



Q K 2 1 2 7 0 1 9

3

2021

2021年 第37卷 第3期

Vol.37 No.3 2021

病毒学报

B I N G D U X U E B A O

CHINESE JOURNAL OF VIROLOGY



中国微生物学会
Chinese Society for Microbiology

目 次

新型冠状病毒研究专题论著

2021年2月深圳市六株境外输入的SARS-CoV-2基因组特征分析

.....陈龙,房师松,梅树江,冯铁建,邹旋,彭博,孟君,孙颖,吕子全,许文波,赵翔,魏欣仪,李诗敏,朱灿,卢清菊,肖晓亮,夏俊杰,张仁利,何雅青(515)

丽水市早期新冠肺炎无症状感染者SARS-CoV-2全基因组序列分析王晓光,胡志勇,叶碧峰,叶灵,李羽敏,季巧英(527)

新型冠状病毒南非B.1.351变异株的分离与分子特征分析

.....郑焕英,张欢,陆靖,欧阳方竹,邹丽容,胡瑶,李振翠,黎薇,李柏生,何剑锋,柯昌文,邓小玲(534)

流感病毒研究论著

2019年不同类型流感病毒在佛山地区流行特征分析陈绍森,胡佩村,郑伟强,古勤清,张海燕,邹林(541)

副流感病毒IgM抗体AlphaLISA快速检测方法建立陈莹,荆红波,郑玉玲,张力文,律清宇,姜永强(548)

人类病毒研究论著

2017-2020年河南省漯河市呼吸道合胞病毒流行特征研究

.....谢智博,段晓健,郭晋源,徐瑾,宋金华,宋晶晶,夏百成,王慧玲,崔爱利,朱贞,毛乃颖,许文波,张燕(554)

呼吸道合胞病毒IgM抗体AlphaLISA快速检测方法的建立陈莹,荆红波,郑玉玲,张力文,律清宇,姜永强(561)

右美托咪定对HIV-1包膜糖蛋白gp120诱导大鼠学习记忆障碍的改善作用及机制

.....董芳娟,赵瑞丽,张煜,郝宇卉,魏增云,皇甫亮(567)

基于PI3K/PKB通路研究EGCG对CVB3感染致病毒性心肌炎小鼠细胞凋亡的影响张思思,谢达奇,胡文奕,邓媛(575)

26例病毒性脑(膜)炎儿童脑脊液病原学特征研究朱以敏,刘静,刘丽丽,李意杰,阙慧,李亚欣,张文,陆国平,郑英杰(583)

安徽北部地区恶性肿瘤人群卡波氏肉瘤相关疱疹病毒血清学分析张莹,方圆,文志,林康,李文丽,周畅,柳燕,王林定(591)

辽宁省首次从急性弛缓性麻痹(AFP)病例分离的一株人腺病毒1型重组株的全基因组序列特征分析

.....邵玉平,王作麟,任丽萍,陈涛,方兴,任毅,郝爽,王文思,姚文清(596)

一种简单有效的基于阳离子交换层析的重组腺相关病毒纯化方法周豪杰,王晨旭,马强,李媛,高传玉,张守涛(605)

重组HIV-AEgp145和SIV-envT基因的rAAV8在小鼠体内的免疫原性研究

.....何小周,杨婧,李红霞,郝彦哲,冯霞,马学军(613)

CVB3诱导的急性心肌炎C57BL/6小鼠模型转录组分析刘宓,高荣保,韩俊(621)

咸阳市2016—2019年手足口病病原学检测分析陈斌,张俊君,秦龙,王士峰,郭祎阁(633)

2020年我国风疹流行病学和病毒基因特征分析

.....刘莹,崔爱利,郭晋源,邓丽丽,范丽霞,魏欢,刘李,丛艳丽,唐小敏,雷玥,周淑洁,彭晓放,周珺,冯燕,张燕,毛乃颖,许文波,朱贞(638)

动物病毒研究论著

携带高滴度猪瘟病毒C株猪睾丸细胞株的建立及蛋白质组学分析

.....张智慧,魏行全,谷玲军,张韵,孙世琪,尹双辉,郭慧琛(648)

- 禽冠状病毒组织嗜性和固有免疫应答差异研究 李雪妍,徐双,朱瑾彦,阮文科(658)
CNTFR α 在ALV自然重组FJ15HT0株感染宿主过程中的表达 龚祖新,吴溪滨,林建平,吴异健,吴晓平(667)

