



ISSN 1004-8685  
QK2211169

# 中国卫生检验杂志

ZHONGGUO WEISHENG JIANYAN ZAZHI

2022年2月 第32卷 第4期

Feb.2022 Vol.32 No.4

国家卫生健康委员会主管  
中华预防医学会主办

CHINESE  
JOURNAL OF HEALTH  
LABORATORY TECHNOLOGY

CJ  
HLT

RCCSE 中国核心学术期刊  
中国生物医学源期刊  
美国化学文摘(CA)源期刊  
中国学术期刊综合评价数据库源期刊

4

2022

ISSN 1004-8685



9 7710 万份数据 24

中华预防医学会系列杂志  
SERIAL JOURNAL OF CHINESE PREVENTIVE MEDICINE ASSOCIATION

# 中国卫生检验杂志

ZHONGGUO WEISHENG JIANYAN ZAZHI

半月刊 1991 年创刊 第 32 卷 第 4 期 2022 年 2 月 25 日出版

## 主 管

国家卫生健康委员会  
100044,北京市西城区西直门外南路 1 号

## 主 办

中华预防医学会  
100021,北京市朝阳区华威里 25 号 5 层

## 名誉总编

丛玉隆

## 社长

张绍武

## 总编

徐英春

## 总编助理

张 辉

## 常务副社长

杨 师

## 副社长

张 甜 姜友珍

## 副总编 (排名按姓氏笔画排列)

李永哲 李桂英 杨 涛 应斌武 沈立松  
张克荣 张建营 林丽开 郁庆福 姜晓峰  
姚 智 徐国宾 程 伟

## 编辑部主任

杨 锋

## 编 辑

中国卫生检验杂志编委会

## 出 版

中国卫生检验杂志社  
450003 郑州市经一路 12 号 2288 信箱

## 编辑部电话

0371-65978342  
0371-65968289 (传真)

## 广告部电话

0371-65998851  
15538110112

## 发 行

国内发行:河南省邮政报刊发行局  
邮发代号:36-45  
国外发行:中国国际图书贸易集团有限公司  
(北京 399 信箱)  
国外发行代号:SM5752

## 中国标准连续出版物号

ISSN 1004-8685  
CN 41-1192/R

2022 年版权归中国卫生检验杂志社所有

## 定 价

每期 38 元

## 目 次

### 论 著

647 例毒蛇咬伤患者的血小板计数、凝血功能及微生物检测分析 .....

..... 王紫琳,齐艳,闫涛 (385)

尿中性粒细胞明胶酶相关脂质运载蛋白与狼疮性肾炎活动性的相关性

研究 ..... 龚淑文,沈水娟,王时敏,等 (389)

河南省小麦粉及其制品中脱氧雪腐镰刀菌烯醇及其衍生物的分析检测

..... 张伟,冯光伟,谭洁冰,等 (394)

气相色谱法检测食用油中的抗氧化剂叔丁基对羟基茴香醚、2,6-二叔

丁基对甲基苯酚和叔丁基对苯二酚 ..... 彭瑾,王红,周茜,等 (399)

### 化学测定方法

免疫亲和柱-高效液相色谱法测定参苓白术片中黄曲霉毒素 .....

..... 茅纯,刘宇文,郑娟,等 (402)

固相萃取-超高效液相色谱-串联质谱法快速测定饮用水中亚硝酸盐

..... 吴香伦,周华,黄琴,等 (406)

常务编委 (排名按姓氏笔画排列)

丁家华 于维森 王 旻  
王 哲 王大宁 王志玉  
王凯娟 王京宇 王棚东  
仓公敖 方赤光 毋福海  
石兴民 叶能权 白 研  
冯晓燕 毕永毅 吕玉民  
吕昌银 任一平 刘玉龙  
刘运德 刘秀梅 刘殿武  
汤乃军 祁建城 许春向  
孙长颢 孙成均 李 蓉  
李 磊 李明武 李晓虹  
杨 元 吴清平 何建国  
何晓青 何浙生 邹学贤  
宋宏彬 张 蒙 张 曦  
张万起 张贺秋 陆绍红  
陈守建 陈金东 房中则  
赵 卓 赵雁林 姜庆五  
栗文元 贾珍珍 晁福寰  
徐东群 凌文华 栾 燕  
高永清 郭云昌 黄国伟  
曹 佳 常风启 崔 巍  
崔生辉 康 辉 康维钧  
梁晓聪 韩玉霞 韩学尧  
曾现伟 溥 萍 袁志勇  
裴少军 裴晓方 廖百森  
廖兴广 阚 飒 谭晓东  
熊 英 潘 慧 冀元棠  
穆新林

青年编委 (排名按姓氏笔画排列)

