



ZHONGCAOYAO

Chinese Traditional and Herbal Drugs

第 57 卷 第 3 期 (总第 806 期)

2026 年 2 月 12 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》编辑部

地址: 天津市滨海新区滨海科技园

惠仁道 306 号

邮编: 300462

电话: 022-27474913 23006821

网址: www.tiprpress.com

www.中草药杂志社.中国

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 陈士林

执行主编 陈常青

目 次

· 专 论 ·

- 789 中药绿色制造碳足迹核算的关键问题与对策
慈志敏, 马鸿雁, 李 正, 杨 明, 王学成, 伍振峰, 张定堃

· 化学成分 ·

- 799 杨树桑黄化学成分研究
任航洁, 陶玉佳, 李 刚, 李华强, 秦路平, 施 琦
806 固公果果实干预胃炎-癌转化的活性成分研究
陈宇航, 姚 彬, 尹孝荣, 原 震, 张静泽, 刘岱琳
817 大蕉叶化学成分及细胞增殖抑制活性研究
严绪华, 孙佳乐, 梁秋明, 王 峰, 方振峰
825 经典名方茵陈五苓散化学成分及入血成分的 UPLC-Orbitrap-MS/MS
快速分析
陈 群, 林巧璇, 耿秋东, 许珈齐, 欧余航, 曾维铨

· 药剂与工艺 ·

- 840 基于质量标志物-热分析-电子感官技术联用的焦山楂炮制工艺优化及
感官品质评价研究
孙 琳, 魏冰斌, 王 瑛, 孟祥龙, 闫晓宁, 张朔生
859 基于中药超分子探讨黄芪-莪术配伍增效抗肝癌的科学内涵
刘若雨, 王祖驰, 刘名玉, 赵春芹, 张 振, 李 肖
871 安神定志丸制备工艺优化及药效学研究
詹 婷, 张晓倩, 邢承洁, 高 裕, 谢鹏飞, 张金薛, 曾韩睿
滕 帆, 张彩云
885 基于层次分析-熵权法的经典名方白术散提取工艺优化及其抗炎
活性验证
郝凌峰, 刘义豪, 王婷婷, 王丹凤, 胡晓红, 臧振中, 吴样明
朱卫丰, 管咏梅
897 何首乌“九蒸九晒”炮制过程“颜色-成分-抗氧化活性”的变化及
相关性研究
唐 林, 高元航, 李海英, 廖 卓, 余亚胜, 王 璐
杨 磊, 胡 超
911 基于关键工艺参数的桂枝茯苓胶囊提取液物性及功效物质关联分析
孔祥文, 王 佩, 毛逸桂, 刘文君, 曹 亮, 王振中
肖 伟, 牛雪妮

· 药理与临床 ·

- 925 通脉养心丸通过增强 PGC-1 α 介导的线粒体功能减轻心肌缺血再灌注
损伤
于 鲁, 王 旭, 刘雨桐, 高 杉, 于春泉, 李 琳
935 丹参酮 II_A 通过调控 Rac1/JNK 通路改善臂丛神经根性撕脱伤后运动
功能障碍
张 琴, 程晓民, 陈曼妮, 胡向航, 潘启暘, 加彩菊, 刘煜洪, 张 颢
949 青钱柳总三萜通过调节 FXR 介导的胆汁酸和脂质代谢途径改善高脂
饮食诱导的小鼠代谢相关脂肪性肝病
张 颖, 谈燕清, 刘 杰, 孔吉旭, 许 杰, 贺海波, 王洪武
孟子元, 李浩然, 唐海明, 张继红
968 五味子乙素联合桔梗皂苷 D 通过抑制 JAK2/STAT6 通路调控巨噬细胞
M1/M2 极化改善肺纤维化
孙梦迪, 孙志远, 卢 芳, 于栋华, 王 宇, 陈平平, 刘树民
981 基于 PPAR γ /ERR α /PGC-1 β 信号通路探究哈巴昔抑制动脉粥样硬化
小鼠骨吸收的作用机制
梁瑞琼, 徐天舒, 郭昊辰, 岳改月, 戴 璇, 王丽丽
郭淑贞, 张东伟



