



全国中文核心期刊
中国科技核心期刊
中国科学引文数据库来源期刊

ISSN 0366-6964
CODEN CMHPAI

畜牧兽医学报

ACTA VETERINARIA ET ZOOTECHNICA SINICA

CHINESE JOURNAL
OF ANIMAL AND VETERINARY SCIENCES

Vol.54 No.3

2023

中国畜牧兽医学会

CHINESE ASSOCIATION OF ANIMAL
SCIENCE AND VETERINARY MEDICINE

ISSN 0366-6964



03>



畜牧兽医学报

XUMU SHOUYI XUEBAO

第 54 卷 第 3 期 2023 年 3 月

目 次

综 述

- 表观遗传调控在畜禽脂肪沉积机制中的研究进展 金美林, 李桃桃, 孙东晓, 魏彩虹(855)
热应激导致奶牛胚胎质量下降的机制及解决措施 冯肖艺, 杨柏高, 郝海生, 杜卫华, 朱化彬, 崔 凯, 赵学明(868)
miRNA 介导应激幼畜肠道损伤的研究进展 韩露露, 韩德平, 赵启南, 刁其玉, 崔 凯(877)
中性粒细胞胞外诱捕网在病原感染中的作用研究进展 姜慧华, 李 宁, 徐 磊, 郭抗抗(889)
嵴病毒的研究进展 阿比克哈莫, 汤 承, 杨 晨, 杨发龙(900)
动物寄生性线虫与其共生菌相互关系 周 璇, 谢 跃, 陈 舜(914)
常山酮抗原虫作用研究进展 林梦娟, 高沙沙, 赵星辰, 仲宇欣, 吴 俊, 张军忍, 郭大伟(924)

遗传育种

- CRISPR/Cas9 系统介导的猪 MRC1 修饰基因降低 PCV2 复制的研究 费晓钰, 石超群, 刘雪明, 苏 峰, 姜运良(934)
基于芯片数据估计不同方法对槐猪近交系数的影响 韩云珍, 阳文攀, 洪 渊, 龙 肖,
刘相杰, 范小萍, 李文静, 邓 政, 刘鸣慧, 郑素梅, 阮国荣, 丁能水(947)
两广小花猪 FOXL2 基因多态性及其与几个重要经济性状的关联分析 廖伟莉, 张笑科, 曾检华, 阳林芳, 李 硕, 胡梦婷, 郭懿萱, 陈赞谋,
张 豪, 李加琪, 袁晓龙(956)
北京黑猪 FABP3 和 SCD 基因多态性与肉品质性状关联分析 苏艳芳, 杨 曼, 牛乃琪, 侯欣华, 张龙超(966)
基于 RNA-Seq 的无量山乌骨鸡肝脏组织脂代谢相关基因筛选及其表达分析 欧正森, 周家文, 刘莉莉, 吴 芸, 陈粉粉(976)
影响山羊胎儿肌肉发育 mRNA 和 lncRNA 的鉴定与分析 叶峻宁, 邓 铭, 薛慧雯, 柳广斌, 邹 娴, 孙宝丽, 郭勇庆, 刘德武, 李耀坤(989)
不同泌乳阶段和体细胞水平的中国荷斯坦奶牛泌乳性能差异和相关性研究 余诗强, 李留学, 赵小博, 赵慧颖, 屠 焰, 赵玉超, 蒋林树(1003)
干扰 lncbMD 对牛骨骼肌卫星细胞增殖分化的影响 杨 光, 徐 景, 李 新, 胡德宝, 郭益文, 丁向彬, 郭 宏, 张林林(1015)
柴达木牛和蒙古牛 Y 染色体基因组遗传多样性与父系起源研究 马志杰, 王世康, 张卫忠, 郭卫兴, 赵海明, 雷初朝(1026)

生物技术与繁殖

- FGF21 增强线粒体功能抑制猪卵巢颗粒细胞凋亡 胡亚美, 宋湘容, 黄 亮, 张璐通, 高 磊, 庞卫军, 杨公社, 褚瑰燕(1034)
N-乙酰半胱氨酸对不同直径卵泡来源猪卵母细胞体外成熟效果的影响 肖十雨, 卢 畅, 马 娟, 王 阖, 亓美玉, 姚玉昌(1046)
牦牛 lncRNA ENSBGRT00000000387.1 慢病毒载体构建及其对卵泡 GCs 凋亡的影响 孟朝轶, 王运路, 徐业芬, 牛家强, 索朗斯珠, 郭 敏, 席广银(1058)