丁 萍 王 硕 牛凌梅  
刘 欢 闫宏远 许宏敏  
李 阳 李 妍 李 萌  
李永新 李林秋 杨金玲  
杨胜园 邹晓莉 汪 川  
陈 曦 陈丽丽 周厚清  
孟佩俊 贺锦灿 骆春迎  
徐向东 童叶青 鲍春梅

网 址

www.zgwsjy.com.cn

投稿电子信箱

wsjyzz@126.com

印 刷

河北鑫兆源印刷有限公司

HLB 固相萃取 - 高效液相色谱法同时测定花椒粉中碱性橙 2、碱性橙 21、

碱性橙 22 染料含量 ..... 王志峰,高娃 (411)

微波消解 - 石墨炉原子吸收法对多种进口婴幼儿米粉中铅、镉的测定

分析 ..... 王松,毕容,褚添,等 (415)

3 种测定面制食品中铝含量方法的比较 .....

..... 袁鹏,张文豪,杨瑞春,等 (418)

高效液相色谱-柱后衍生法测定黄曲霉毒素的方法改进 .....

..... 李莅,黄丽珍,曾永芳 (422)

微生物检测方法

尿路感染雷氏普罗威登斯菌的临床特征及耐药性分析 .....

..... 张思琴,齐艳,闫涛 (425)

产 KPC-2 大肠埃希菌对碳青霉烯类抗菌药物耐药机制研究 .....

..... 俞丽萍,刘丽娟,苏芳,等 (430)

437 例人布鲁菌病血清学 3 种检测方法结果分析 .....

..... 宋利桃,尉瑞平,塔娜,等 (433)

临床检验

CYP2C19 基因多态性与血栓弹力图检测氯吡格雷药效相关性研究 ..... 屠鸿翔,叶银才,林超,等 (436)

多发性骨髓瘤中 RASSF2A 基因甲基化分析研究 ..... 应泳丽,陈佳琦,曲春生,等 (439)

基于机器学习的敌草快中毒诊断模型研究 ..... 吴煜,熊建华,杨金招,等 (442)

血清 microRNA - 23a 预测阻塞性睡眠呼吸暂停低通气综合征儿童发生脑损伤的研究 .....  
..... 褚旭丽,李雁,宋凤美 (445)

尿液中期因子作为膀胱癌非侵入性诊断指标的价值研究 ..... 鲍盛杰 (449)

血清骨代谢标志物在肺癌骨转移诊断、疗效评估及预后预测中的应用价值 ... 陈柏竹,毛建华,徐响瑜,等 (453)

2015 年—2020 年温州市新报告 HIV/AIDS 病例首次 CD4<sup>+</sup>T 淋巴细胞检测结果分析 .....  
..... 金茜,叶振森,赵丽娜,等 (457)

破碎红细胞计数在血栓性微血管病诊断和治疗中的意义 ..... 吴莲凤,钱菁菁,陆红 (461)

不同妊娠时期游离三碘甲腺原氨酸/游离甲状腺素比值与妊娠糖尿病发病风险的相关性研究 .....  
..... 王娅敏,钱菊芬 (465)

暴露于生物质烟雾和香烟烟雾对慢性呼吸衰竭患者炎症标志物和肺功能参数的影响 ..... 张丽娟 (469)

单核细胞/高密度脂蛋白比值在心力衰竭诊断中的应用价值 ..... 杨小利,徐宏,阮森林 (472)

调查·监测

德阳市农村供水工程出厂水微生物污染研究 ..... 张辉,郑玲,刘应才,等 (475)

|                                                        |                     |
|--------------------------------------------------------|---------------------|
| 青岛地区 2018 年—2020 年 EB 病毒 DNA 检出率分析 .....               | 董荣荣,吴箫,张宁,等 (479)   |
| 北京市通州区 2013 年—2020 年 50 岁及以上 HIV/AIDS 病例流行病学特征分析 ..... |                     |
| .....                                                  | 刘静静,戚广浩,李乐,等 (483)  |
| 濮阳市蔬菜中有机磷和氨基甲酸酯类农药残留调查分析 .....                         | 郭姣艳,孙艳波,马向东,等 (487) |
| 2018 年—2020 年九江市食品安全风险监测化学污染物结果分析 .....                | 武小宁 (491)           |
| 食品香辛料和调味品中克罗诺杆菌污染调查及分子分型研究 .....                       | 李毅,林丹,谢爱蓉,等 (495)   |
| 2016 年—2020 年郑州市市售蔬菜中农药残留监测结果分析 .....                  | 姜松强,朱慧丽,陈彦哲 (499)   |
| 市售食用植物油和婴幼儿配方奶粉中缩水甘油酯污染水平及其暴露风险评估 .....                |                     |
| .....                                                  | 樊继彩,胡琰,何华丽,等 (504)  |
| <br><b>综 述</b>                                         |                     |
| 空气中甲醛测定方法研究进展 .....                                    | 陈晓红,华友友,金米聪 (508)   |