昆虫病毒研究论著

- 蜜蜂克什米尔病毒实时荧光RT-PCR检测方法的建立和评价 张体银,邵碧英,林素洁,郑腾,王武军,张志灯(678)
蜜蜂残翼病毒TaqMan-MGB探针荧光定量RT-PCR检测方法的建立 王琛,马跃宇,黄思超,孙莉,李明,韩喜彬,高志峰,费东亮,马鸣潇(686)

新型冠状病毒研究专题综述

- 全球新型冠状病毒变异株研究进展 冯晔因,宋洋,王世文,陈操,许文波(695)
免疫层析法检测2019新型冠状病毒抗体假阳性的原因分析和对策 刘奕彦,叶青(712)

综述

- 非洲猪瘟病毒多样性 朱利敏,邹兴启,赵启祖(719)
FoxO1在病毒感染和炎症发生中的作用 张穗穗,岳岩磊,马振玲,姚文,杨国庆,刘薇(726)
人腺病毒流行病学研究进展 杨传宇,赵林清(732)
宫颈人乳头瘤病毒感染治疗方法研究进展 徐帅师,聂文佳,张咏梅(740)
线粒体自噬进程及其受病毒感染的影响 聂欢欢,邱坚发,张学艳,王燕(748)
高级别生物安全实验室降低高致病性病毒实验生物安全防护水平的科研策略 赵焱(755)
人肠道病毒71型基因重组的研究进展 张海陆,宋绍霞,温红玲(758)
甲基化修饰对病毒潜伏感染的调控作用研究进展 孙微微,贾怀杰,景忠忠,陈思睿,吕彦蓉,刘荣,王晓霞(764)

信息

- 《病毒学报》获得中国精品科技期刊顶尖学术论文(F5000)项目来源期刊证书(2017~2020年)(封二)
《病毒学报》获得中国精品科技期刊证书(2008年)(封三)
《病毒学报》入编《中文核心期刊要目总览》2020年版(第9版)之基础医学类核心期刊(插页)
《病毒学报》获得中国科技核心期刊收录证书(2020年)(插页)
《病毒学报》获得RCCSE中国核心学术期刊证书(2020年)(插页)
《病毒学报》获得中国科学引文数据(CSCD)核心来源期刊证书(2021~2022年)(插页)
2020年中国微生物学会及各专业委员会学术活动计划表(插页)
《病毒学报》征稿简则(2018年12月25日修订)(插页)
《病毒学报》第六届编辑委员会成员名单(插页)

期刊基本参数:CN-11-1865/R * 1985 * b * A4 * 256 * zh * P * 128 * 1000 * 32 * 2021-03

执行主编:王玉梅 责任编辑:王玉梅 助理执行编辑:胡大伟

专业英文审校:张智清 出版英文审校:王玉梅

CONTENTS

Novel Coronavirus Articles

Genome Characterization of Six Imported SARS-CoV-2 Strains in Shenzhen, China, February 2021

.....*CHEN Long, FANG Shisong, MEI Shuijiang, FENG Tiejian, ZOU Xuan, PENG Bo, MENG Jun, SUN Ying, LYU Ziquan, XU Wenbo, ZHAO Xiang, WEI Xinyi, LI Shimin, ZHU Can, LU Qingju, XIAO Xiaoliang, XIA Junjie, ZHANG Renli, HE Yaqing* (526)

Whole-genome Sequencing of SARS-CoV-2 from An Asymptomatic Patient with COVID-19 in Lishui, China

.....*WANG Xiaoguang, HU Zhiyong, YE Bifeng, YE Ling, LI Yumin, JI Qiaoying* (533)

Isolation and Characterization of "South African" SARS-CoV-2 Strain B.1.351

.....*ZHENG Huanying, ZHANG Huan, LU Jing, OUYANG Fangzhu, ZHOU Lirong, HU Yao, LI Zhencui, LI Wei, LI Baisheng, HE Jianfeng, KE Changwen, DENG Xiaoling* (540)

Influenza Virus Articles

Epidemic Characteristics of Different Influenza Viruses in Foshan, China, in 2019

.....*CHEN Shaosen, HU Peicun, ZHENG Weiqiang, GU Xunqing, ZHANG Haiyang, ZOU Lin* (547)

Establishment of a Method for Rapid Detection of IgM Antibody Against the Parainfluenza Virus by AlphaLISA Immunoassay

.....*CHEN Xuan, JING Hongbo, ZHENG Yuling, ZHANG Liwen, LYU Qingyu, JIANG Yongqiang* (553)