ZHONGCAOYAO

Chinese Traditional and Herbal Drugs

第 57 卷 第 3 期 (总第 806 期)

2026 年 2 月 12 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 60.00 元 全年 1440.00 元

英文责任编辑

王祎然

本期责任编辑

时圣明

990 基于 Ihh-Gli 信号通路探究乌头汤治疗膝骨关节炎的作用机制

虞跃跃, 成杭洁, 孟梓涵, 张 旭, 赵合立, 张文静
李继安, 张一昕

• 数据挖掘与循证医学 •

1001 数据驱动抑郁症精准用药: 基于 Apriori 算法与超图解析逍遥散类方与选择性 5-羟色胺再摄取抑制剂联用抗抑郁的“方案-不良反应-抑郁亚型”三阶关联

许文璐, 孙乐华, 秦雪梅, 刘晓节

1014 “聚于胃, 关于肺”视角下探索胃食管反流病与慢性阻塞性肺疾病的因果关系及干预中药预测

张文娟, 李 江, 孙艳丽, 李 倩, 张昀华, 成晓萌, 钟晓曼
黎白银, 邓翔文, 吴建军

1032 小檗碱及其衍生物药物开发的全球专利态势分析

孙明汉, 王天炜, 朱秀珠, 张 栋

1041 基于文献计量学分析中药多糖作用于肠道菌群的研究现状与发展前景

王虹洁, 王 永, 王 英, 陈慧娟, 曾 勇, 邝婷婷

• 药材与资源 •

1054 丹参 SmABCG34 基因的生物信息学与表达分析

林亚楠, 白艳红, 邱馨冉, 祖秀丽, 于 娟, 刘红燕, 宫亚楠
陈 雪, 刘 谦

1064 刺儿参 AP2/ERF 转录因子家族的鉴定及其在 MeJA 诱导下的表达特征分析

康孟莹, 王 鑫, 张 贺, 张继康, 刘 京, 卞朝阳, 吴 昊
李玉花, 王 宇

1077 柔毛淫羊藿 MYB 转录因子家族的全基因组鉴定及其光质调控下表达分析

张高阳, 刘汶泽, 宋腾达, 谷亚飞, 王雅洁, 吴政霆, 初雷霞
董 宁, 万 婕, 张雪娇, 杨林林, 董诚明, 冯卫生

1091 基于指纹图谱及化学模式识别法结合多指标含量测定对不同直径远志根各部位的质量评价

张艺蕾, 杨冰月, 赵 璠, 李 朋, 鲁 鹏, 张 岗
颜永刚, 彭 亮

1101 不同来源三七茎叶提取物中有效成分的测定及调血脂作用

林立真, 王宝东, 李 涛, 刘洪霞, 李晓敏, 赵余庆

• 综 述 •

1109 珍稀濒危药用植物川贝母人工繁育关键技术研究进展与可持续发展战略

高 旦, 吴宇涵, 陈晓芳, 卢 峰, 杨泽敏, 张浩博, 史亚龙
张海涛, 王家禄, 王永刚, 庾 强, 李西文

1123 中药复杂溶液环境中成分存在状态解析及制药控制研究

邢丹彤, 丘燃云, 沈 欣, 支兴蕾, 董政起, 李存玉

1138 脂质组学在中药治疗肝病研究中的应用进展

张 铮, 唐爱存, 温子帅, 肖 锐, 魏雅男, 付 蕾, 马冰冰
张陈睿, 姚 春, 吴芳芳

1149 中药及其活性成分调控铁死亡治疗泌尿系肿瘤作用机制研究进展

孙 瑞, 魏义举, 张会永, 陈智慧, 于 莉, 吴 威

1158 木通、川木通与关木通: 品种混淆、毒性机制及鉴定技术研究进展

杨 露, 马文哲

1167 中药及活性成分靶向胰岛 β 细胞与脂肪细胞衰老防治 2 型糖尿病的新策略

刘 岩, 苏琳茗, 王囡囡, 金 亮, 张方方

1179 中药注射剂治疗慢性心力衰竭的研究进展

孟骊冲, 王梓仪, 李欣春, 李 琳, 胡志希

1195 延胡索乙素治疗心血管疾病的研究进展

刘 祎, 李敬瑄, 董维冲, 袁 叶, 杨秀岭

本刊投稿须知见《中草药》2026, 57(1): 390-392.

期刊基本参数: CN 12-1108/R * 1970 * sm * A4 * 240 * zh * P * ¥ 60.00 * 3000 * 34 * 2026-03

CHINESE TRADITIONAL AND HERBAL DRUGS

Vol. 57 No. 3 Feb. 2026

Chinese Traditional and Herbal Drugs

(Semimonthly)

Founded in January, 1970

Supervised 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

CHEN Shilin

Executive Editor-in-chief

CHEN Changqing

Contents

· Special Topic ·

- 789 Key issues and countermeasures of carbon footprint accounting for green manufacturing of traditional Chinese Medicines
CI Zhimin, MA Hongyan, LI Zheng, YANG Ming, WANG Xuecheng, WU Zhenfeng, ZHANG Dingkun

· Chemical Constituents ·

