



全国中文核心期刊
中国农林核心期刊

中国科技核心期刊
RCCSE中国核心学术期刊 (A)



Q K 2 2 5 6 9 2 1 6

CN 11- 4843/S

中国畜牧兽医

CHINA ANIMAL HUSBANDRY &
VETERINARY MEDICINE

第50卷
Vol. 50

第3期
No.3

2023年3月



主管： 中华人民共和国农业农村部
主办： 中国农业科学院北京畜牧兽医研究所

万方数据

目 次

· 生 物 技 术 ·

细粒棘球绦虫 *EGR-07243* 和 *EGR-07244* 基因生物信息学分析及原核表达
..... 贾新月,马 静,张艳艳,马 勋,王正荣,薄新文(847)

牦牛“海绵吸附”*bta-miR-146a* 的 lncRNA 筛选及靶向验证
..... 王运路,孟朝轶,姚一龙,郭 敏,牛家强,索朗斯珠,徐业芬(859)

奶牛 *CRY1* 基因真核表达载体构建、生物信息学分析及组织表达谱研究
..... 李 丹,张海森,王逸群,高登科,赵泓淙,李 超,靳亚平,陈华涛(870)

miR-192 进化分析、靶基因预测及组织表达分析 常艺通,张 维,彭英林,陈 晨(882)

贵州白山羊 *MyoG* 基因启动子区序列克隆及生物信息学分析
..... 宋兴超,孟金柱,赵园园,吴震洋,安清明(893)

北京鸭和连城白鸭胸肌脂质组鉴定与分析
..... 张 鹤,刘大鹏,唐贺贺,刘 同,余大新,于思梦,盖 凯,侯水生,周正奎(904)

· 生 理 生 化 ·

基于 UPLC-MS/MS 代谢组学技术分析归芪益母口服液对产后奶牛血浆代谢物的影响
..... 孔维怡,王菲菲,岳 康,秦俊杰,朱 浩,郭延生(913)

肠脑轴中胆汁酸功能研究进展 梁競文,王丽娜(924)

冷应激复温对 ICR 小鼠神经行为学的影响 史宏昭,刘 洋,姚睿智,刘 鹏,李士泽(932)

改造溶菌酶抑菌活性研究进展 王 武,王 碧,白 瑜,陈启蓉(942)

· 营 养 与 饲 料 ·

放牧条件下补充酵母硒对绵羊胃肠道微生物区系的影响
..... 崔 双,乌日力嘎,阿拉达尔,晓 敏,王剑秋,弓 剑(952)

饲粮能量水平对安格斯公牛育肥性能及血清生化指标的影响
..... 任建刚,关 鹏,黄建智,盛月云,包铁柱,马治平,钱文熙(966)

家禽运输应激及其缓解措施研究进展 熊太第,蒋守群,张辉华,朱 翠(977)

黄芩对 ZEA 暴露雌性小鼠抗氧化能力、性激素水平和 ER α mRNA 表达的影响 雷 奇,任 杰,康 杰(989)

包被丁酸钠对种鸽和乳鸽的生长性能、屠宰性能、免疫器官指数及消化酶活性的影响 刘 震,周雪勤,徐 翡,李浙烽,孙寒雪,李国勤,陶争荣,官 梅,郑 强,刁新平,卢立志(998)

和厚朴酚对镉致鸡肾脏损伤的保护作用 黄小倩,原俊朝,刘金河,邹 辉,顾建红,袁 燕,刘学忠,刘宗平,卞建春(1007)

基因编辑益生菌在动物肠道健康上的研究及应用 陈少俊,李 刚,奈子达,刘 娣,姜新鹏(1016)

• 遗 传 繁 育 •

RNA 甲基化转移酶 METTL3 对牛骨骼肌卫星细胞增殖与成肌分化的影响 甄 珍,王 梅,王轶敏,胡德宝,张林林,李 新,郭益文,郭 宏,丁向彬(1025)

绒山羊 4 个多胎性状候选基因多态性及其与产羔数的关联分析 萨初拉,吴铁成,马跃军,何云梅,朱莉仙,何托雅,武玉平,刘 斌(1037)

多浪羊 NPTX1 基因克隆、生物信息学分析及在初情期的表达研究 张永杰,隋志远,张志帅,王晨光,李孝君,邢 凤(1048)

绵羊褐色脂肪活性影响因素的研究进展 方勤圆,付绍印,王 标,何小龙,何江峰,王力伟,陈 欣,张 林,王大清,马跃军,张立岭,刘永斌(1059)