责任编辑 杨锋      责任校对 刘迪      英文编辑 田辉

# CHINESE JOURNAL OF HEALTH LABORATORY TECHNOLOGY

Semimonthly Established in 1991, Volume 32 Number 4 February 25, 2022

**Managed by**  
National Health Commission of the People's Republic  
of China  
No. 1, Xizhimen Wainan Road, Xicheng District, Beijing, 100044

**Sponsored by**  
Chinese Preventive Medicine Association  
Floor 5, No. 25 Huaweili, Chaoyang District, Beijing, 100021

**Honorary Editor - in - chief**  
CONG Yu - long

**President**  
ZHANG Shao - wu

**Editor - in - chief**  
XU Ying - chun

**Assistant of Chief Editor**  
ZHANG Hui

**Executive Deputy President**  
YANG Shi

**Deputy President**  
ZHANG Tian, JIANG You - zhen

**Deputy Editor -in -chief( in Surname Stroke Order)**  
LI Yong - zhe, LI Gui - ying, YANG Tao, YING  
Bin - wu, SHEN Li - song, ZHANG Ke - rong,  
ZHANG Jian - ying, LIN Li - kai, YU Qing - fu,  
JIANG Xiao - feng, YAO Zhi, XU Guo - bin,  
CHENG Wei

**Director of Editorial Department**  
YANG Feng

**Edited by**  
Editorial Board of Chinese Journal of Health Labo-  
ratory Technology

**Published by**  
Editorial Department of Chinese Journal of Health  
Laboratory Technology  
Mailbox 2288, No. 12, Jingyi Road, Zhengzhou, 450003

**Editorial office telephone**  
0371 - 65978342  
0371 - 65968289 ( Fax)

**Advertising department telephone**  
0371 - 65998851  
15538110112

**Domestic Distributor**  
Henan Post Newspaper and Periodicals Bureau  
Code: 36 - 45

**Overseas Distributor**  
China International Book Trading Corporation  
( P. O. Box 399, Beijing, China)  
Code: M5752

**Website**  
www. zgwsjy. com. cn

**E - mail**  
wsjyzz@126. com

**Standard Series Number**  
ISSN 1004 - 8685  
CN 41 - 1192/R

**Copyright 2022 by Editorial Department of  
Chinese Journal of Health Laboratory Technology**

**Price**  
RMB ¥38

## CONTENTS IN BRIEF

### Original Articles

Analysis of platelet count, coagulation function and microbiological test in 647

cases of venomous snake bite ..... WANG Zi - lin, QI Yan, YAN Tao (385)

Study on relationship between urinary neutrophil gelatinase - associated lipoca-

lin and disease activity in lupus nephritis .....

..... GONG Shu - wen, SHEN Shui - juan, WANG Shi - min, *et al* (389)

Determination and analysis of deoxynivalenol and derivatives in wheat flour

and its products in Henan Province .....

..... ZHANG Wei, FENG Guang - wei, TAN Jie - bing, *et al* (394)

Detection of antioxidants, butylated hydroxyanisole, 2,6 - dit - butyl - p -

methyl phenol and tertiary butylhydroquinone in edible oil by gas chromatog-

raphy ..... PENG Jin, WANG Hong, ZHOU Qian, *et al* (399)

### Chemical Detection Method

Detection of aflatoxin in Shenlingbaizhu tablets with immunoaffinity column -

high performance liquid chromatography .....

..... MAO Chun, LIU Yu - wen, ZHENG Juan, *et al* (402)

|                                                                                                                                                                                                      |                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| <b>Rapid determination of nitrosamines in drinking water by solid phase extraction – ultra performance liquid chromatography – tandem mass spectrometry .....</b>                                    | <b>WU Xiang – lun, ZHOU Hua, HUANG Qin, <i>et al</i> (406)</b>         |
| <b>Detection of basic orange 2, basic orange 21 and basic orange 22 in prickly ash powder by both HLB solid – phase extraction and high performance liquid chromatography .....</b>                  | <b>WANG Zhi – feng, GAO Wa (411)</b>                                   |
| <b>Determination and analysis of lead and cadmium in a variety of imported rice noodles for infants and young children by micro-wave digestion – atomic absorption graphite furnace method .....</b> | <b>WANG Song, BI Rong, CHU Tian, <i>et al</i> (415)</b>                |
| <b>Comparison of three methods for determination of aluminium content in flour products .....</b>                                                                                                    | <b>YUAN Peng, ZHANG Wen – hao, YANG Rui – chun, <i>et al</i> (418)</b> |
| <b>An improved method for the determination of aflatoxins by high performance liquid chromatography and post – column derivatization .....</b>                                                       | <b>LI You, HUANG Li – zhen, ZENG Yong – fang (422)</b>                 |
| <b>Microbe Detection Method</b>                                                                                                                                                                      |                                                                        |
| <b>Clinical characteristics and drug resistance of <i>Providencia rettgeri</i> causing urinary tract infection .....</b>                                                                             | <b>ZHANG Si – qin, QI Yan, YAN Tao (425)</b>                           |
| <b>Study on drug resistance mechanism of KPC – 2 producing <i>Escherichia coli</i> to carbapenems .....</b>                                                                                          | <b>YU Li – ping, LIU Li – juan, SU Fang, <i>et al</i> (430)</b>        |
| <b>Analysis of serological detection results in 437 cases of human brucellosis by three methods .....</b>                                                                                            | <b>SONG Li – tao, YU Rui – ping, TA Na, <i>et al</i> (433)</b>         |
| <b>Clinical Laboratory Test</b>                                                                                                                                                                      |                                                                        |
| <b>Study on the correlation between CYP2C19 gene polymorphism and the efficacy of clopyrrole in the detection of thromboelastography .....</b>                                                       | <b>TU Hong – xiang, YE Yin – cai, LIN Chao, <i>et al</i> (436)</b>     |

