



ISSN 1004-8685
CN 41-1192/R

中国卫生检验杂志

ZHONGGUO WEISHENG JIANYAN ZAZHI

2014年9月 第24卷 第18期

Sep.2014 Vol.24 No.18

国家卫生和计划生育委员会主管
中华预防医学会主办

CHINESE
JOURNAL OF HEALTH
LABORATORY TECHNOLOGY

CJ
HLT

中文核心期刊

中国科技论文统计源期刊(中国科技核心期刊)

RCCSE 中国核心学术期刊(A-)

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

18

2014

ISSN 1004-8685



9 771004 868149

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 24 卷 第 18 期 2014 年 9 月 25 日出版

主 管

中华人民共和国国家卫生和计划生育委员会
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,北京市朝阳区劲松东口华泰饭店

社长总编

张绍武

副社长

张 甜 姜友珍

副总编

郁庆福 李桂英 张克荣

编辑部主任

杨 锋

责任编辑

黄霁秋 白 云

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

编辑部电话

0371 - 65978342
0371 - 65968289(传真)

广告部电话

0371 - 65998851
15538110112

出版日期

2014 年 9 月 25 日

发 行

国内发行:北京市邮政局
邮发代号:80 - 152
国外发行:中国国际图书贸易总公司
(北京 399 信箱)
国外发行代号:M5752

中国标准连续出版物号

ISSN1004 - 8685
CN41 - 1192/R

广告经营许可证号

4100004000124

2014 年版权归中国卫生检验杂志社所有

定 价

每期 21.5 元

目 次

论 著

氘代同位素稀释液相色谱-质谱法快速检测动物组织中 11 种 β_2 兴奋

剂 贾玉珠,白艳艳,陈丽惠,等 (2585)

聚苯乙烯制品中苯乙烯单体残留量检验方法及 GC-MS 确证技术的建

立 方从容,鲁杰,杨杰,等 (2589)

工作场所空气中 19 种挥发性有机物的溶剂解吸-气相色谱测定法 ...

..... 朱海豹,钱亚玲,唐红芳,等 (2592)

河南遂平帕氏按蚊习性及其传疟能量的研究

..... 王昊,陈王征,姚君平,等 (2596)

化学测定方法

水中草甘膦的柱前衍生-固相萃取-高效液相色谱荧光法测定

..... 马建明,龚文杰,邹晨阳,等 (2599)

液相色谱串联质谱法直接进样测定饮用水中的百草枯

..... 郑和辉,卞战强,田向红,等 (2602)

吹扫捕集-气质联用技术测定饮用水中 55 种挥发性有机物

..... 周华,张蕴,金莞尔,等 (2604)

SPE-GC/MS 法测定血液和尿液中的溴敌隆

..... 刘国中,鹿尘,张正尧 (2609)

本刊编委 (排名不分先后)

李 蓉 溥 萍 何浙生 丁家华
陈守建 叶能权 贾珍珍 何晓青
何建国 许春向 刘秀梅 王志玉
冀元棠 毕永毅 高永清 晁福宸
邹学贤 刘殿武 仓公敖 吕昌银
方赤光 孙成均 栗文元 姜庆五
凌文华 韩玉霞 康维钧 曹 佳
黄国伟 王大宁 窦志勇 孙长颢
廖百森 赵 卓 杨 元 李晓虹
张 曦 谭晓东 裴晓芳 任一平
徐东群 栾 燕 潘 慧 王树东
祁建城 崔 巍 裴少军 吴清平
曾现伟 康 辉 阚 飙 王京宇
曹润武 王 哲 宋宏彬 熊 英

Editorial Board Member

Li Rong, Pu Ping, He Zhesheng, Ding Jiahua,
Chen Shoujian, Ye Nengquan, Jia Zhenzhen, He
Xiaoqing, Hu Jianguo, Xu Chunxiang, Liu Xi-
umei, Wang Zhiyu, Ji Yuantang, Bi Yongyi, Gao
Yongqing, Chao Fuhuan, Zou Xuexian, Liu Dian-
wu, Cang Gongao, Lv Changyin, Fang Chiguang,
Sun Chengjun, Li Wenyuan, Jiang Qingwu, Ling
Wenhua, Han Yuxia, Kang Weijun, Cao Jia,
Huang Guowei, Wang Daning, Dou Zhiyong, Sun
Changhao, Liao Baisen, Zhao Zhuo, Yang Yuan, Li
Xiaohong, Zhang Xi, Tan Xiaodong, Pei Xiaofang,
Ren Yiping, Xu Dongqun, Luan Yan, Pan Hui,
Wang Xudong, Qi Jiancheng, Cui Wei, Pei Shao-
jun, Wu Qingping, Zeng Xianwei, Kang Hui, Kan
Biao, Wang Jingyu, Cao Runwu, Wang Zhe,
Song Hongbin, Xiong Ying

