

# 中文目次

## 综述

- 3571** 微/纳米塑料对厌氧消化系统影响的研究进展  
李浩, 林任章, 孔祥聿, 任浩, 吕镇梅
- 3591** 天然生物活性分子抗伪狂犬病毒感染的研究进展  
代宇, 刘直雨, 叶超
- 3610** 肠道菌群与帕金森病关系的研究进展  
王玉静, 解瑞宁, 贾双双, 李雅青, 乔艺
- 3620** 基因工程法在微生物系统表达抗菌肽的研究进展  
邵长轩, 付艳雪, 方禹鑫, 董娜, 单安山
- 3633** 短梗霉普鲁兰多糖合成和调控的研究进展  
徐澜, 王宇杰, 池振明, 刘光磊
- 3647** 抗菌肽LL-37胞内诱导表达机制的研究进展  
张孟捷, 李晓飞, 李云露, 焦新安, 黄金林
- 3656** 疫苗安全性视角下的肺炎链球菌荚膜多糖制备工艺研究进展  
李跃龙, 王剑龙, 刘建凯, 郑海发
- 3670** 噬菌体防治细菌生物被膜相关感染的研究进展  
贺丽莎, 杨灼, 冉蕾, 陈红伟, 杨洪早

## 研究报告

- 3685** 甘蔗鞭黑粉菌拮抗菌鉴定及特性研究  
李楠, 孙大智, 王紫薇, 曹晶晶, 汪志琴, 赵盼, 仲乃琴
- 3702**  $\gamma$ -聚谷氨酸配施化肥对新疆棉田土壤微生物群落结构及功能的影响  
陶龙锦, 张经博, 董正武, 张雨思, 刘隋赞昊
- 3723** 芽囊原虫的分离鉴定及致病性分析  
曹梦娟, 黄晶, 崔琰, 南汇珠, 张晁, 马磊
- 3735** 茂原链霉菌XM4的TGase酶学性质分析及其高产菌株的构建  
修涵, 李子龙, 袁方, 李国莹, 王为善, 毛淑红
- 3749** 植物乳杆菌LP15发酵牛骨泥的应用  
胡扬帆, 王文清, 裴敏豆, 刘庆, 于波
- 3762** 基于转录组学分析刺糖多孢菌多杀菌素合成代谢途径关键酶基因挖掘  
王晓宇, 蔡朝辉, 乔长晟, 薛超友
- 3780** 黄河内蒙古段水体氧化亚氮溶存浓度、水-气界面排放通量和沉积物微生物群落结构  
乌音嘎, 王晓丽, 阿如汗, 吴霞, 虹霞, 贺晓雯, 刘娜

- 3798** 在flashBAC杆状病毒表达系统中制备人G II.4型诺如病毒样颗粒  
刘志鹏, 肖锦宁, 段良伟, 王琼梓, 王向鹏
- 3809** 山核桃根际解磷及水解复杂有机物细菌的分离  
张艳梅, 郑梦杰, 杨士杰, 吴权杰, 黄坚钦, 彭丽媛, 秦华
- 3825** *napF3*调控嗜热嗜热厌氧杆菌热适应机制  
王若彤, 刘亚娟, 郑航辉, 陈宜军, 万学瑞, 赵春林, 王川, 杨宇泽
- 3840** 一种瘤胃木聚糖酶的酶学特性分析及其对农作物秸秆的水解作用  
汤龙章, 邱清华, 刘婵娟, 付戴波, 欧阳克蕙, 赵向辉
- 3853** 猴耳环水提物对水产病原菌的抑菌活性及其机制  
吴文豪, 郭梓泓, 张家豪, 孙龔鑫, 唐姝, 刘春, 李薇, 江飏, 苏友禄
- 3869** 野生和栽培种西瓜根系内生微生物群落结构比较  
邱卢露, 何紫薇, 田萱, 黄金艳, 李桂芬, 杨尚东, 何毅, 潘永鹏
- 3886** 芽孢杆菌无细胞上清液对致腐隆德假单胞菌单/混合生物被膜的抑制活性(英文)  
吴诗媛, 鲁重, 石鸿辉, 张俊, 陆海霞, 朱军莉
- 3901** 唾液宿主关联乳杆菌ATCC 11741益生特性  
梅雪锋, 华德平, 田雨菁, 黄金海, 张蕾
- 3916** 魔芋软腐病拮抗菌GZA12的分离鉴定及其防病促生作用  
钟宇, 牛莉莎, 曾雨洁, 吴涓, 任祺, 唐佐芯, 魏薇, 魏环宇, 曹振亮, 贾博轩, 王小晓, 罗志斌, 王瑞聪, 夏体渊
- 3932** 猪流行性腹泻病毒非结构蛋白Nsp8与宿主细胞互作蛋白的筛选与鉴定  
涂赞, 于瑞明, 张莉萍, 王永录, 潘丽, 刘霞, 杜晓华, 刘新生
- 3945** 一株聚乳酸降解菌的筛选、鉴定及其降解特性  
张静, 吴涓, 窦月芹, 徐杰
- 3958** 基于异源表达和甲基化修饰制备抗自切重组胰蛋白酶  
于文娟, 许伟洲, 孙娜娜, 孙颖, 李玉强, 杨霁茵, 路福平, 王洪彬
- 3968** 一株高产胞外多糖巨大芽孢杆菌的筛选鉴定、发酵条件优化及其对土壤团聚体的影响  
刘丙花, 丁延芹, 刘方春, 刘幸红, 马胜国, 彭琳, 孙铭婕, 于连家, 马海林
- 3980** 金霉素添加对有机培肥土壤中磷循环微生物介导的磷素转化和有效性的影响  
尹江琴, 李佳颖, 刘顺利, 谢小雨, 陈新平, 郎明

