



中文核心期刊
中国科技核心期刊



ISSN 1005-4545

234/R

SXUF5

Q K 2 1 3 0 9 1 2



CHINESE JOURNAL OF VETERINARY SCIENCE

中国兽医学报

第41卷 Vol.41

2021 - 07

7

吉林大学 主办

ISSN 1005-4545



07>



万方数据

中国兽医学报

ZHONGGUO SHOUYI XUEBAO

月刊 1981 年创刊

2021 年 7 月

第 41 卷

第 7 期

目 次

研究论文

预防兽医学 猪圆环 4 型病毒 Cap 蛋白的原核表达

..... 于成东, 哈卓, 王政, 李凯, 李秋璇, 孟媛, 李亭玉, 于桐, 金鑫, 鲁会军, 金宁一(1229)

猪德尔塔冠状病毒抗体间接 ELISA 检测方法的建立及初步应用

..... 钱炳旭, 白雪雁, 张成成, 郭梦娇, 李梦娇, 廖凯, 薛峰, 吴艳涛, 张小荣(1234)

马疱疹病毒 1 型 *gp2* 基因缺失株的构建及生长特性分析

..... 胡月, 贾钦瑞, 吴桂灵, 车传忠, 刘建华, 加尔肯, 冉多良(1242)

河北省奶牛场牛呼吸道疾病综合征病原分离鉴定

..... 高亚桃, 王紫燕, 马亚宾, 蒋桂娥, 倪俊卿, 张明勇, 李妍, 武二斌, 秦建华, 赵月兰(1247)

兔轮状病毒、兔肠冠状病毒双重 RT-PCR 检测方法的建立及初步应用

..... 赵巧雅, 宋丹丹, 刘丽萍, 郭效珍, 刘存霞, 盛媛, 史玉颖, 黄兵(1259)

基于重组截短 RHDV VP60 蛋白的间接 ELISA 抗体检测方法 孙培姣,

周迎春, 于雪, 李本科, 王辉暖, 王雅雯, 于新友, 杨慧, 王蓉, 李振伟, 王玉茂, 沈志强, 肖跃强(1264)

鹦鹉源禽博尔纳病毒的鉴定及全基因序列分析 ... 翟俊琼, 单芬, 李婉萍, 周妞, 罗满林, 陈武(1270)

大熊猫源产超广谱 β -内酰胺酶肺炎克雷伯杆菌的分离鉴定

..... 苏小艳, 李运莉, 燕霞, 张东升, 李林, 侯蓉, 岳婵娟, 刘颂蕊(1276)

河北省部分地区犊牛腹泻大肠杆菌优势血清型筛选及兼性菌毛株的致病性

..... 关一凡, 李妍, 高亚桃, 常丽云, 杨晓彤, 贾仲昕, 秦建华, 赵月兰(1282)

羊源 D 型产气荚膜梭菌分离鉴定及耐药性与致病性分析

..... 赵学亮, 王晨晓, 王斌, 冯航, 叶超, 党如意, 王娟, 杨增岐(1290)

捻转血矛线虫丙硫咪唑耐药株和敏感株转录组水平下差异基因分析

..... 石雅琴, 苏倩, 王腾宇, 毛晓伟, 陈昕迪, 穆嘉明, 王文龙, 刘春霞(1295)

不同耐伊维菌素捻转血矛线虫国内分离株耐阿苯达唑特性

..... 罗晓平, 王鹏龙, 李军燕, 杨晓野, 耿万恒, 冯新港, 刘威, 李超, 刘阳, 王瑞(1301)

人兽共患病 1 种布鲁菌抗体检测试纸条快速检测方法的建立

..... 吴志强, 刘少蓉, 白民俊, 段晓珮, 高强, 黄素文, 段跃强(1310)

大肠杆菌致脑膜炎小鼠模型的构建及脑脊液采集方法的改建

..... 钟昊然, 王培莉, 黄蓝田, 孟霞, 李建基, 朱国强, 崔璐莹, 董俊升, 王亨(1315)

鼠伤寒沙门菌 sRNA GcvB 与靶基因的作用机理分析 潘永, 杨阳, 段世宇, 杨琦(1321)
单增李斯特菌 *plcB* 缺失株的生物学特性及酵母双杂交诱饵载体构建

..... 黄怡芳, 吕洁婷, 陈绵绵, 程昌勇, 宋厚辉(1328)

基础兽医学 JAK-STAT 信号通路 JAK2、STAT 3 和 SOCS1 基因在鸭肠炎病毒感染中各组织的表达变化

... 张飘, 龙立书, 洪猛, 华敏, 杨霞, 曾茂芹, 刘妍罕, 张扬子, 杨颖, 温贵兰, 程振涛, 李涛, 文明(1335)
皮质醇对 LPS 损伤的奶牛子宫内膜上皮细胞修复机制的影响