网 址

www.cdc999.com

投稿电子信箱

wsjyzz@126.com

印 刷

鑫宏源印刷包装有限责任公司

来稿咨询电话

010-84030401

毛细管柱气相色谱法同时测定面制品中丙酸、山梨酸、苯甲酸及脱氢乙酸

..... 杨晓凤,雷绍荣,杨树萍 (2611)

ICP-MS法同时测定生活饮用水的19种元素.....

..... 刘俩燕,杨敏,黄碧兰 (2614)

固相萃取、同位素稀释气相色谱-质谱法测定食用油中23种邻苯二甲酸

酯 李凤华,姜大峰,李蔚,等 (2617)

基于Cu²⁺和碳纳米管纳米复合物的过氧化氢生物传感器测定过氧化氢

..... 白祖海,张瑾,吾尔叶提 (2621)

浊点萃取-石墨炉原子吸收法测定水中的钒 ... 李韬,曹丽军 (2625)

QuEChERS/快速溶剂萃取-气相色谱法测定尿中痕量毒鼠强

..... 陈京闽,王生英,秦迎旭 (2627)

地沟油中辣椒素的检测方法研究 ... 赵灿方,邓志芬,李琳,等 (2630)

浊点萃取-火焰原子吸收光谱法测定食品接触塑料制品中痕量铅

..... 黄海霞,罗蓉,谭雪晴 (2634)

实验研究

多环芳烃暴露与胎儿出生缺陷的相关性研究 ... 王悦,胡文胜 (2637)

Beagle犬室性心动过速动物模型的建立

..... 李进,郑程,李岳春,等 (2640)

不同处理和提取方式对桑叶多糖提取影响的研究

..... 骆华星,陈建国,包国良,等 (2644)

食品与药品检验

分散固相萃取-超快速液相色谱-串联质谱法同时测定中药核桃仁中的

4种黄曲霉毒素 李小平,赵永纲,陈晓红,等 (2647)

多功能柱净化-柱前衍生-HPLC 荧光法测定坚果中的黄曲霉毒素	秦国富,陈艳,何丰瑞,等	(2651)
高效液相色谱-串联质谱法同时测定中成药中 5 种真菌毒素	邓鸣,宾春燕,朱斌,等	(2654)
HPLC 法测定保健食品中 4 种菊花提取物功效成分的研究	钮正睿,曹进,刘洪宇,等	(2657)
广西米面制品蜡样芽胞杆菌污染分布及耐药性研究	诸葛石养,苏爱荣,李秀桂	(2661)
高效液相色谱法测定食品中的铝色淀	孙文芳,黄薇,赵士权,等	(2663)

微生物检测方法

柯桥区 2012 年-2013 年手足口病病原学分析	裘锋平,蒋颖颖,陈国强	(2665)
婴幼儿腹泻粪便中轮状病毒和腺病毒检出分析	王国英	(2668)

临床检验

血清基质金属蛋白酶-9、同型半胱氨酸水平与脑梗死关系的研究	关小勇,闭雄杰,覃莲,等	(2670)
前 S1 蛋白与 HBV 血清标志物检测结果对比研究	陈峰,徐国新,袁晓薇,等	(2673)
某综合医院 1 620 例梅毒感染者检出情况分析	魏娟,程江,张丽翠	(2675)
血清甲状腺素、铜蓝蛋白、丙氨酸氨基转移酶和凝血酶原时间与病毒性肝炎肝损害的相关性及其临床意义	朱远航,陈忠城,潘顺文,等	(2678)
2 种方法对淋巴细胞转化试验结果的影响	郝燕	(2681)

分子诊断与基因检测

两株 W135 群脑膜炎奈瑟菌的分子特征分析	师舞阳,吴灿权,吴衍恒,等	(2683)
上海市松江区手足口病的病原学及序列特征的研究	陆利君,唐益明,王嘉瑜,等	(2687)
2013 年北京市大兴区麻疹检测分析	周丽敏,梁赢	(2690)
β -半乳糖凝集素 3 和生物钟基因 <i>PER2</i> 在非小细胞肺癌中的表达及其临床意义	张艳红,赵桂凤,尹奎夫,等	(2692)