• 预 防 兽 医 •

猪圆环病毒 2 型合成肽疫苗佐剂筛选与免疫保护性研究 刘新月,栗利芳,王振豹,张文亮,张 欣,赵洪涛,李鹏宇,郑昊天,肖 进,齐 鹏(1068)

河北地区动物源大肠杆菌多重耐药性与流行性分析 朱琪琪,张继瑜,王承业,吴灵玉,王玮玮,朱 阵(1081)

伪狂犬病病毒贵州分离株与疫苗株遗传进化和抗原表位分析 张婧旭,徐 玉,梁海英,曾智勇,汤德元,王 彬,徐松平,万 娟,祝 羊(1093)

大片形吸虫丝氨酸/苏氨酸蛋白磷酸酶 2A 的原核表达及不同时期表达水平分析 章志涛,李祥龙,孔令丽,罗雨昕,王冬英(1107)

STAT3 纳米抗体的制备与功能鉴定 秦蓉芬,贾 琼,于雷涛,李佳敏,迟志端,范瑞文(1118)

寄生虫与肠道菌群互作机制研究进展 李梦蕊,李永霞,林晓凤,黄潇航,黄志坚,殷光文(1129)

1 株鸭疫里默氏杆菌的全基因组测序及耐药性与遗传进化分析 祝希辉,李艳兰,王志伟,庞喆羽,李玉保,刘 成,司振书,路建彪,曹胜亮,薛希娟(1140)

牛病毒性腹泻病毒 LN-1 株的分离鉴定及基因组序列分析
..... 刘可欣,王 超,张 傲,刘佳利,谭 斌,张淑琴(1150)

猪繁殖与呼吸综合征病毒非结构蛋白 7 真核表达及亚细胞定位.....
..... 李华玮,郭科威,王旭英,张小雨,路紫微,李新锋,马 辉,侯文静(1160)

宽谱鸭疫里默氏菌噬菌体筛选及生物学特性研究.....
..... 程龙飞,廖维连,陈红梅,江南松,傅秋玲,万春和,刘荣昌,施少华,黄 瑜,傅光华(1169)

黄芪多糖对杂交鲟用嗜水气单胞菌灭活疫苗的影响.....
..... 刘 馨,潘吉脉,胡安东,曾成容,杨 颖,程振涛,陈江凤,姜海波,文 明(1177)

• 基 础 兽 医 •

基于猪流行性腹泻病毒变异毒株重组全长 S2 蛋白 IgA 抗体 ELISA 检测方法的建立及应用
..... 牟一娇,于瑞明,张莉萍,王永录(1185)

黄柏、石菖蒲合剂抗炎作用的网络药理学分析 梁 天,王明迪,孙 鹏,朱爱臣,赵千惠,霍书英(1195)

刺五加水提物抗鳃蛙虹彩病毒活性及其对大口黑鲈免疫调节作用的研究.....
..... 马艳平,徐晶晶,杨宏伟,郝 乐,贾梦岩,陶子骞,王敬雅,黄 文,彭 凯,刘振兴(1207)

鸡白痢沙门氏菌 IPAJ 蛋白的表达纯化、多克隆抗体制备及 ELISA 方法的建立
..... 牛小杰,徐明国,肖 莉,刘文豪,陈创夫,王 勇(1218)

基于网络药理学和分子对接分析赤芍抗氧化应激作用的活性成分及其机制.....
..... 豆佳红,王梓颖,杨 娟,周炜炜,张同存,何红鹏,戴小枫,李秀梅(1229)

非洲猪瘟病毒 p30 蛋白单克隆抗体制备和鉴定
..... 侯浩宇,郑南南,吴宏举,陈寅龙,李 潮,张昂克,姬鹏超,万 博,杜永坤,张改平(1241)

3 株鸭疫里氏杆菌的分离鉴定与药敏试验 陈 栋,张言浩,张 阳,李 森,周祖涛,李自力(1250)

乌梅-全蝎双药方对气单胞菌混合感染大口黑鲈的治疗效果分析
..... 侯天牧,项 维,王玲玲,郭忠宝,吴利军,张付贤(1259)

华南虎子宫内膜炎摩氏摩根菌分离鉴定及生物学特性研究.....
..... 胡依凡,马敬华,白思琦,翟祎梦,刘建勋,宋厚辉,杨永春(1271)

黄芩对安普霉素耐药大肠杆菌的耐药消除研究.....
..... 田二杰,谷 振,王子皓,刘方正,刘克森,张雪飞,周变华(1279)

CHINA ANIMAL HUSBANDRY & VETERINARY MEDICINE

Vol. 50 No. 3 (March 2023)