- 799 Chemical constituents of *Sanguangporus vaninii*
REN Hangjie, TAO Yujia, LI Gang, LI Huangqiang, QIN Luping, SHI Qi
- 806 Active components of *Rosa odorata* var. *gigantea* fruits in intervening gastritis-cancer transformation
CHEN Yuhang, YAO Bin, YIN Xiaorong, YUAN Zhen, ZHANG Jingze, LIU Dailin
- 817 Chemical constituents from leaves of *Musa × paradisiaca* and their anti-proliferative activities
YAN Xuhua, SUN Jiale, LIANG Qiuming, WANG Feng, FANG Zhenfeng
- 825 Rapid identification of chemical constituents and blood-absorbed components in classical chinese formula Yincheng Wuling San by UPLC-Orbitrap-MS/MS
CHEN Qun, LIN Qiaoxuan, GENG Qiudong, XU Jiaqi, OU Yuhang, ZENG Weiquan

· Pharmaceuticals and Technology ·

- 840 Optimization of processing technology and sensory quality evaluation of charred *Crataegi Fructus* based on quality marker-thermal analysis-electronic sensory technology
SUN Lin, WEI Bingbin, WANG Ying, MENG Xianglong, YAN Xiaoning, ZHANG Shuosheng
- 859 A discussion on scientific connotation of synergistic effect of *Astragali Radix* and *Curcumae Rhizoma* in enhancing anti-liver cancer effect based on traditional Chinese medicine supramolecular
LIU Ruoyu, WANG Zuchi, LIU Mingyu, ZHAO Chunqin, ZHANG Zhen, LI Xiao
- 871 Optimization of preparation process and pharmacodynamics research of Anshen Dingzhi Pills
ZHAN Ting, ZHANG Xiaoqian, XING Chengjie, GAO Yu, XIE Pengfei, ZHANG Jinxue, ZENG Hanrui, TENG Fan, ZHANG Caiyun
- 885 Extraction process optimization and anti-inflammatory activity validation of classic prescription Baizhu Powder using analytic hierarchy process-entropy weight method
HAO Lingfeng, LIU Yihao, WANG Tingting, WANG Danfeng, HU Xiaohong, ZANG Zhenzhong, WU Yangming, ZHU Weifeng, GUAN Yongmei
- 897 Changes and correlations of "color-component-antioxidant activity" in "nine-steaming and nine-sun-drying" processing of *Polygoni Multiflori Radix*
TANG Lin, GAO Yuanhang, LI Haiying, LIAO Zhuo, YU Yasheng, WANG Lu, YANG Lei, HU Chao
- 911 Correlation analysis of physical properties and effective components in Guizhi Fuling Capsules extract based on critical process parameters
KONG Xiangwen, WANG Pei, MAO Yigui, LIU Wenjun, CAO Liang, WANG Zhenzhong, XIAO Wei, NIU Xueni