监测分析

市售添加明胶的食品中铬含量的监测结果及分析	白艳艳,周娜,潘秋仁,等	(2695)
-----------------------------	--------------	--------

贵阳市西郊水厂所供管网末梢水重金属污染物潜在健康风险评价	程雅柔, 秦好丽	(2697)
广州市水产品中海洋生物毒素急性膳食暴露风险评估	于鸿, 李晓晶, 刘苗, 等	(2702)

调查报告

福建省藻类中铝含量的调查与分析	王丹红, 蔡春平, 陈祥明, 等	(2705)
南京市售婴幼儿食品中重金属污染状况的调查分析	范小飞, 周云, 虞建宏, 等	(2708)
鲁甸县农村旱地土壤中铅、镉及蛔虫卵污染调查与监测	马世表, 马玉凤	(2712)
POEMS 综合征胸腔积液细胞学及生化学特点分析	朱卫国, 李源杰, 李剑, 等	(2716)

教学与实验室管理

水中铅、锌、镉和汞检测能力验证结果分析	田艳, 陈蓓, 蒋璟, 等	(2719)
实验室管理体系记录系统的建立与档案化管理	夏铁瑛, 张丽, 王海英, 等	(2722)
实验室资质认定复评审(扩项)过程和体会	李雪, 吕仕银, 唐霞	(2725)
浅谈如何做好疾病预防控制机构实验室建设与管理	唐士涛	(2727)

经验交流

不同条件滴定法对糕点中酸价及过氧化值测定影响因素的评价	黎元扶, 郑贵专	(2729)
仿瓷餐具中甲醛单体迁移量的测定方法探讨	庄景新, 乔庆东, 吴云钊	(2731)
广州市疾控中心实验室能力验证的实践与体会	聂木海, 何晖, 黄冰, 等	(2733)

综 述

人偏肺病毒实验室检测方法及应用进展	章国宝, 雷永良	(2734)
-------------------------	----------	--------

CHINESE JOURNAL OF HEALTH LABORATORY TECHNOLOGY

Semimonthly Established in 1991, Volume 24 Number 18 September 25, 2014

Managed by

National Health and Family Planning Commission
of the People's Republic of China
No. 1, Xizhimen Wainan Road, Xicheng District, Beijing, 100044

Sponsored by

Chinese Preventive Medicine Association
Hua Thai Hotel, East Exit of Jinsong Road, Chaoyang District, Bei-
jing, 100021

Editor in Chief

Zhang Shaowu

Deputy Chairman

Zhang Tian, Jiang Youzhen

Associate Editor in Chief

Yu Qingfu, Li Guiying, Zhang Kerong

Director of Editorial Department

Yang Feng

Editor in Charge

Huang Jiqiu, Bai Yun

Edited by

Editorial Board of Chinese Journal of Health Labo-
ratory Technology

Published by

Editorial Department of Chinese Journal of Health
Laboratory Technology
No. 12, Jingri Road, Zhengzhou, 450003

Editorial office telephone

0371 - 65978342
0371 - 65968289 (Fax)

Advertising department telephone

0371 - 65998851
15538110112

Publication Date

September 25, 2014

Domestic Distributor

Beijing Post Bureau
Code No: 80 - 152

Overseas Distributor

China International Book Trading Corporation
(P. O. Box 399, Beijing, China)
Code No: M5752

Website

www. cdc999. com

E - mail

wsjyzz@ 126. com

Standard Series Number

ISSN1004 - 8685
CN41 - 1192/R

Advertising Management License

4100004000124

Copyright 2014 by Editorial Department of
Chinese Journal of Health Laboratory Technology

Price

RMB ¥21.5

CONTENTS IN BRIEF

Original Articles

**Rapid determination and confirmation of 11 β_2 - agonists in animal tissues by
deuterium isotope dilution liquid chromatography - mass spectrometry**

..... JIA Yu - zhu, BAI Yan - yan, CHEN Li - hui, *et al* (2585)

**Method for determination of residual styrene monomer in polystyrene products
and the establishment of GC - MS confirmation technology**

..... FANG Cong - rong, LU Jie, YANG Jie, *et al* (2589)