Human Virus Articles

Epidemiological Characteristics of the Respiratory Syncytial Virus Infection in Luohu City, Henan Province, China, 2017–2020

.....*XIE Zhibo, DUAN Xiaojian, GUO Jinyuan, XU Jin, SONG Jinhua, SONG Jingjing, XIA Baicheng, WANG Huiling, CUI Aili, ZHU Zhen, MAO Naiying, XU Wenbo, ZHANG Yan* (560)

Establishment of A Method for Rapid Detection of IgM Antibody Against the Respiratory Syncytial Virus by AlphaLISA Immunoassay

.....*CHEN Xuan, JING Hongbo, ZHENG Yuling, ZHANG Liwen, LYU Qingyu, JIANG Yongqiang* (566)

Effect and Mechanism of Dexmedetomidine on HIV-1-coated Glycoprotein Gp120 induced Learning and Memory Impairment of Rats

.....*DONG Fangjuan, ZHAO Ruili, ZHANG Yu, HAO Yuhui, WEI Zengyun, HUANG Fuliang* (574)

Effect of EGCG on Apoptosis in Mice with CVB3 Infection-induced Viral Myocarditis Based on the PI3K/PKB Pathway

.....*ZHAGN Sisi, XIE Daqi, HU Wenyi, DENG Yuan* (582)

Pathogenic Characteristics of Cerebrospinal Fluid Among 26 Children with Viral Encephalitis and Meningitis

.....*ZHU Yimin, LIU Jing, LIU Lili, LI Yijie, KAN Hui, LI Yaxin, ZHANG Wen, LU Guoping, ZHENG Yingjie* (590)

Seroprevalence of Kaposi's Sarcoma-associated Herpesvirus in Patients with Malignant Tumors in Northern Anhui, China

.....*ZHANG Ying, FANG Yuan, WEN Zhi, LIN Kang, LI Wenli, ZHOU Chang, LIU Yan, WANG Linding* (595)

Full-length Genome Analysis of The Recombinant Human Mastadenovirus Type-1 Strain Isolated from Patients with Acute Flaccid Paralysis (AFP) in Liaoning Province, China

.....*SHAO Yuping, WANG Zuoshu, REN Liping, CHEN Tao, FANG Xing, REN Yi, HAO Shuang, WANG Wensi, YAO Wenqing* (604)

A Simple and Effective Purification Method of Recombinant Adeno-associated Virus Based on Cation Exchange Chromatography

.....*ZHOU Haojie, WANG Chenxu, MA Qiang, LI Yuan, GAO Chuanyu, ZHANG Shoutao* (612)

Immunogenicity of Recombinant Adeno-associated Virus Type 8 Expressing HIV-AEgp145 or SIV-envT Genes in Mice

.....*HE Xiaozhou, YANG Jing, LI Hongxia, HAO Yanzhe, FENG Xia, MA Xuejun* (620)

- Transcriptomic Analysis of CVB3 Induced Acute Viral Myocarditis in C57BL/6 Mouse Model *LIU Mi, CAO Rongbao, HAN Jun* (632)
Etiology and Characteristics of Hand, Foot and Mouth Disease in Xianyang City, China, 2016–2019 *CHEN Bin, ZHANG Junjun, QIN Long, WANG Shifeng, GUO Yige* (637)
Epidemiology and Genetic Characteristics of Rubella Virus Circulating in China in 2020 *LIU Ying, CUI Aili, GUO Jinyuan, DENG Lili, FAN Lixia, WEI Huan, LIU Li, CONG Yanli, TANG Xiaomin, LEI Yue, ZHOU Shujie, PENG Xiaofang, ZHOU Jun, FENG Yan, ZHANG Yan, MAO Naiying, XU Wenbo, ZHU Zhen* (647)

Animal Virus Articles

- Establishment and Proteomics Analysis of Porcine Testis Cell Line Carrying Strain C of Swine Fever Virus with High-Titer *ZHANG Zhizhi, WEI Yanquan, GU Lingjun, ZHANG Yun, SUN Shiqi, YIN Shuanghui, GUO Huichen* (657)
Study on the Differences in Tissue Tropism and Innate Immune Response with different Avian Coronavirus strains *LI Xueyan, XU Shuang, ZHU Jinyan, RUAN Wenke* (666)
Host CNTFR α Expression During Infection by the Natural Recombinant FJ15HT0 Strain of the ALV *GONG Zuxin, WU Binbin, LIN Jianping, WU Yijian, WU Xiaoping* (677)