营养与饲料

- 基于网络药理学预测青蒿缓解奶牛氧化应激的作用机制 潘婵媛, 赵梓轩, 段铭洁, 蒋林树, 童津津(1071)
饲养方式对苏尼特羊生长性能、屠宰性能、肉品质和瘤胃菌群的影响 王威皓, 段 艳, 王宏迪, 窦 露, 刘 婷, 康乐天, 孙立娜, 敖特恒格日乐, 靳 烨(1085)

- 一月龄吮乳羔羊肠道菌群组成及其预测物质代谢功能的动态变化研究 叶倩文,陈 卓,李 鑫,孙亚伟,金肖叶,李紫仟,吾买尔江·牙合甫,钟 旗,马雪连,姚 刚(1095)
- 玉米赤霉烯酮对山羊生长性能、胃肠道发酵模式和菌群结构的影响研究 颜琼娴,陈文勋,惠浩阳,彭 灿,汤少勋,周小玲,谭支良(1109)
- 不同体重四川白鹅消化生理、免疫和肠道微生物的比较分析 袁岩聪,何 航,刘安芳,万 塑,章 杰(1124)
- 裂殖壶菌发酵物对蛋鸡生产性能、蛋品质及肠道菌群结构的影响 丁小伟,何万领,李晓丽,丁美洁,杨龙帮(1135)
- 基于转录组学研究日粮添加尿素对育肥湖羊肝组织氨代谢的影响 孙美杰,曹力文,郑文金,申军士,朱伟云(1148)

预防兽医

- 双香豆素对猪繁殖与呼吸综合征病毒的体外抑制作用 李倬伟,王 方,王君君,陈祯涵,李焕荣,周双海,刘雪威(1160)
- 慢病毒载体介导的稳定表达 eIF5A 细胞系的建立及其对猪繁殖与呼吸综合征病毒增殖的影响 李华玮,王旭英,乔宏兴,李新锋,姬向波,郭科威,杨中元(1169)
- 抑制伪狂犬病病毒复制的宿主蛋白的筛选与鉴定 何文峰,李 琛,常洪涛,李隆熙,陈 静,杨国庆,刘慧敏(1177)
- 沙门菌 SptP 调控巨噬细胞 MAPK-CDK6-RB 通路的初步分析 姚 敏,石博妹,黄廷华(1187)
- 猪产业链中鼠伤寒沙门菌及沙门菌血清型 4,[5],12;i:-基因组学分析 蒋增海,滕 霖,贺安文,刘言言,乐 敏,何启盖(1199)

基础兽医

- 布鲁氏菌Ⅳ型分泌系统效应蛋白 VceC 对山羊滋养层细胞内质网应激和性腺激素分泌的影响 相彩霞,王相国,李俊政,支飞杰,房姣阳,郑维芳,陈家露,靳亚平,王爱华(1210)
- TET1 基因对小鼠 uNK 细胞增殖及 IFN- γ 、VEGF-C 和 TGF- β 1 转录水平的影响 杨晓伟,赵自亮,付 雨,于子肖,赵永聚(1221)
- 甲硫脑啡肽通过阿片受体促进脂多糖作用下奶牛子宫内膜基质细胞的增殖 孙雯叶,李建基,王 亨,董俊升,李 俊,崔璐莹(1229)
- 基于寡肽转运蛋白的氟苯尼考肠吸收特性研究 陈 洋,王悦力,陈诗奇,李楠鑫,张 伟,舒 刚,徐傅能,李昊欢,林居纯,符华林(1240)
- 猫急性应激模型的建立及诊断标志物的筛选 张海洋,朱秋祥,高志诚,贾 坤,王京煜,冀锦朝,梁雾滢,莫睿文,李守军(1249)