**Simultaneous determination of 19 volatile organic compounds in workplace air
by solvent desorption - gas chromatography**

..... ZHU Hai - bao, QIAN Ya - ling, TANG Hong - fang, *et al* (2592)

**Survey and analysis of the biological habits and malaria transmitting ability of A-
nopheles pattoni in Suiping Henan province**

..... WANG Hao, CHEN Wang - cheng, YAO Jun - ping, *et al* (2596)

Chemical Detection Method

**Determination of glyphosate in water by high - performance liquid chromatog-
raphy - fluorescence detection with pre - column derivatization and solid -
phase extraction**

..... MA Jian - ming, GONG Wen - jie, WU Chen - yang, *et al* (2599)

**Direct sampling determination of paraquat in drinking water by liquid chroma-
tography electrospray ionization tandem mass spectrometry**

... ZHENG He - hui, BIAN Zhan - qiang, TIAN Xiang - hong, *et al* (2602)

**Determination of 55 volatile organic compounds in drinking water by gas chro-
matography - mass spectrometry with puffing and trapping method**

..... ZHOU Hua, ZHANG Yun, JING Wan - er, *et al* (2604)

- Determination of bromadiolone in blood and urine by SPE – GC/MS**
 LIU Guo – zhong, LU Chen, ZHANG Zheng – yao (2609)
- Simultaneous determination of propanoic acid, sorbic acid, benzoic acid and dehydroacetic acid in flour products by capillary gas chromatography** YANG Xiao – feng, LEI Shao – rong, YANG Shu – ping (2611)
- Simultaneous determination of 19 elements in drinking water by ICP – MS method**
 LIU Lia – yan, YANG Min, HUANG Bi – lan (2614)
- Simultaneous determination of 23 phthalates in edible oil by SPE – stable isotope dilution gas chromatography – mass spectrometry** LI Feng – hua, JIANG Da – feng, LI Wei, *et al* (2617)
- Determination of hydrogen peroxide with hydrogen peroxide biosensor based on Cu²⁺/carbon nanotubes composite**
 BAI Zu – hai, ZHANG Jin, WU Er – ye – ti (2621)
- Determination of vanadium in water by cloud point extraction – graphite furnace atomic absorption spectrometry (GFAAS)**
 LI Tao, CAO Li – jun (2625)
- Determination of tetramine in urine by QuEChERS/rapid solvent extraction gas chromatography**
 CHEN Jing – min, WANG Sheng – ying, QIN Ying – xu (2627)
- Research on detection method of capsaicinoids in hogwash oil** ZHAO Can – fang, DENG Zhi – fen, LI Lin, *et al* (2630)
- Determination of trace lead in food contact plastic products by cloud point extraction – atomic absorption spectrometry**
 HUANG Hai – xia, LUO Rong, TAN Xue – qing (2634)

Experimental Study

- Relationship between PAHs exposure and fetal abnormalities** WANG Yue, HU Wen – sheng (2637)
- Establishing of ventricular tachycardia animal model in beagle dog** LI Jin, ZHENG Cheng, LI Yue – chun, *et al* (2640)
- Study on different treatment methods and extraction methods on the extraction of polysaccharides from mulberry leaves**
 LUO Hua – xing, CHEN Jian – guo, BAO Guo – liang, *et al* (2644)

Food and Drug Inspection

- Simultaneous determination of four aflatoxins in walnut kernel using dispersive solid – phase extraction combined with ultra fast liquid chromatography – tandem mass spectrometry** LI Xiao – ping, ZHAO Yong – gang, CHEN Xiao – hong, *et al* (2647)
- Determination aflatoxins in nuts by multifunctional column purification – pre – column derivatization – HPLC – FLD**
 QIN Guo – fu, CHEN Yan, HE Feng – rui, *et al* (2651)