SELECTED CONTENTS

• Biotechnology •

Bioinformatics analysis and prokaryotic expression of *EGR-07243* and *EGR-07243* genes of *Echinococcus granulosus*
..... JIA Xinyue, MA Jing, ZHANG Yanyan, MA Xun, WANG Zhengrong, BO Xinwen(847)

Screening and targeting verification of lncRNA of “sponge adsorption” bta-miR-146a in yak
..... WANG Yunlu, MENG Zhaoyi, YAO Yilong, GUO Min, NIU Jiaqing, SUOLANG Sizhu, XU Yefen(859)

Eukaryotic expression vector construction, bioinformatics and tissue expression profiles analysis of *CRY1* gene in
dairy cows LI Dan, ZHANG Haisen, WANG Yiqun, GAO Dengke, ZHAO Hongcong,
LI Chao, JIN Yaping, CHEN Huatao(870)

Evolutionary analysis, target gene prediction and tissue expression analysis of miR-192
..... CHANG Yitong, ZHANG Wei, PENG Yinglin, CHEN Chen(882)

Cloning and bioinformatics analysis of *MyoG* gene promoter region sequence in Guizhou White goat
..... SONG Xingchao, MENG Jinzhu, ZHAO Yuanyuan, WU Zhenyang, AN Qingming(893)

Identification and analysis of the lipidome of the breast muscle of Pekin duck and Liancheng White duck
..... ZHANG He, LIU Dapeng, TANG Hehe, LIU Tong, YU Daxin,
YU Simeng, GAI Kai, HOU Shuisheng, ZHOU Zhengkui(904)

• Physiological and Biochemical •

Effect of Guiqi Yimu oral liquid on plasma metabolites in postpartum dairy cows based on UPLC-MS/MS metabolomics
technology KONG Weiyi, WANG Feifei, YUE Kang, QIN Junjie, ZHU Hao, GUO Yansheng(913)

Research progress of bile acid function in gut-brain axis LIANG Jingwen, WANG Lina(924)

Effects of cold stress rewarming on neurobehavioral changes in ICR mice
..... SHI Hongzhao, LIU Yang, YAO Ruizhi, LIU Peng, LI Shize(932)

Research progress on antibacterial activity of modified lysozyme
..... WANG Wu, WANG Bi, BAI Yu, CHEN Qirong(942)

• Nutrition and Feed •

Effects of yeast selenium supplementation on gastrointestinal microflora in sheep under grazing conditions
..... CUI Shuang, Wurlig, Alder, XIAO Min, WANG Jianqiu, GONG Jian(952)

Effects of dietary energy level on growth-fattening performance and serum biochemical indices of Angus bulls
..... REN Jiangang, GUAN Peng, HUANG Jianzhi, SHENG Yueyun, BAO Tiezhu, MA Zhiping, QIAN Wenxi(966)

Research progress on transportation stress and its mitigation measures in poultry
..... XIONG Taidi, JIANG Shouqun, ZHANG Huihua, ZHU Cui(977)

Effects of *Scutellaria baicalensis georgi* on antioxidant capacity, sex hormone levels and mRNA expression of ER α
in female mice exposed to ZEA LEI Qi, REN Jie, KANG Jie(989)

Effects of coated sodium butyrate on growing performance,slaughter performance,immune organ index and digestive enzyme activity of breeding pigeons and squabs LIU Zhen,ZHOU Xueqin,XU Fei, LI Zhefeng,SUN Hanxue,LI Guoqin,TAO Zhengrong,GUAN Mei,ZHENG Qiang,DIAO Xinping,LU Lizhi(998)

Protective effect of honokiol on cadmium-induced renal injury in chickens HUANG Xiaoqian,YUAN Junzhao, LIU Jinhe, ZOU Hui,GU Jianhong,YUAN Yan,LIU Xuezhong,LIU Zongping,BIAN Jianchun(1007)

Research and application of gene-edited probiotics in animal intestinal health CHEN Shaojun,LI Gang,NAI Zida,LIU Di,JIANG Xinpeng(1016)

• **Genetics and Breeding** •

Effect of RNA methylation transfer enzyme METTL3 on the proliferation and myogenic differentiation of bovine skeletal muscle satellite cells ZHEN Zhen,WANG Mei,WANG Yimin, HU Debao,ZHANG Linlin,LI Xin,GUO Yiwen,GUO Hong,DING Xiangbin(1025)

Polymorphisms of four polyembryony related genes and its association analysis with litter size in cashmere goats Sachula,WU Tiecheng,MA Yuejun,HE Yunmei,ZHU Lixian,HE Tuoya,WU Yuping,LIU Bin(1037)