临床兽医

- 增益素对溃疡性结肠炎犬免疫功能、肠道屏障和肠道菌群的影响 汪 倩,王建梅,安柯颖,夏兆飞(1261)
- 枸杞酰胺体外对镉致成骨细胞凋亡的保护作用 常颖艳,赵鸿雁,胡茂志,刘宗平(1273)
- 连花清瘟药渣及发酵产物的生物活性研究 刘 广,龚成燕,牛凯敏,张 硕,陶 灯,马 军,吴 信,印遇龙,唐宇龙(1281)
- 苦参碱对牛源无乳链球菌的体外抑菌活性分析 霍相羽,高家瑞,靳佳祺,李 燕,高 原,刘梦涵,蒋林树,童津津(1300)
- 己糖激酶 2 在犬乳腺肿瘤中的表达及预后研究 肖辉豪,刘江渝,李启卷,郑小波,林珈好,金艺鹏,林德贵(1310)
- 猫瘙痒性皮肤病病例临床特征与治疗效果回顾性分析 同 朗,李馨秋,郜平平,姜婉璐,张 迪(1325)

研究简报

- 牛腺病毒 3 型感染状况及其 fiber 轴区基因检测 何姝凡,邹沅彤,黄智兰,李 倩,降措翁西,岳 华,汤 承,刘 杰(1333)
- 胸膜肺炎放线杆菌分离株血清型的 PCR 鉴定和 Apx 毒素基因检测 卢碧凯,袁秀芳,徐丽华,余 斌,苏 菲,叶十一,陈怡洁,蒋利明,张 晖,李军星(1341)

ACTA VETERINARIA ET ZOOTECHNICA SINICA
CHINESE JOURNAL OF ANIMAL AND VETERINARY SCIENCES

Published Monthly:

Chinese Association of Animal Science and Veterinary Medicine

Beijing, China

Vol. 54 No. 3(Mar. 2023)

CONTENTS

REVIEW

- Research Progress of Epigenetic Regulation in Fat Deposition Mechanism of Livestock and Poultry JIN Meilin, LI Taotao, SUN Dongxiao, WEI Caihong(855)
Mechanism and Solution of Heat Stress Induced Embryo Quality Decline in Dairy Cows FENG Xiaoyi, YANG Baigao, HAO Haisheng, DU Weihua, ZHU Huabin, CUI Kai, ZHAO Xueming(868)
Research Progress of Intestinal Injury in Young Farm Animals under Stress Mediated by miRNA HAN Lulu, HAN Deping, ZHAO Qinan, DIAO Qiyu, CUI Kai(877)
Research Progress on the Role of Neutrophil Extracellular Traps in Pathogenic Infection JIANG Huihua, LI Ning, XU Lei, GUO Kangkang(889)
Research Advances in Kobuvirus ABI-kehamo, TANG Cheng, YANG Chen, YANG Falong(900)
The Interactions between Animal-parasitic Nematodes and Their Symbiotic Bacteria ZHOU Xuan, XIE Yue, CHEN Shun(914)
Research Progress on Antiprotozoal Activity of Halofuginone LIN Mengjuan, GAO Shasha, ZHAO Xingchen, ZHONG Yuxin, WU Jun, ZHANG Junren, GUO Dawei(924)