..... 董俊升, 王雅丽, 方丽, 孙法壮, 崔璐莹, 王亨, 李建基(1348)

二烯丙基二硫化物对 MDCC-MSB-1 细胞凋亡的影响 张佩琪, 周鹏飞, 叶正钦, 刘进辉, 王宜平, 纪春晓(1354)
朝藿定 A 对破骨细胞及骨质疏松雄性小鼠的作用

..... 刘颖, 柴丽娟, 黄菊阳, 王琴, 宋蕾, 周昆, 李云章(1359)
丹参多糖对氟苯尼考导致的肉鸡生长抑制和肝功能损伤的缓解作用

..... 韩超, 李淑颖, 耿玉萌, 史万玉, 包永占(1365)

茶多酚通过 NF-κB 通路缓解 LPS 诱导的奶牛乳腺上皮细胞炎性反应 贾红豆(1372)

临床兽医学 血浆乳酸动态监测在犬胃肠道危重病例预后评估中的作用

..... 黄健佳, 冯佳培, 王云, 胡念清, 吴帆, 桑田, 曹华斌(1376)

复方苦芩结合针灸治疗犬细小病毒病及对犬肠黏膜的修复作用 李珍珍, 关璐, 朱兆荣, 刘娟(1384)

早期股骨头坏死动物模型的建立及评价

..... 崔镇海, 金美英, 李宗洋, 谷天, 钱海峰, 陶悦, 李驰坤, 尹宏兵, 赵文海(1393)

苏卡达陆龟尿酸的固体成分和尿结石的性状及显微结构观察 丁荔佳, 成奇, 潘连德, 徐金铖, 刘宇婷(1399)

动物科学 葛根素对饲喂氧化大豆油黄羽肉鸡生长性能、抗氧化能力和免疫功能的影响

..... 余应梅, 施璇, 王汝慧, 李君惠, 欧阳经鑫, 刘三凤, 黎观红(1407)

综述

非洲猪瘟病毒的侵染机制及疫苗研究进展 牟豪, 赵光夫, 余远迪, 许国洋, 杨柳(1414)

细菌 VI型分泌系统结构和功能的研究进展 钟璐嘉, 蒋文灿, 李鑫, 曾晓慧, 蒋鑫, 霞雨(1419)

结核分枝杆菌感染中凋亡相关 microRNA 的研究进展 苏莉, 竺婷婷, 师红铃, 郭爱珍, 陈颖钰(1425)

感染期和休眠期结核分枝杆菌脂肪酸来源和利用差异的研究进展

... 周颖, 刘立英, 秦守涛, 丛薇, 李东, 孙江洋, 时坤, 李健明, 宗颖, 赵丹, 曾范利, 杜锐(1431)

长链非编码 RNA 与相关信号通路的研究进展

..... 邵子益, 薛琳琳, 计红, 邵百卉, 詹雪龙, 牛春阳, 郭景茹, 李士泽, 杨焕民(1438)

成肌细胞与前体脂肪细胞在共培养体系中互作关系的研究进展

..... 谢涛, 陆惠娴, 阮梦茹, AMBREEN Lqbal, 姜平, 赵志辉(1444)

简讯

《中国兽医学报》第七届编辑委员会委员名单 (封二)

[期刊基本参数]CN 22-1234/R * 1981 * m * A4 * 222 * zh * P * ¥20.00 * 1100 * 33 * 2021-07

