

微生物学通报

(Weishengwuxue Tongbao)

1974 年创刊

第 52 卷 第 7 期

2025 年 7 月 20 日出版

月刊

目 次



专论与综述

- 2911 基于群体感应效应的 MBR 膜污染控制原理、实现途径及微生态响应
熊富忠, 温东辉
- 2935 球孢子菌和组织胞浆菌感染的实验室诊断研究进展
杨战奎, 陈芳艳, 韩黎
- 2945 微生物降解二甲酰亚胺类杀菌剂研究进展
许妍, 胡凯弟, 李琴, 刘书亮
- 2960 V 型质子泵对白色念珠菌生理及毒力作用的研究进展
龙胜兰, 王峰, 杨德琴
- 2972 新型抗菌材料的抗菌作用及机制研究进展
徐震东, 张润泽, 李达勋, 高俊龙, 石鑫楠, 申乙彤, 齐云峰
- 2984 微生物调控小麦金属元素吸收与积累的研究进展
师旖旎, 肖宏坤, 齐艳利, 李成伟, 孙忠科

研究报告

工业微生物学

- 2997 加强表达碳代谢全局转录因子对谷氨酸棒杆菌产 L-丝氨酸的影响
张薇, 张晓梅, 史劲松, 许正宏

海洋微生物学

- 3011 渤海水环境中浮游细菌和颗粒附着细菌群落组成及其氮循环功能预测分析
赵丹婷, 崔正国, 李秋芬, 单秀娟, 曲克明, 周易洲, 孙波, 迟赛赛, 王洋, 吴超

环境微生物学

- 3026 土壤细菌新 Mn(II)氧化蛋白 PomA 的异源表达及其酶学特性
郭岳帅, 曹董恒, 陈莎, 薛岚, 李丁
- 3039 霍氏肠杆菌 BG200 的分离鉴定及其镉耐受性和对镉胁迫下水稻生长的影响
毛双倍, 毛纯泽, 石於嘉, 樊雪静, 庄永亮, 万幸, 孙丽平
- 3058 复苏促进因子耦合解鸟氨酸柔武氏菌 CC12 降解氯霉素废水及其微生物群落的演替规律
徐伟龙, 徐展博, 刘思涵, 崔静, 赵雷真, 屈建航, 周佳
- 3071 藤黄微球菌拮抗菌株筛选及抑菌活性物质分离鉴定
汪赛月, 卢娣, 董占鹏, 刘慧美, 刘琴

基础微生物学

- 3084 Sigma B 对沙福芽孢杆菌锰胁迫响应及运动性和芽孢形成的影响
付雨婷, 韦永琴, 牛熙, 黄世会, 王嘉福, 冉雪琴

基因克隆及功能研究

- 3098 D-阿洛酮糖 3-差向异构酶的功能表征及其高活性突变体的高通量筛选
高鑫, 杨锋, 毛淑红, 路福平, 秦慧民

农业微生物学

- 3111 玉米茎腐病生防菌株的筛选鉴定及其田间防效
贾师奇, 刘烨欣, 王紫宸, 藏金萍, 张康, 董金皋, 司贺龙, 邢继红

- 3124** 西洋参幼苗内生真菌多样性及其与代谢之间的关联性分析
毛欣颖, 丁宇, 王悦, 陈田, 刘子琪, 王汝振, 方磊, 周洁
- 3145** 猕猴桃软腐病菌鉴定及诱导产孢方法
宋金黄, 张丽华, 谭红, 樊荣
- 3156** 优势复合菌对烟草秸秆的降解特性及应用潜力
卢肖肖, 刘京, 范剑渝, 周郑刚, 谢世爽, 王坡, 杨革, 黄莺
- 3165** 极端耐旱链霉菌 D67 对梨火疫病原菌毒力因子的抑制作用
江星彤, 柏晓玉, 冯玉莲, 李雪, 李梅, 朱艳蕾, 张志东
- 3176** 遥罗炭疽菌 C2H2 型转录因子 CsCreA 参与调控营养生长、胁迫响应、孢子发育及致病性
许寅翼, 韦涵文, 林少园, 唐雯, 柳志强, 李晓宇
- 兽医微生物学**
- 3187** 一株瘤胃源产丁酸肠道罗斯拜瑞氏菌的筛选鉴定及培养条件优化
张吉贤, 范定坤, 杨东, 毕研亮, 崔凯, 张乃锋
- 3202** 一株绵羊源粪肠球菌的分离鉴定、生理特性及全基因组分析
田黎明, 章焕, 张淑红, 张成, 邱腾刚, 常盟涵, 王冠, 高丰衣, 李少斌, 杨广礼
- 医学微生物学**
- 3222** 运动通过微生物-肠-脑轴调控 NF- κ B/NLRP3 通路抑制细胞焦亡改善肥胖相关认知障碍
雷森林, 谌晓安, 宋为正, 李先辉, 王兆峰