Insect Virus Articles

- Development and Evaluation of the Detection Method of Real-time RT-PCR Assays for Kashmir Bee Virus *ZHANG Tiyan, SHAO Biying, LIN Sujie, ZHENG Teng, WANG Wujun, ZHANG Zhideng* (685)
Development of a Quantitative PCR Method Using a TaqMan™-MGB Fluorescent Probe for Detection of the Deformed Wing Virus *WANG Chen, MA Yueyu, HUANG Sichao, SUN Li, LI Ming, HAN Xibin, GAO Zhifeng, FEI Dongliang, MA Mingxiao* (694)

Review of Literatures of Novel Coronavirus

- Research Advances in Global SARS-CoV-2 Variants *FENG Yenan, SONG Yang, WANG Shiwen, CHEN Cao, XU Wenbo* (711)
Cause Analysis and Countermeasures of False Positive Detection of 2019 Novel Coronavirus Antibody by Immunochromatography *LIU Yiyian, YE Qing* (718)

Review of Literatures

- Diversity of African Swine Fever Virus *ZHU Limin, ZOU Xingqi, ZHAO Qizhu* (725)
The Role of FoxO1 in Viral Infection and Inflammation *ZHANG Wenwen, YUE Yanlei, MA Zhenling, YAO Wen, YANG Guoqing, LIU Wei* (731)
Progress in Epidemiological Study of Human Adenovirus *YANG Chuanyu, ZHAO Linqing* (739)
Research Progress in the Treatment of Cervical Human Papillomavirus Infection *XU Shuaishi, NIE Wenjia, ZHANG Yongmei* (747)
Processes of Mitophagy Manipulated by Viruses *NIE Huanhuan, QIU Jianfa, ZHANG Xueyan, WANG Yan* (754)
Scientific Research Strategies to Reduce the Biosafety Level of High-Risk Virus Experiments in High Containment Laboratory *ZHAO Yan* (757)
Research Progress in Gene Recombination of Human Enterovirus A71 *ZHANG Hailu, SONG Shaoxia, WEN Hongling* (763)
Research Advances in the Role of Methylation in Latent Viral Infections *SUN Weiwei, JIA Huaijie, JING Zhizhong, CHEN Sirui, LYU Yanrong, LIU Rong, WANG Xiaoxia* (770)

Executive Editor-in-Chief: WANG Yumei

Professional English Reviewer: ZHANG Zhiqing

Publishing English Reviewer: WANG Yumei

病毒学报

第37卷 第3期 2021年5月

(双月刊 1985年创刊)

主管单位 中国科学技术协会

主办单位 中国微生物学会

编辑 《病毒学报》编辑委员会

(北京西城区迎新街100号100052)

总 编 辑 舒跃龙

执行主编/编辑部主任 王玉梅

出 版 《病毒学报》编辑部

(北京西城区迎新街100号100052)

电话/传真: 8610-63536460

E-mail: bdxb@chinajournal.net.cn

主 页 <http://bdxb.cbpt.cnki.net>

印 刷 装 订 北京科信印刷有限公司

国 内 发 行 北京市报刊发行局

订 阅 全国各地邮局

国 外 发 行 中国国际图书贸易总公司

国际标准连续出版物号 ISSN 1000-8721

国内统一连续出版物号 CN 11-1865/R

国内邮发代号 82-227

国外发行代号 BM6448

CHINESE JOURNAL OF VIROLOGY

Vol.37 No.3 May 2021

(Bimonthly, Established in 1985)

Responsible Institution: China Association for Science
and Techology

Sponsored by Chinese Society for Microbiology

Edited by Editorial Board of Chinese Journal

of Virology (100 Ying Xin Jie, Xi Cheng Qu,
Beijing 100052, China)

Editor-in-Chief: SHU Yuelong

Executive Editor/Director of Editorial Office: WANG Yumei

Published by Editorial Office of Chinese Journal

of Virology (100 Ying Xin Jie, Xi Cheng Qu,
Beijing 100052, China)

Tel/Fax: 8610-63536460

E-mail: bdxb@chinajournal.net.cn

[Http://bdxb.cbpt.cnki.net](http://bdxb.cbpt.cnki.net)

Beijing Kexin Printing Co., Ltd.

Distributed by Beijing Bureau for Distribution
of Newspapers and Journals

Domestic Subscription: All Local Post Offices in China

Foreign: China International Book Trading Corporation

International Standard Serial Number: ISSN 1000-8721

CN Serial Numbering: CN 11-1865/R

Post Office Code: 82-227



ISSN 1000-8721



每册定价: 128元 全年定价: 768元

万方数据