· Pharmacological Studies and Clinical Observations ·

- 925 Tongmai Yangxin Pill mitigates myocardial ischemia-reperfusion injury through enhancement of PGC-1 α -mediated mitochondrial function
YU Lu, WANG Xu, LIU Yutong, GAO Shan, YU Chunquan, LI Lin
- 935 Tanshinone II_A facilitates motor function recovery following brachial plexus root avulsion by modulating Rac1/JNK pathway
ZHANG Qin, CHENG Xiaomin, CHEN Manni, HU Xianghang, PAN Qiyang, JIA Caiju, LIU Yuhong, ZHANG Xie
- 949 Total triterpenoid from *Cyclocarya paliurus* improves high-fat diet-induced metabolic-associated fatty liver disease in mice by regulating FXR-mediated bile acid and lipid metabolism pathways
ZHANG Ying, TAN Yanqing, LIU Jie, KONG Jixu, XU Jie, HE Haibo, WANG Hongwu, MENG Ziyuan, LI Haoran, TANG Haiming, ZHANG Jihong
- 968 Schisandrin B combined with platycodin D ameliorates pulmonary fibrosis by regulating macrophage M1/M2 polarization via inhibition of JAK2/STAT6 pathway
SUN Mengdi, SUN Zhiyun, LU Fang, YU Donghua, WANG Yu, CHEN Pingping, LIU Shumin

Chinese Traditional and Herbal Drugs

(Semimonthly)