# CONTENTS

## REVIEWS

- 3571** Research progress in the effects of micro(nano)plastics on anaerobic digestion system  
LI Hao, LIN Renzhang, KONG Xiangyu, REN Hao, LU Zhenmei
- 3591** Research progress on natural bioactive molecules against pseudorabies virus infection  
DAI Yu, LIU Yiyu, YE Chao
- 3610** Research progress in the relationship between gut microbiota and Parkinson's disease  
WANG Yujing, XIE Ruining, JIA Shuangshuang, LI Yaqing, QIAO Yi
- 3620** Research progress in the expression of antimicrobial peptides in microbial systems by genetic engineering  
SHAO Changxuan, FU Yanxue, FANG Yuxin, DONG Na, SHAN Anshan
- 3633** Research progress in the synthesis and regulation of pullulan in *Aureobasidium* spp.  
XU Lan, WANG Yujie, CHI Zhenming, LIU Guanglei
- 3647** Research progress on the mechanism of intracellular-induced expression of antimicrobial peptide LL-37  
ZHANG Mengjie, LI Xiaofei, LI Yunlu, JIAO Xin'an, HUANG Jinlin
- 3656** Research progress in the manufacturing process of *Streptococcus pneumoniae* capsular polysaccharide from the perspective of vaccine safety  
LI Yuelong, WANG Jianlong, LIU Jiankai, ZHENG Haifa
- 3670** Research progress of phages in prevention and treatment of bacterial biofilm-associated infections  
HE Lisha, YANG Zhuo, RAN Lei, CHEN Hongwei, YANG Hongzao

## RESEARCH ARTICLES

- 3685** Identification and characterization of sugarcane *Sporisorium scitamineum* antagonists  
LI Nan, SUN Dazhi, WANG Ziwei, CAO Jingjing, WANG Zhiqin, ZHAO Pan, ZHONG Naiqin
- 3702** Effects of  $\gamma$ -polyglutamic acid combined with chemical fertilizer on soil microbial community structure and function in Xinjiang cotton fields  
TAO Longjin, ZHANG Jingbo, DONG Zhengwu, ZHANG Yusi, LIU Suiyuhao
- 3723** Isolation, identification, and pathogenicity of *Blastocystis* sp.  
CAO Mengjuan, HUANG Jing, CUI Yan, NAN Huizhu, ZHANG Chao, MA Lei
- 3735** Enzymatic properties of TGase from *Streptomyces mobaraensis* XM4 and construction of a high-yield strain of TGase  
XIU Han, LI Zilong, YUAN Fang, LI Guoying, WANG Weishan, MAO Shuhong
- 3749** Application of *Lactobacillus plantarum* LP15 in fermentation of bovine bone meal  
HU Yangfan, WANG Wenqing, PEI Mindou, LIU Qing, YU Bo
- 3762** Mining of crucial enzyme genes in the synthesis of spinosad in *Saccharopolyspora spinosa* based on transcriptomics  
WANG Xiaoyu, CAI Zhaohui, QIAO Changsheng, XUE Chaoyou
- 3780** Dissolved concentration of nitrous oxide, water-air interface emission flux, and sediment microbial community structure in the Inner Mongolia section of the Yellow River  
Wuyinga, WANG Xiaoli, Aruhan, WU Xia, HONG Xia, HE Xiaowen, LIU Na