ANIMAL GENETICS AND BREEDING

- CRISPR/Cas9 System Mediated Gene Modified MRC1 in PK15 Cells Reduce PCV2 Replication FEI Xiaoyu, SHI Chaoqun, LIU Xueming, SU Feng, JIANG Yunliang(934)
Estimating the Inbreeding Coefficient of Huai Pigs by Different Methods Based on Chip Data HAN Yunzhen, YANG Wenpan, HONG Yuan, LONG Yi, LIU Xiangjie, FAN Xiaoping, LI Wenjing, DENG Zheng, LIU Minghui, ZHENG Sumei, RUAN Guorong, DING Nengshui(947)
Associations between FOXL2 Polymorphism and Several Important Economic Traits in Liangguang Spotted Pigs LIAO Weili, ZHANG Xiaoke, ZENG Jianhua, YANG Linfang, LI Shuo, HU Mengting, GUO Yixuan, CHEN Zanmou, ZHANG Hao, LI Jiaqi, YUAN Xiaolong(956)
Association Analysis of FABP3 and SCD Gene Polymorphisms with Meat Quality Traits in Beijing Black Pigs SU Yanfang, YANG Man, NIU Naiqi, HOU Xinhua, ZHANG Longchao(966)
Screening and Expression Analysis of Genes Related to Lipid Metabolism in Liver Tissue of Wuliangshan Sooty Chicken Based on RNA-Seq OU Zhengmiao, ZHOU Jiawen, LIU Lili, WU Yun, CHEN Fenfen(976)
Identification and Analysis of mRNA and lncRNA Affecting Goat Fetal Muscle Development YE Junning, DENG Ming, XUE Huiwen, LIU Guangbin, ZOU Xian, SUN Baoli, GUO Yongqing, LIU Dewu, LI Yaokun(989)
Differences and Correlations of Lactation Performance in Chinese Holstein Dairy Cows at Different Lactation Stages and Somatic Levels YU Shiqiang, LI Liuxue, ZHAO Xiaobo, ZHAO Huiying, TU Yan, ZHAO Yuchao, JIANG Linshu(1003)
Effect of Interfering *lncbMD* on Proliferation and Differentiation of Bovine Skeletal Muscle Satellite Cells YANG Guang, XU Jing, LI Xin, HU Debao, GUO Yiwen, DING Xiangbin, GUO Hong, ZHANG Linlin(1015)
Y-chromosome Genomic Diversity and Paternal Origins of Qaidam Cattle and Mongolian Cattle MA Zhijie, WANG Shikang, ZHANG Weizhong, GUO Weixing, ZHAO Haiming, LEI Chuzhao(1026)

ANIMAL BIOTECHNOLOGY AND REPRODUCTION

- FGF21 Enhances Mitochondrial Function and Inhibits Apoptosis of Porcine Ovarian Granulosa Cells HU Yamei, SONG Xiangrong, HUANG Liang, ZHANG Lutong, GAO Lei, PANG Weijun, YANG Gongshe, CHU Guiyan(1034)
Effects of N-acetylcysteine (NAC) on *in Vitro* Maturation of Porcine Oocytes from Follicles with Different Diameters XIAO Shiyu, LU Chang, MA Juan, WANG Chuang, QI Meiyu, YAO Yuchang(1046)
Construction of Yak lncRNA ENSBGR00000000387.1 Lentivirus Vector and Its Effect on Apoptosis of Yak Follicular Granulosa Cells MENG Zhaoyi, WANG Yunlu, XU Yefen, NIU Jiaqiang, SUOLANG Sizhu, GUO Min, XI Guangyin(1058)

ANIMAL NUTRITION AND FEEDS

- The Mechanism of *Artemisia carvifolia* Alleviating Dairy Cow Oxidative Stress Predicted by Network Pharmacology PAN Chanyuan, ZHAO Zixuan, DUAN Mingjie, JIANG Linshu, TONG Jinjin(1071)

- Effects of Feeding Regimens on Growth Performance, Slaughter Performance, Meat Quality and Rumen Bacteria Community of Sunit Sheep WANG Weihao, DUAN Yan, WANG Hongdi, DOU Lu, LIU Ting, KANG Letian, SUN Lina, AO Tehenggerile, JIN Ye(1085)
- Dynamic Changes of Gut Microbiota Composition and Its Predicted Metabolism Function in One-month-old Sucking Lambs YE Qianwen, CHEN Zhuo, LI Xin, SUN Yawei, JIN Xiaoye, LI Ziqian, WUMAIERJIANG · Yahefu, ZHONG Qi, MA Xuelian, YAO Gang(1095)
- Effects of Zearalenone on Growth Performance, Gastrointestinal Fermentation and Microbiota Community Structure of Goats YAN Qiongxin, CHEN Wenxun, HUI Haoyang, PENG Can, TANG Shaoxun, ZHOU Xiaoling, TAN Zhiliang(1109)
- Comparative Analysis of Digestive Physiology, Immunity and Gut Microbiota of Sichuan White Goose with Different Body Weight YUAN Yancong, HE Hang, LIU Anfang, WAN Kun, ZHANG Jie(1124)
- Effects of *Schizophyllum* Fermented Products on Production Performance, Egg Quality and Cecum Microorganism of Laying Hens DING Xiaowei, HE Wanling, LI Xiaoli, DING Meijie, YANG Longbang(1135)
- Effect of Dietary Urea Supplementation on Liver Ammonia Metabolism in Fattening Hu Lambs Based on Transcriptome Sequencing SUN Meijie, CAO Liwen, ZHENG Wenjin, SHEN Junshi, ZHU Weiyun(1148)

