rats with cold coagulation and blood stasis syndrome based on PI3K/PDK1/Akt signaling pathway
WANG Xiao-ping, XUE Zhi-peng, DU-Shao-bing, ZHOU Hui-hui, BAI Ji-qing, LI Jing, WANG Peng-fei, XIE Li-hong, CHEN Ni
- 5093** Effect of *Ziziphi Spinosae Semen* and *Schisandrae Chinensis Fructus* compatibility on anti-anxiety activity and intestinal absorption properties of effective components
LIU Jin-feng, WANG Xiao-mei, LI Jia-yuan, YANG Xue, WEI Xiao-jia, WANG Yu-qing, LYU Yan, YU Jia-he, JIN Zhong-xian, WANG Chun-guo, SHI Jin-li
- **Data Mining and Evidence-Based Medicine** •
- 5107** Network Meta-analysis of Chinese patent medicine in adjuvant treatment of children with recurrent respiratory tract infection
LI Yang-tao, GUO Su-xiang, CHEN Hui
- 5119** A retrospective study of seven commonly used oral Chinese patent medicines in adjuvant treatment of patients with advanced non-small cell lung cancer
ZHAO Lin-lin, WANG Yan-ting, KONG Fan-ming, LI Xiao-jiang, LIU Hong-gen, WANG Xiao-qun, JIA Ying-jie
- 5128** Research status and development trend of *Lycium barbarum* based on bibliometric analysis of Web of Science
ZHANG Fang, WU Chang-jian, ZHANG Xia, GUO Sheng, ZHU Yue, YU Jun-wei, DUAN Jin-ao
- **Medicinal Materials** •
- 5142** Cloning and functional characterization of isopentenyl diphosphate isomerase gene from *Aconitum vilmorinianum*
MA Xiao-hui, CAO Xiao-qing, GUAN Li-na, LI Guo-dong, WANG Yi-bo
- 5149** Excavation and identification of members of MYB transcription factor family in *Lysimachia christinae*
YANG Jing-tian, LI Hua, ZHAO Huan, LONG Yun, ZHANG Yong-si, LIU Xiao-hong
- 5159** Sequence analysis of complete chloroplast genome of *Dendrobium heterocarpum* and *Dendrobium trigonopus*
LI Zhuo-wei, QIU Qian, LANG Jia-qi, WU Ying-mei, DU Hui-hui, ZHOU Nong
- 5170** Growth characteristics and secondary metabolite accumulation of *Solanum nigrum*
CHEN Yuan-yuan, LIU Xiu-yan, LIU Fu-shun, YANG Shi-hai
- 5179** Research on difference of *Phellodendron amurense* and *Phellodendron chinense* based on fingerprint and multicomponent content determination
FENG Yuan, GUO Long, CHANG Ya-qing, ZHENG Yu-guang, ZHANG Qing-qing
- **Reviews** •
- 5185** Inspiration of neuroprotection of traditional Chinese medicine (TCM) based on stress granules
CHEN Chang, Betty Yuen Kwan Law, DUAN Fei-peng, WANG Yu-ping, XU Xiong-fei, YANG Meng-chu, JIANG Jing-zhu, XIE Yong-yan, Vincent Kam Wai Wong, HUANG Li-ping
- 5193** Research situation on modern pharmacological effects of five classical prescriptions in treatment of liver fibrosis
LI Yi-jie, JIA Ke-xin, LIU Run-ping, SUN Rong, LI Xiao-jiaoyang
- 5205** Research progress on traditional Chinese medicine in treatment of cerebral ischemia/reperfusion injury by targeting mitochondrial dynamics and related proteins SUMOylation
CHEN Xiang-yu, YANG Jing-jing, MEI Zhi-gang, ZHANG Wen-li
- 5215** Chemical constituents, pharmacological effects of *Moutan Cortex* and predictive analysis on its quality marker (Q-Marker)
ZHANG Shu-rong, ZHAO Hong-su, TONG Mo-ru, XIONG Jun-wei, WANG Xue, WU Meng-ying, ZHAI Hong-yan, WU De-ling, ZHANG Cun, ZHANG Wei
- 5225** Research progress on chemical constituents and pharmacological effects of *Cyperi Rhizoma* and predictive analysis on its quality marker (Q-Marker)
WANG Feng-xia, QIAN Qi, LI Bao-lin, WANG Xin-guo, NIU Li-ying
- 5235** Discussion on past, present and future of traditional Chinese medicine resources based on social development level
MENG Xiang-cai, YU Peng-cheng, HE Lu-wen, GUAN Yu
- 5245** Research status and strategy on introducing foreign medicinal resources to traditional Chinese medicine
MO Yu-lin, WANG Long, YANG Yan-jun, JIA Xiao-bin, LI Zhi-yong, FENG Liang
- **Pharmaceutical Affairs Management** •
- 5255** Analysis and countermeasures of high-value international patents of botanical medicine
ZHEN Si-yuan, LIU Yang, TONG Yuan-yuan, GAO Man, LI Hai-yan