Cloning and bioinformatics analysis of *NPTX1* gene and its tissues expression at puberty in Dolang sheep ZHANG Yongjie,SUI Zhiyuan,ZHANG Zhishuai,WANG Chenguang,LI Xiaojun,XING Feng(1048)

Research progress on influencing factors of brown fat activity in sheep FANG Qinyuan,FU Shaoyin,WANG Biao,HE Xiaolong,HE Jiangfeng,WANG Liwei, CHEN Xin,ZHANG Lin,WANG Daqing,MA Yuejun,ZHANG Liling,LIU Yongbin(1059)

• **Preventive Veterinary Medicine** •

Adjuvants screening and immune protection of Porcine circovirus type 2 synthetic peptide vaccine LIU Xinyue,LI Lifang,WANG Zhenbao,ZHANG Wenliang,ZHANG Xin,ZHAO Hongtao, LI Pengyu,ZHENG Haotian,XIAO Jin,QI Peng(1068)

Analysis of multidrug resistance and prevalence of animal-derived *Escherichia coli* in Hebei ZHU Qiqi,ZHANG Jiyu,WANG Chengye,WU Lingyu,WANG Weiwei,ZHU Zhen(1081)

Phylogenetic evolution and epitope analysis of Pseudorabies virus Guizhou isolates and vaccine strains ZHANG Jingxu,XU Yu,LIANG Haiying,ZENG Zhiyong,TANG Deyuan,WANG Bin, XU Songping,WAN Juan,ZHU Yang(1093)

Prokaryotic expression of serine/threonine protein phosphatase 2A in *Fasciola gigantica* and expression analysis at different stages ZHANG Zhitao,LI Xianglong,KONG Lingli,LUO Yuxin,WANG Dongying(1107)

Preparation and functional identification of STAT3 nanobody QIN Rongfen,JIA Qiong,YU Leitao,LI Jiamin,CHI Zhirui,FAN Ruiwen(1118)

Research progress on the interaction mechanism between parasites and gut microbiota LI Mengrui,LI Yongxia,LIN Xiaofeng,HUANG Xiaohang,HUANG Zhijian,YIN Guangwen(1129)

Whole genome sequencing of a resistant *Riemerella anatipestifer* strain and analysis of antibiotic resistance and genetic evolution ZHU Xihui,LI Yanlan,WANG Zhiwei,PANG Zheyu, LI Yubao,LIU Cheng,SI Zhenshu,LU Jianbiao,CAO Shengliang,XUE Xijuan(1140)

Isolation,identification and genome sequence analysis of Bovine viral diarrhea virus LN-1 strain LIU Kexin,WANG Chao,ZHANG Ao,LIU Jiali,TAN Bin,ZHANG Shuqin(1150)

Eukaryotic expression and subcellular localization of nonstructural protein 7 of Porcine reproductive and respiratory syndrome virus
..... LI Huawei, GUO Kewei, WANG Xuying, ZHANG Xiaoyu, LU Ziwei, LI Xinfeng, MA Hui, HOU Wenjing(1160)

Screening and biological characteristics of broad-spectrum *Riemerella anatipestifer* phage
..... CHENG Longfei, LIAO Weilian, CHEN Hongmei, JIANG Nansong, FU Qiuling, WAN Chunhe,
LIU Ronchang, SHI Shaohua, HUANG Yu, FU Guanghua(1169)

Effect of *Astragalus* polysaccharides on inactivated *Aeromonas hydrophila* vaccine for hybrid sturgeon
..... LIU Xin, PAN Jimai, HU Andong, ZENG Chengrong, YANG Ying, CHENG Zhentao,
CHEN Jiangfeng, JIANG Haibo, WEN Ming(1177)

• Basic Veterinary Medicine •

Establishment and application of ELISA for detection of IgA antibody based on the recombinant full-length S2 protein of Porcine epidemic diarrhea virus variant strain
..... MU Yijiao, YU Ruiming, ZHANG Liping, WANG Yonglu(1185)

Network pharmacological analysis of the anti-inflammatory mechanism of traditional chinese medicine mixture *Phellodendron amurense* and *Acorus calamus*
..... LIANG Tian, WANG Mingdi, SUN Peng, ZHU Aichen, ZHAO Qianhui, HUO Shuying(1195)

Anti-MRV activity of *Acanthopanax senticosus* aqueous extract (ASAE) and its immunomodulatory effects on *Micropterus salmoides*
MA Yanping, XU Jingjing, YANG Hongwei,
HAO Le, JIA Mengyan, TAO Ziqian, WANG Jingya, HUANG Wen, PENG Kai, LIU Zhenxing(1207)