Simultaneous determination of 5 mycotoxins in Chinese patent medicines by high performance liquid chromatography – tandem mass spectrometry	DENG Ming, BIN Chun – yan, ZHU Bin, <i>et al</i> (2654)
Determination of four functional components in health food with <i>Chrysanthemum morifolium</i> extract by high performance liquid chromatography	NIU Zheng – rui, CAO Jin, LIU Hong – yu, <i>et al</i> (2657)
Research on the contamination distribution and drug resistance of bacillus cereus in rice and wheaten food in Guangxi	ZHUGE Shi – yang, SU Ai – rong, LI Xiu – gui (2661)
Determination of aluminum lakes in food by high performance liquid chromatography	SUN Wen – fang, HUANG Wei, ZHAO Shi – quan, <i>et al</i> (2663)
Microbe Detection Method	
Etiological analysis of HFMD in Keqiao from 2012 to 2013	QIU Feng – ping, JIANG Ying – ying, CHEN Guo – qiang (2665)
Analysis of rotavirus and adenovirus detected from feces of infants with diarrhea	WANG Guo – ying (2668)
Clinical Laboratory Test	
Research on the relationship of matrix metalloproteinase –9, homocysteine levels and cerebral infarction	GUAN Xiao – yong, BI Xiong – jie, QIN Lian, <i>et al</i> (2670)
Comparative study of detection results of Pre – S1 protein and HBV serum marker	CHEN Feng, XU Guo – xin, YUAN Xiao – wei, <i>et al</i> (2673)
Analysis on the detection of 1 620 syphilis infection cases of a general hospital	WEI Juan, CHENG Jiang, ZHANG Li – cui (2675)
The clinical significance of the correlation between serum thyroxine, ceruloplasmin, l – alanine aminotransferase and prothrombin time and damage of viral hepatitis	ZHU Yuan – hang, CHEN Zhong – cheng, PAN Shun – wen, <i>et al</i> (2678)
Effect on experimental results of lymphocyte transformation by two methods	HAO Yan (2681)
Molecular Diagnosis and Gene Detection	
Analysis the molecular characteristics of two neisseria meningitidis strains in W135 groups	SHI Wu – yang, WU Can – quan, WU Yan – heng, <i>et al</i> (2683)
Study HFMD pathogenic types and sequences characteristics in Songjiang district of Shanghai	LU Li – jun, TANG Yi – ming, WANG Jia – yu, <i>et al</i> (2687)

Detection and analysis of measles in Daxing District, Beijing,2013 ZHOU Li – min,LIANG Ying (2690)

The expression and clinical significance of β – Galactose lectin 3 and clock genes *PER2* in non – small cell lung cancer
..... ZHANG Yan – hong, ZHAO Gui – feng, YIN Kui – fu, *et al* (2692)

Monitoring and Analysis

Analysis of chromium content in commercial foods containing gelatin
..... BAI Yan – yan, ZHOU Na, PAN Qiu – ren, *et al* (2695)

The potential health risk assessment on heavy metal pollution in water pipe network peripheral of western suburbs water plant
of Guiyang CHENG Ya – rou, QIN Hao – li (2697)

Assessment of marine biotoxins acute dietary exposure risk in marine products of Guangzhou
..... YU Hong, LI Xiao – jing, LIU Miao, *et al* (2702)

Investigation Report

Survey and analysis of the aluminum content in algae in Fujian province
..... WANG Dan – hong, CAI Chun – ping, CHEN Xiang – ming, *et al* (2705)

Survey and analysis of heavy metals contaminant in infant food in Nanjing
..... FAN Xiao – fei, ZHOU Yun, YU Jian – hong, *et al* (2708)

Survey and monitoring of lead and cadmium and ascaris eggs of dry land in Ludian county
..... MA Shi – biao, MA Yu – feng (2712)

Analysisof the cytological and biochemical characteristics of pleural effusion in patients with POEMS syndrome
..... ZHU Wei – guo, LI Yuan – jie, LI Jian, *et al* (2716)



九强生物



我们的实力:



863计划

自2011年起,九强生物成为“863计划”《体外诊断技术产品开发重大项目》“心脑血管慢性损伤及急救指标等体外诊断试剂的研制”项目成员之一。

2014年,九强生物牵头863计划《人体营养素检测关键技术与产品开发》主题项目“人体维生素与抗氧化能力等检测系统及配套试剂的研发”课题。
课题编号:2014AA022304。



CysC国家标准物质制备

九强生物实验室参与CysC国家标准物质研制工作:

- 承担标准物质制备工作
- 参与标准物质定值工作
- 完成标准物质互换性测试



连续九年上榜福布斯

2006年-2014年,九强生物连续九年被评为“福布斯中国潜力企业”。



彩虹计划
Customer Requirement Planning
客户关怀计划



网络
信息平台



微信
服务平台



专属
宣传彩页

追求卓越 成就未来

北京九强生物技术股份有限公司

金斯尔·九强生物旗下体外诊断试剂品牌

免费咨询电话: 800 810 0197/1373

我们汇聚力量,为您私人定制。