PREVENTIVE VETERINARY MEDICINE

- Inhibitory Effect of Dicumarol on Highly Pathogenic Porcine Reproductive and Respiratory Syndrome Virus *in vitro* LI Zhuowei, WANG Fang, WANG Junjun, CHEN Zhenhan, LI Huanrong, ZHOU Shuanghai, LIU Xuewei(1160)
- Establishment of a Lentiviral Vector-mediated Stable Expression of eIF5A Cell Line and Its Effect on Porcine Reproductive and Respiratory Syndrome Virus Propagation LI Huawei, WANG Xuying, QIAO Hongxing, LI Xinfeng, JI Xiangbo, GUO Kewei, YANG Zhongyuan(1169)
- Screening and Identifying of Host Proteins that Inhibit Pseudorabies Virus Replication HE Wenfeng, LI Chen, CHANG Hongtao, LI Longxi, CHEN Jing, YANG Guoqing, LIU Huimin(1177)
- A Preliminary Research of the Regulation of MAPK-CDK6-RB Pathway by *Salmonella* SptP in Macrophages YAO Min, SHI Bomei, HUANG Tinghua(1187)
- Genomic Analysis of *Salmonella* Typhimurium Isolates and *Salmonella* Serotype 4,[5],12:i:- Isolates from Pig-borne Food Chain JIANG Zenghai, TENG Lin, HE Anwen, LIU Yanyan, YUE Min, HE Qigai(1199)

BASIC VETERINARY MEDICINE

- The Influence of *Brucella* Type IV Secretes System Effector Protein VceC on Endoplasmic Reticulum Stress and Gonadal Hormone Secretory in Goat Trophoblast Cells XIANG Caixia, WANG Xiangguo, LI Junmei, ZHI Feijie, FANG Jiaoyang, ZHENG Weifang, CHEN Jialu, JIN Yaping, WANG Aihua(1210)
- Effects of TET1 Gene on the Proliferation of Mouse uNK Cells and the Transcriptional Level of IFN- γ , VEGF-C and TGF- β 1 YANG Xiaowei, ZHAO Ziliang, FU Yu, YU Zixiao, ZHAO Yongju(1221)
- Effect of Met-enkephalin on Lipopolysaccharide-stimulated Proliferation of Bovine Endometrial Stromal Cells SUN Wenye, LI Jianji, WANG Heng, DONG Junsheng, LI Jun, CUI Luying(1229)
- Intestinal Absorption Characteristics of Florfenicol based on Oligopeptide Transporters CHEN Yang, WANG Yueyi, CHEN Shiqi, LI Nanxin, ZHANG Wei, SHU Gang, XU Funeng, LI Haohuan, LIN Juchun, FU Hualin(1240)
- Establishment of Acute Stress Model and Screening of Diagnostic Markers in Cats ZHANG Haiyang, ZHU Qiuixiang, GAO Zhicheng, JIA Kun, WANG Jingyu, JI Jinzhao, LIANG Wuying, MO Ruiwen, LI Shoujun(1249)

CLINICAL VETERINARY MEDICINE

- Effect of Polyactin A on Immune Function, Intestinal Barrier and Intestinal Flora in Dogs with Ulcerative Colitis WANG Qian, WANG Jianmei, AN Keying, XIA Zhaofei(1261)
- Protective Effect of Aurantiamide Acetate on Cd-induced Apoptosis of Osteoblasts *in vitro* CHANG Yingyan, ZHAO Hongyan, HU Maozhi, LIU Zongping(1273)
- Study on Biological Activity of the Residue and Fermentation Products of Lianhua Qingwen LIU Guang, GONG Chengyan, NIU Kaimin, ZHANG Shuo, TAO Deng, MA Jun, WU Xin, YIN Yulong, TANG Yulong(1281)
- Antibacterial Activity of Martine against Bovine *Streptococcus agalactiae* *in vitro* HUO Xiangyu, GAO Jiarui, JIN Jiaqi, LI Yan, GAO Yuan, LIU Menghan, JIANG Linshu, TONG Jinjin(1300)
- Expression and Prognosis of Hexokinase 2 in Canine Mammary Tumors XU Huihao, LIU Jiangyu, LI Qijuan, ZHENG Xiaobo, LIN Jiahao, JIN Yipeng, LIN Degui(1310)
- Retrospective Analysis of Clinical Features and Treatment Response of Feline Pruritic Skin Diseases YAN Lang, LI Xinqiu, GAO Pingping, JIANG Wanlu, ZHANG Di(1325)