CHINESE JOURNAL OF VETERINARY SCIENCE

Vol. 41

Jul. 2021

No. 7

CONTENTS

- Prokaryotic expression of porcine circovirus type 4 cap protein YU Chengdong, HA Zhuo, WANG Zheng, LI Kai, LI Qiujuan, MENG Yuan, LI Tingyu, YU Tong, JIN Xin, LU Huijun, JIN Ningyi (1229)
- Establishment and preliminary application of indirect ELISA for detection of porcine Deltacoronavirus antibody QIAN Bingxu, BAI Xueyan, ZHANG Chengcheng, GUO Mengjiao, LI Mengjiao, LIAO Kai, XUE Feng, WU Yantao, ZHANG Xiaorong (1234)
- Construction of a *gp2*-gene-deleted mutant strain of equine herpesvirus 1 and its growth properties analysis HU Yue, JIA Qinrui, WU Guiling, CHE Chuanzhong, LIU Jianhua, JARHEN, RAN Duoliang (1242)
- Pathogen isolation and identification of bovine respiratory disease complex in dairy farm of Hebei Province GAO Yatao, WANG Ziyan, MA Yabin, JIANG Guie, NI Junqing, ZHANG Mingyong, LI Yan, WU Erbin, QIN Jianhua, ZHAO Yuelan (1247)
- Establishment and preliminary application of duplex RT-PCR for detection of lapine rotavirus and rabbit enteric coronavirus ZHAO Qiaoya, SONG Dandan, LIU Liping, GUO Xiaozhen, LIU Cunxia, SHENG Yuan, SHI Yuying, HUANG Bing (1259)
- Indirect ELISA method based on recombinant truncated VP60 protein for the detection of RHDV antibodies SUN Peijiao, ZHOU Yingchun, YU Xue, LI Benke, WANG Huinuan, WANG Yawen, YU Xinyou, YANG Hui, WANG Rong, LI Zhenwei, WANG Yumao, SHEN Zhiqiang, XIAO Yueqiang (1264)
- Identification and whole genome sequence analysis of Bornavirus from parrot ZHAI Junqiong, SHAN Fen, LI Wanping, ZHOU Niu, LUO Manlin, CHEN Wu (1270)
- Isolation and identification of extended-spectrum β -lactamases producing *Klebsiella pneumoniae* in captive giant panda SU Xiaoyan, LI Yunli, YAN Xia, ZHANG Dongsheng, LI Lin, HOU Rong, YUE Chanjuan, LIU Songrui (1276)
- Screening of predominant serotypes of *Escherichia coli* from calf diarrhea and isolation and identification of facultative fimbriae strains in some areas of Hebei Province GUAN Yifan, LI Yan, GAO Yatao, CHANG Liyun, YANG Xiaotong, JIA Zhongxin, QIN Jianhua, ZHAO Yuelan (1282)
- Isolation, identification, drug resistance and pathogenicity analysis of *Clostridium perfringens* type D from sheep ZHAO Xueliang, WANG Chenxiao, WANG Bin, FENG Hang, YE Chao, DANG Ruyi, WANG Juan, YANG Zengqi (1290)
- Differential gene analysis at the transcriptome level of albendazole resistant and sensitive strains of *Haemonchus contortus* SHI Yaqin, SU Qian, WANG Tengyu, MAO Xiaowei, CHEN Xindi, MU Jia-ming, WANG Wenlong, LIU Chunxia (1295)
- Characteristics of albendazole resistance of different ivermectin-resistant *Haemonchus contortus* isolates in China LUO Xiaoping, WANG Penglong, LI Junyan, YANG Xiaoye, GEN Wanpeng, FENG Xingang, LIU Wei, LI Chao, LIU Yang, WANG Rui (1301)
- Establishment of the rapid detection method of *Brucella* antibody test strip WU Zhiqiang, LIU Shaorong, BAI Minjun, DUAN Xiaopei, GAO Qiang, HUANG Suwen, DUAN Yueqiang (1310)
- Establishment of a mouse model of *Escherichia coli* meningitis and modification of the cerebrospinal fluid collection method ZHONG Haoran, WANG Peili, HUANG Lantian, MENG Xia, LI Jianji, ZHU Guoqiang, CUI Luying, DONG Junsheng, WANG Heng (1315)
- Mechanism of interaction between small RNA GcvB and target genes of *Salmonella typhimurium* PAN Yong, YANG Yang, DUAN Shiyu, YANG Qi (1321)
- Characterization of *Listeria monocytogenes* *plcB* deletion mutant and construction of PlcB-based yeast two-hybrid system HUANG Yifang, LYU Jieting, CHEN Miamian, CHENG Changyong, SONG Houhui (1328)
- Changes of expression of JAK2, STAT3 and SOCS1 genes in JAK-STAT signaling pathway in various tissues of duck infected with duck enteritis virus ZHANG Piao, LONG Lishu, HONG Meng, HUA Min, YANG Xia, ZENG Maoqin, LIU Yanhan, ZHANG Yangzi, YANG Ying, WEN Guilan, CHENG Zhentao, LI Tao, WEN Ming (1335)
- Effects of cortisol on repair mechanism in LPS-induced bovine endometrial epithelial cells DONG Junsheng, WANG Yali, FANG Li, SUN Fazhuang, CUI Luying, WANG Heng, LI Jianji (1348)
- Effects of diallyl disulfide on apoptosis of MDCC-MSB-1 cells ZHANG Peiqi, ZHOU Pengfei, YE Zhengqin, LIU Jinhuai, WANG Yiping, JI Chunxiao (1354)
- Effects of epimedin A on osteoclasts and osteoporotic male mice LIU Ying, CHAI Lijuan, HUANG Juyang, WANG Qin, SONG Lei, ZHOU Kun, LI Yunzhang (1359)
- Effects of *Salvia miltiorrhiza* polysaccharide on growth inhibition and liver function injury of broilers induced by florfenicol HAN Chao, LI Shuying, GENG Yumeng, SHI Wanyu, BAO Yongzhan (1365)