Founded in January, 1970

Advertising cooperation

Department 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

Publication Date

Feb. 12, 2026

Editor in Charge of English

WANG Yiran

Editor in Charge of This Issue

SHI Shengming

- 981 Mechanism of harpagide in regulating bone resorption in atherosclerosis mice based on PPAR γ /ERR α /PGC-1 β signaling pathway
LIANG Ruiqiong, XU Tianshu, GUO Haochen, YUE Gaiyue, DAI Xuan, WANG Lili, GUO Shuzhen, ZHANG Dongwei
- 990 Mechanism of Wutou Decoction in treatment of knee osteoarthritis based on Ihh-Gli signaling pathway
YU Yueyue, CHENG Hangjie, MENG Zihan, ZHANG Xu, ZHAO Heli, ZHANG Wenjing, LI Ji'an, ZHANG Yixin
- Data Mining and Evidence-Based Medicine •
- 1001 Data-driven precision medication for depression: Analyzing multidimensional association of “regimen-adverse reaction-depressive subtypes” in combination of “Xiaoyao Powders-SSRIs” against depression based on Apriori algorithm and hypergraph
XU Wenlu, SUN Lehua, QIN Xuemei, LIU Xiaojie
- 1014 Exploring causal relationship between gastroesophageal reflux disease and chronic obstructive pulmonary disease and predicting interventional traditional Chinese medicines from perspective of “gather in stomach and focus on lung”
ZHANG Wenjuan, LI Jiang, SUN Yanli, LI Qian, ZHANG Yunhua, CHENG Xiaomeng, ZHONG Xiaoman, LI Baiyin, DENG Xiangwen, WU Jianjun
- 1032 Analysis of global patent situation in drug development of berberine and its derivatives
SUN Minghan, WANG Tianwei, ZHU Xiuzhu, ZHANG Dong
- 1041 Research status and development prospects of traditional Chinese medicine polysaccharides acting on intestinal flora based on bibliometric analysis
WANG Hongjie, WANG Yong, WANG Ying, CHEN Huijuan, ZENG Yong, KUANG Tingting
- Medicinal Materials •
- 1054 Bioinformatics and expression analysis of *SmABCG34* gene in *Salvia miltiorrhiza*
LIN Yanan, BAI Yanhong, QIU Xinran, ZU Xiuli, YU Juan, LIU Hongyan, GONG Yanan, CHEN Xue, LIU Qian
- 1064 Identification of *AP2/ERF* transcription factors in *Oplopanax elatus* and analysis of their expression characteristics under MeJA induction
KANG Mengying, WANG Xin, ZHANG He, ZHANG Jikang, LIU Jing, BIAN Chaoyang, WU Hao, LI Yuhua, WANG Yu
- 1077 Genome-wide identification of MYB transcription factor family in *Epimedium pubescens* and expression analysis under light quality regulation
ZHANG Gaoyang, LIU Wenzhe, SONG Tengda, GU Yafei, WANG Yajie, WU Zhengting, CHU Leixia, DONG Ning, WAN Jie, ZHANG Xuejiao, YANG Linlin, DONG Chengming, FENG Weisheng
- 1091 Quality evaluation of different parts of *Polygala tenuifolia* root with different diameters based on fingerprint and chemical pattern recognition combined with multi-index content determination
ZHANG Yilei, YANG Bingyue, ZHAO Fan, LI Peng, LU Peng, ZHANG Gang, YAN Yonggang, PENG Liang
- 1101 Determination of effective components in extracts from stems and leaves of *Panax notoginseng* from different sources and their lipid-regulating effects
LIN Lizhen, WANG Baodong, LI Tao, LIU Hongxia, LI Xiaomin, ZHAO Yuqing
- Reviews •
- 1109 Advances in key artificial breeding technologies and sustainable development strategies for the rare and endangered medicinal plant *Fritillariae Cirrhosae Bulbus*
GAO Dan, WU Yuhua, CHEN Xiaofang, LU Yi, YANG Zemin, ZHANG Haobo, SHI Yalong, ZHANG Haitao, WANG Jialu, WANG Yonggang, YU Qiang, LI Xiwen
- 1123 Analysis of existence states of components in complex solution environment of traditional Chinese medicine and research on pharmaceutical control
XING Dantong, QIU Ranyun, SHEN Xin, ZHI Xinglei, DONG Zhengqi, LI Cunyu
- 1138 Application progress of lipidomics in study of traditional Chinese medicine for liver disease treatment
ZHANG Zheng, TANG Aicun, WEN Zishuai, XIAO Rui, WEI Yanan, FU Lei, MA Bingbing, ZHANG Chenrui, YAO Chun, WU Fangfang
- 1149 Research progress on mechanism of traditional Chinese medicine and its active compounds in treatment of urinary tract tumors by regulating ferroptosis
SUN Rui, WEI Yiju, ZHANG Huiyong, CHEN Zhihui, YU Li, WU Wei
- 1158 *Akebiae Caulis*, *Clematidis Armandii Caulis*, and *Aristolochiae Manshuriensis Caulis*: Advances in species confusion, toxicity mechanisms, and identification techniques
YANG Lu, MA Wenzhe
- 1167 Novel strategy of traditional Chinese medicine and its active components in targeting senescence of pancreatic β -cells and adipocytes for prevention and treatment of type 2 diabetes mellitus
LIU Yan, SU Linming, WANG Nannan, JIN Liang, ZHANG Fangfang
- 1179 Research progress on traditional Chinese medicine injection in treatment of chronic heart failure
MENG Lichong, WANG Ziyi, LI Xinchun, LI Lin, HU Zhixi
- 1195 Research progress on tetrahydropalmatine in treatment of cardiovascular diseases
LIU Yi, LI Jingxuan, DONG Weichong, YUAN Ye, YANG Xiuling