RESEARCH NOTES

- Detection of Bovine Adenovirus Type 3 Infection Status and Its Fiber Shaft Gene HE Shufan, ZOU Yuantong, HUANG Zhilan, LI Qian, JIANGCUO Wengxi, YUE Hua, TANG Cheng, LIU Jie(1333)
- Molecular Serotyping and Apx Gene Profile Analysis of *Actinobacillus pleuropneumoniae* Isolates LU Bikai, YUAN Xiufang, XU Lihua, YU Bin, SU Fei, YE Shiyi, CHEN Yijie, JIANG Liming, ZHANG Hui, LI Junxing(1341)

《畜牧兽医学报》第六届编辑委员会成员

顾问 [张子仪] 刘守仁 吴常信 夏咸柱 刘秀梵

主任委员 陈焕春

副主任委员 阎汉平 汪 明 苏振环 时建忠

编委成员 (按姓名英文字母/汉字笔画排序)

Chris Anderson David Lindsay Graham Gardner W.Bruce Currie
马月辉 王加启 方维焕 宁宜宝 卢德勋 朱士恩 朱兴全 刘湘涛 余锐萍
杜立新 戴于明 陆承平 陈溥言 陈瑶生 李 奎 李庆章 李学伟 李德发
沙玉圣 张 涌 张仲秋 张家骅 沈建忠 杨 宁 罗绪刚 孟庆翔 郑友民
周继勇 姜 平 赵兴绪 赵茹茜 夏国良 涂长春 郭万柱 黄维义 崔治中
童光志 蒋小松 舒鼎铭

名誉主编 陈幼春 蒋金书

主编 文杰

副主编 张沅 时建忠 汪 明 杨汉春 于康震 王立贤 任 鹏

编辑部主任 孟培

主编 文杰

广告部主任 程金华 本期责任编辑 白永平

畜牧兽医学报
(月刊,1956年创刊)
2023年第54卷 第3期
2023年3月23日出版
主管 中国科学技术协会
主办 中国畜牧兽医学会
编辑 《畜牧兽医学报》编委会
中国农业科学院北京畜牧兽医研究所
地址 北京海淀区圆明园西路2号
邮编 100193
电话 010-62815987 62816996 62893836
网址 <http://www.xmsyxb.com>
电子邮箱 xmsyxb@caas.cn
出版单位 《中国畜牧兽医杂志》有限公司
印刷 北京科信印刷有限公司
国内总发行 中国邮政集团公司北京市报刊发行局
国外总发行 中国国际图书贸易集团有限公司
(中国国际书店)北京399信箱
订购 全国各地邮局
中国标准连续出版物号 ISSN 0366-6964
CN 11-1985/S

ACTA VETERINARIA ET ZOO TECHNICA SINICA
(Monthly, Started in 1956)
Vol. 54 No. 3 2023
Published on Mar. 23, 2023
Supervised by China Association for Science and Technology
Sponsored by Chinese Association of Animal Science and Veterinary Medicine
Edited by Editorial Board of the ACTA VETERINARIA ET ZOO TECHNICA SINICA
Institute of Animal Science,Chinese Academy of Agricultural Sciences
Address No.2 West Road Yuanmingyuan, Haidian Beijing, China. Post Code 100193
Telephone 010-62815987 62816996 62893836
Website <http://www.xmsyxb.com>
E-mail xmsyxb@caas.cn
Published by Chinese Journal of Animal Science and Veterinary Medicine Co.,Ltd
Printed by Beijing Kexin Printing Co.,Ltd
Distributed by Domestic Beijing Post Office, China Post Group Corporation
Overseas China International Book Trading Corporation, P.O.Box 399