- Tea polyphenols alleviate LPS-induced inflammation in bovine mammary epithelial cells via the NF- κ B pathway JIA Hongdou (1372)
- Role of dynamic monitoring of plasma lactic acid in the prognostic assessment of canine critical gastrointestinal cases HUANG Jianjia, FENG Jiapei, WANG Yun, HU Nianqing, WU Fan, SANG Tian, CAO Huabin (1376)
- Repair effect of compound Kuqin combined with acupuncture on intestinal mucosa of canine parvovirus LI Zhenzhen, GUAN Lu, ZHU Zhaorong, LIU Juan (1384)
- Experimental study on animal model of early osteonecrosis of the femoral head CUI Zhenhai, JIN Meiyang, LI Zongyang, GU Tian, QIAN Haifeng, TAO Yue, LI Chikun, YIN Hongbing, ZHAO Wenhai (1393)
- Microstructural observation of the solid content of uric acid and urinary calculus of *Centrochelys sulcata* DING Lijia, CHENG Qi, PAN Liande, XU Jincheng, LIU Yuting (1399)
- Effects of puerarin on growth performance, antioxidant capacity and immune function of yellow-feathered broilers fed with oxidized soybean oil YU Yingmei, SHI Xuan, WANG Ruhui, LI Junhui, OUYANG Jingxin, LIU Sanfeng, LI Guanhong (1407)
- Perspectives for development of African swine fever virus infection mechanism and vaccine MU Hao, ZHAO Guangfu, YU Yuandi, XU Guoyang, YANG Liu (1414)
- Research progress of structure and function of bacterial type VI secretion system ZHONG Lujia, JIANG Wencan, LI Xin, ZENG Xiaohui, JIANG Xin, XIA Yu (1419)
- Research progress of apoptosis-related microRNAs in *Mycobacterium tuberculosis* infection SU Li, ZHU Tingting, SHI Hongling, GUO Aizhen, CHEN Yingyu (1425)
- Research progress on the differences in the source and utilization of fatty acids of *Mycobacterium tuberculosis* during infection and dormancy ZHOU Ying, LIU Liying, QIN Shoutao, CONG Wei, LI Dong, SUN Jiangyang, SHI Kun, LI Jian-ming, ZONG Ying, ZHAO Dan, ZENG Fan-li, DU Rui (1431)
- Research progress of long non-coding RNA and related signaling pathways SHAO Ziyi, XUE Linlin, JI Hong, SHAO Baihui, ZHAN Xuelong, NIU Chunyang, GUO Jingru, LI Shize, YANG Huanmin (1438)
- Research progress on the interaction between myoblasts and preadipocytes in co-culture system XIE Tao, LU Huiyan, RUAN Mengru, AMBREEN Lqbal, JIANG Ping, ZHAO Zhihui (1444)

执行主编:张学东 责任编辑:冯立文 英文编辑:王铁东

中 国 兽 医 学 报
ZHONGGUO SHOUYI XUEBAO

1981 年创刊(月刊)
2021 年 7 月 15 日 第 41 卷 第 7 期(总第 295 期)

**Chinese Journal of
Veterinary Science**

Started in 1981 (Monthly)
2021-07-15 Vol.41 No.7(Sum No.295)

主管单位 中华人民共和国教育部
主办单位 吉林大学
主 编 金宁一
总 编 郭建顺
编辑出版 中国兽医学报编辑部
地 址 吉林省长春市西安大路 5333 号
(邮政编码 130062)
电 话 0431-87836534
印 刷 吉林省保隆冠彩印刷有限公司
国内发行 吉林省报刊发行局
订 购 全国各地邮政局(所)
国外发行 中国国际图书贸易集团有限公司
(北京 399 信箱)
电子信箱 xbcjvs@jlu.edu.cn

Management Ministry of Education of the
People's Republic of China
Sponsor Jilin University
Editor-in-Chief JIN Ningyi
Managing Editor GUO Jianshun
Editor Editorial Board on Chinese Journal of
Veterinary Science
Address 5333 Xi'an Road, Changchun,
Jilin, 130062, China
Telephone +86-431-87836534
Overseas China International Book Trading
Corporation
(P.O.Box 399, Beijing, China)
投稿系统 <http://zsyx.cbpt.cnki.net>