Expression and purification of IPAJ protein of *Salmonella* Pullorum, preparation of polyclonal antibody and establishment of ELISA method
..... NIU Xiaojie, XU Mingguo, XIAO Li, LIU Wenhao, CHEN Chuangfu, WANG Yong(1218)

Analysis of the active ingredients and mechanism of *Radix Paeoniae Rubra* antioxidative stress based on network pharmacology and molecular docking
DOU Jiahong, WANG Ziyi, YANG Juan,
ZHOU Weiwei, ZHANG Tongcun, HE Hongpeng, DAI Xiaofeng, LI Xiumei(1229)

Preparation and characterization of monoclonal antibody against p30 protein of African swine fever virus
..... HOU Haoyu, ZHENG Nannan, WU Hongju, CHEN Yinlong, LI Chao, ZHANG Angke,
JI Pengchao, WAN Bo, DU Yongkun, ZHANG Gaiping(1241)

Isolation, identification and drug sensitivity of 3 strains of *Riemerella anatipestifer*
..... CHEN Dong, ZHANG Yanhao, ZHANG Yang, LI Sen, ZHOU Zutao, LI Zili(1250)

Effect of *Fructus Mume*-Scorpion double prescription on *Micropterus salmoides* co-infected with *Aeromonas*
..... HOU Tianmu, XIANG Wei, WANG Lingling, GUO Zhongbao, WU Lijun, ZHANG Fuxian(1259)

Isolation, identification and biological characteristics analysis of *Morganella morganii* from endometritis of South China tiger (*Panthera tigris amoyensis*)
..... HU Yifan, MA Jinghua, BAI Siqi, ZHAI Yimeng, LIU Jianxun, SONG Houhui, YANG Yongchun(1271)

Study on the drug-resistance elimination of *Scutellaria baicalensis* on apramycin-resistant *Escherichia coli*
..... TIAN Erjie, GU Zhen, WANG Zihao, LIU Fangzheng, LIU Kesen, ZHANG Xuefei, ZHOU Bianhua(1279)

《中国畜牧兽医》编委会

主任委员：秦玉昌

委 员：（按英文字母/汉字笔画排序）

Julang Li, Canada

印遇龙 院士	任继周 院士	麦康森 院士	沈建忠 院士	张改平 院士		
陈化兰 院士	侯水生 院士	姚 斌 院士	夏咸柱 院士	譙仕彦 院士		
马月辉	王凤来	王文杰	王立贤	王加启	王楚端	文 杰
田见晖	朱 奎	朱化彬	朱鸿飞	刘国世	刘建新	李 奎
李发弟	李俊雅	李胜利	杨汉春	吕于明	张文广	张军民
张宏福	张家骅	陈继兰	范红结	罗会颖	罗海玲	单安山
赵茹茜	咎林森	秦贵信	贾玉山	郭 勇	郭 鑫	曹兵海
韩雪松	储明星	童光志	熊本海			

主 编：李 琰

副 主 编：卢庆萍 臧长江

编辑部主任：戴 晔

本期值班编辑：晋大鹏

中 国 畜 牧 兽 医

（月刊，1974年创刊）

2023年3月5日 第50卷 第3期

China Animal Husbandry & Veterinary Medicine

(Monthly, Started in 1974)

Vol.50 No.3 March 5, 2023

主 管 中华人民共和国农业农村部
主 办 中国农业科学院北京畜牧兽医研究所
编辑出版 《中国畜牧兽医》编辑部
地 址 北京市海淀区圆明园西路2号
邮 编 100193
电 话 010-62816020 62811226 62810371
网 址 <http://www.chvm.net>
电子邮件 zgxmssy@caas.cn
印刷装订 北京科信印刷有限公司
国内发行 北京报刊发行局
订 购 处 全国各地邮电局
国外发行 中国国际图书贸易集团有限公司
（北京399信箱）
国内定价 50元/期 600元/年

Superintended by Ministry of Agriculture and Rural Affairs, P. R. China
Sponsored by Institute of Animal Sciences, Chinese Academy of Agricultural Sciences (CAAS)
Published by Editorial Department of China Animal Husbandry & Veterinary Medicine
Address No.2 West Road Yuanmingyuan, Haidian, Beijing, China
Postcode 100193
Telephone 010-62816020 62811226 62810371
Website <http://www.chvm.net>
E-mail zgxmssy@caas.cn
Issued by Beijing Kexin Printing Co.,Ltd
Subscription Domestic Post Office
Issued Abroad by International Book Trading Corporation
P.O.Box 399, Beijing, P.R.China

ISSN 1671-7236 邮发代号：2-215 国外代号：BM3517
CN 11-4843/S 广告发布登记证号：京海工商广登字20170085号

ISSN 1671-7236