Analysis of RASSF2A gene methylation in multiple myeloma .....  
..... YING Yong - li, CHEN Jia - qi, QU Chun - sheng, *et al* (439)

Research on diagnosis model of Diquat poisoning based on machine learning .....  
..... WU Yu, XIONG Jian - hua, YANG Jin - zhao, *et al* (442)

Research on serum microRNA - 23a in the prediction of brain injury in children with obstructive sleep apnea hypopnea  
syndrome ..... CHU Xu - li, LI Yan, SONG Feng - mei (445)

Study on the value of urinary midkine as non - invasive diagnostic index of bladder cancer ..... BAO Sheng - jie (449)

Application value of bone metabolism indexes in the diagnosis, evaluation and prognosis of bone metastasis of lung cancer ...  
..... CHEN Bai - zhu, MAO Jian - hua, XU Xiang - yu, *et al* (453)

Analysis of the first CD4<sup>+</sup>T lymphocytes test results of newly reported HIV/AIDS cases in Wenzhou City during 2015 - 2020  
..... JIN Qian, YE Zhen - miao, ZHAO Li - na, *et al* (457)

Significance of broken red blood cell count in diagnosis and treatment of thrombotic microangiopathy .....  
..... WU Lian - feng, QIAN Jing - jing, LU Hong (461)

Correlation analysis between free triiodothyronine/free thyroid hormone ratio and onset risk of gestational diabetes at different  
gestational periods ..... WANG Ya - min, QIAN Ju - fen (465)

Effects of exposure to biomass smoke and cigarette smoke on inflammatory markers and lung function parameters in patients  
with chronic respiratory failure ..... ZHANG Li - juan (469)

Diagnostic value of monocyte to high - density lipoprotein ratio in diagnosis of patients with heart failure .....  
..... YANG Xiao - li, XU Hong, RUAN Sen - lin (472)

Investigation and Monitoring

Study on microbial contamination of effluent from rural waterworks in Deyang City .....  
..... ZHANG Hui, ZHENG Ling, LIU Ying - cai, *et al* (475)

Analysis of detection rate of EPstein - Barr virus DNA from 2018 to 2020 in Qingdao .....  
..... DONG Rong - rong, WU Xiao, ZHANG Ning, *et al* (479)

Analysis of epidemiological characteristics of HIV/AIDS cases aged 50 and above from 2013 to 2020 in Tongzhou District, Bei-  
jing City ..... LIU Jing - jing, QI Guang - hao, LI Le, *et al* (483)

Investigation and analysis of organophosphorus and carbamate pesticide residues in vegetables from Puyang City .....  
..... GUO Jiao - yan, SUN Yan - bo, MA Xiang - dong, *et al* (487)

Analysis of the risk monitoring results of chemical pollutants in food in Jiujiang City from 2018 to 2020 .....  
..... WU Xiao - ning (491)

Contamination investigation and molecular typing analysis of *Cronobacter* in food spices and condiments .....  
..... LI Yi, LIN Dan, XIE Ai - rong, *et al* (495)

Analysis of monitoring results of pesticide residues in vegetables sold in Zhengzhou City from 2016 to 2020 .....  
..... JIANG Song - qiang, ZHU Hui - li, CHEN Yan - zhe (499)

Contamination detection and exposure risk assessment of glycidyl esters in edible vegetable oils and infant formula milk powder  
..... FAN Ji - cai, HU Yan, HE Hua - li, *et al* (504)

Editor in Charge YANG Feng      Proofreader LIU Di      English Editor TIAN Hui

垃圾分一分 环境美十分  
循环再利用 资源尽其用