中国标准连续出版物号 ISSN 1005-4545
CN 22-1234/R 发行代号 12-105(国内)
4106MO(国外) 国内定价 20.00 元/册
240.00 元/年

- Tea polyphenols alleviate LPS-induced inflammation in bovine mammary epithelial cells via the NF- κ B pathway JIA Hongdou (1372)
- Role of dynamic monitoring of plasma lactic acid in the prognostic assessment of canine critical gastrointestinal cases HUANG Jianjia, FENG Jiapei, WANG Yun, HU Nianqing, WU Fan, SANG Tian, CAO Huabin (1376)
- Repair effect of compound Kuqin combined with acupuncture on intestinal mucosa of canine parvovirus LI Zhenzhen, GUAN Lu, ZHU Zhaorong, LIU Juan (1384)
- Experimental study on animal model of early osteonecrosis of the femoral head CUI Zhenhai, JIN Meiyang, LI Zongyang, GU Tian, QIAN Haifeng, TAO Yue, LI Chikun, YIN Hongbing, ZHAO Wenhai (1393)
- Microstructural observation of the solid content of uric acid and urinary calculus of *Centrochelys sulcata* DING Lijia, CHENG Qi, PAN Liande, XU Jincheng, LIU Yuting (1399)
- Effects of puerarin on growth performance, antioxidant capacity and immune function of yellow-feathered broilers fed with oxidized soybean oil YU Yingmei, SHI Xuan, WANG Ruhui, LI Junhui, OUYANG Jingxin, LIU Sanfeng, LI Guanhong (1407)
- Perspectives for development of African swine fever virus infection mechanism and vaccine MU Hao, ZHAO Guangfu, YU Yuandi, XU Guoyang, YANG Liu (1414)
- Research progress of structure and function of bacterial type VI secretion system ZHONG Lujia, JIANG Wencan, LI Xin, ZENG Xiaohui, JIANG Xin, XIA Yu (1419)
- Research progress of apoptosis-related microRNAs in *Mycobacterium tuberculosis* infection SU Li, ZHU Tingting, SHI Hongling, GUO Aizhen, CHEN Yingyu (1425)
- Research progress on the differences in the source and utilization of fatty acids of *Mycobacterium tuberculosis* during infection and dormancy ZHOU Ying, LIU Liying, QIN Shoutao, CONG Wei, LI Dong, SUN Jiangyang, SHI Kun, LI Jian-ming, ZONG Ying, ZHAO Dan, ZENG Fan-li, DU Rui (1431)
- Research progress of long non-coding RNA and related signaling pathways SHAO Ziyi, XUE Linlin, JI Hong, SHAO Baihui, ZHAN Xuelong, NIU Chunyang, GUO Jingru, LI Shize, YANG Huanmin (1438)
- Research progress on the interaction between myoblasts and preadipocytes in co-culture system XIE Tao, LU Huiyan, RUAN Mengru, AMBREEN Lqbal, JIANG Ping, ZHAO Zhihui (1444)

执行主编:张学东 责任编辑:冯立文 英文编辑:王铁东

中 国 兽 医 学 报
ZHONGGUO SHOUYI XUEBAO

1981 年创刊(月刊)
2021 年 7 月 15 日 第 41 卷 第 7 期(总第 295 期)

**Chinese Journal of
Veterinary Science**

Started in 1981 (Monthly)
2021-07-15 Vol.41 No.7(Sum No.295)

主管单位 中华人民共和国教育部
主办单位 吉林大学
主 编 金宁一
总 编 郭建顺
编辑出版 中国兽医学报编辑部
地 址 吉林省长春市西安大路 5333 号
(邮政编码 130062)
电 话 0431-87836534
印 刷 吉林省保隆冠彩印刷有限公司
国内发行 吉林省报刊发行局
订 购 全国各地邮政局(所)
国外发行 中国国际图书贸易集团有限公司
(北京 399 信箱)
电子信箱 xbcjvs@jlu.edu.cn

Management Ministry of Education of the People's Republic of China
Sponsor Jilin University
Editor-in-Chief JIN Ningyi
Managing Editor GUO Jianshun
Editor Editorial Board on Chinese Journal of Veterinary Science
Address 5333 Xi'an Road, Changchun, Jilin, 130062, China
Telephone +86-431-87836534
Overseas China International Book Trading Corporation
(P.O.Box 399, Beijing, China)
投稿系统 <http://zsyx.cbpt.cnki.net>

中国标准连续出版物号 ISSN 1005-4545
CN 22-1234/R 发行代号 12-105(国内)
4106MO(国外) 国内定价 20.00 元/册
240.00 元/年