- 3798** Preparation of virus-like particles of human GII.4 norovirus in the flashBAC baculovirus expression system  
LIU Zhipeng, XIAO Jinning, DUAN Liangwei, WANG Qiongzi, WANG Xiangpeng
- 3809** Isolation of bacteria activating phosphorus and hydrolyzing complex organic matter from the rhizosphere soil of *Carya cathayensis* Sarg.  
ZHANG Yanmei, ZHENG Mengjie, YANG Shijie, WU Qianjie, HUANG Jianqin, PENG Liyuan, QIN Hua
- 3825** *napF3* regulates thermophilic mechanism of *Thermoanaerobacter tengcongensis*  
WANG Ruotong, LIU Yajuan, ZHENG Hanghui, CHEN Yijun, WAN Xuerui, ZHAO Chunlin, WANG Chuan, YANG Yuze
- 3840** Enzymatic properties and straw-degrading effect of a xylanase derived from rumen  
TANG Longzhang, QIU Qinghua, LIU Chanjuan, FU Daibo, OUYANG Kehui, ZHAO Xianghui
- 3853** Inhibitory activity and mechanism of aqueous extract from *Pithecellobium clypearia* against aquatic pathogenic bacteria  
WU Wenhao, GUO Zihong, ZHANG Jiahao, SUN Yanxin, TANG Shu, LIU Chun, LI Wei, JIANG Biao, SU Youlu
- 3869** Comparison of endophytic microbial community structure in roots between wild and cultivated watermelon varieties  
QIU Lulu, HE Ziwei, TIAN Xuan, HUANG Jinyan, LI Guifen, YANG Shangdong, HE Yi, PAN Yongpeng
- 3886** Cell-free supernatants of *Bacillus* inhibit the biofilms of *Pseudomonas lundensis* cultured with and without *Acinetobacter johnsonii*  
WU Shiyuan, LU Zhong, SHI Honghui, ZHANG Jun, LU Haixia, ZHU Junli
- 3901** Probiotic characteristics of *Ligilactobacillus salivarius* ATCC 11741  
MEI Xuefeng, HUA Deping, TIAN Yujing, HUANG Jinhai, ZHANG Lei
- 3916** An antagonistic bacterial strain GZA12 against soft rot of konjac: isolation, identification, and application in disease prevention and growth promotion  
ZHONG Yu, NIU Lisha, ZENG Yujie, WU Juan, REN Zhen, TANG Zuoxin, WEI Wei, WEI Huanyu, CAO Zhenliang, JIA Boxuan, WANG Xiaoxiao, LUO Zhibin, WANG Ruicong, XIA Tiyan
- 3932** Screening and identification of host proteins interacting with Nsp8 of porcine epidemic diarrhea virus  
TU Yun, YU Ruiming, ZHANG Liping, WANG Yonglu, PAN Li, LIU Xia, DU Xiaohua, LIU Xincheng
- 3945** Screening, identification, and degradation characterization of a polylactic acid-degrading bacterial strain  
ZHANG Jing, WU Juan, DOU Yueqin, XU Jie
- 3958** Preparation of an anti-autolysis recombinant trypsin based on heterologous expression and methylation  
YU Wenjuan, XU Weizhou, SUN Nana, SUN Ying, LI Yuqiang, YANG Jihan, LU Fuping, WANG Hongbin
- 3968** Screening, identification, fermentation condition optimization of an exopolysaccharide-producing strain and the influence on soil macro-aggregate formation  
LIU Binghua, DING Yanqin, LIU Fangchun, LIU Xinghong, MA Shengguo, PENG Lin, SUN Mingjie, YU Lianjia, MA Hailin
- 3980** Effects of chlortetracycline addition on phosphorus transformation and availability mediated by phosphorus cycling microorganisms in soil applied with organic fertilizer  
YIN Jiangqin, LI Jiaying, LIU Shunli, XIE Xiaoyu, CHEN Xinping, LANG Ming