技术与方法

- 3245** 酶促重组等温扩增结合的胶体金侧流层析检测鹦鹉热衣原体
邹林涛, 宋宇琪, 罗格妙, 周璇, 邓仲良
- 3255** 重度盐碱地细菌的资源分离培养方法
谭寿生, 谭心许, 李怡君, 杨芾, 韦善君, 张晓霞

经验交流

- 3271** 响应面法优化贝莱斯芽孢杆菌 F-37 抑制青枯劳尔氏菌活性
张佳佳, 崔文艳, 舒慧琳, 罗喜燕, 张恺琦, 何朋杰

前瞻与评论

- 3285** 基于 Web of Science 的用于碳捕集的碳酸酐酶研究分析
胡耀峰, 程从雨, 李为, 余龙江

高校教改纵横

- 3302** 面向生物经济人才培养的酶工程课程教学思考与探索
赵安琪, 伊娟娟, 吕永坤, 王志, 张一折, 许敬亮
- 3314** 基于 OBE 理念的“三阶递进式”教学模式在食药用菌生产工艺学课程中的设计与实践
朱晓琴, 周庆峰, 陈晓俊, 裴冬丽, 宋兆齐, 邓丹丹, 侯红件
- 3326** 新医科背景下医学微生物学实验教学改革探索与实践
王艳凤, 赵国星, 刘艳华, 路玲玲, 彭茜, 刘寅
- 3340** 赛培研有机融合培养工业微生物育种新质人才
杨套伟, 潘学伟, 邵明龙, 徐美娟, 张显, 张玲, 段作营, 陈献忠, 饶志明
- 3350** “三全育人”背景下成长档案袋在医学微生物学教学中的应用
周晶, 卢曙光, 胡启文, 李明, 赵岩, 李刚, 胡晓梅, 杨裔, 乐率, 饶贤才
- 3362** 基于实践和应用能力培养的微生物学教学课程设计探索
刘晓亭, 李子, 刘磊, 汪楠楠, 孙艳华
- 3378** 突显发酵工程特色的“一核-二融-三通-四链”专业学位研究生培养体系探索与实践
张悦, 杨帆, 殷红玲, 范超, 洪皓, 陈历俊, 陈明



REVIEWS

- 2911 Quorum sensing-based fouling control in membrane bioreactors: mechanisms, strategies, and microbial ecological responses
XIONG Fuzhong, WEN Donghui
- 2935 Advances in laboratory diagnosis of *Coccidioides* and *Histoplasma* infections
YANG Zhankui, CHEN Fangyan, HAN Li
- 2945 Research progress in microbial degradation of dicarboximide fungicides
XU Yan, HU Kaidi, LI Qin, LIU Shuliang
- 2960 Research progress in the effects of V-ATPases on the physiology and virulence of *Candida albicans*
LONG Shenglan, WANG Zheng, YANG Deqin
- 2972 Progress in the research on antimicrobial effects and mechanisms of new antimicrobial materials
XU Zhendong, ZHANG Runze, LI Daxun, GAO Junlong, SHI Xinnan, SHEN Yitong, QI Yunfeng
- 2984 Research progress in microbial regulation of metal uptake and accumulation in wheat
SHI Yini, XIAO Hongkun, QI Yanli, LI Chengwei, SUN Zhongke

RESEARCH ARTICLES

Industrial Microbiology

- 2997 Effects of overexpression of global transcription factors of carbon metabolism on L-serine production by *Corynebacterium glutamicum*
ZHANG Wei, ZHANG Xiaomei, SHI Jinsong, XU Zhenghong

Marine Microbiology

- 3011 Free-living bacteria and particle-attached bacteria in the Bohai Sea water environment: community composition and roles in nitrogen cycling
ZHAO Danting, CUI Zhengguo, LI Qiufen, SHAN Xiujuan, QU Keming, ZHOU Yizhou, SUN Bo, CHI Saisai, WANG Yang, WU Chao

Environmental Microbiology

- 3026 Heterologous expression and enzymatic characterization of PomA, a novel Mn(II)-oxidizing protein derived from a soil bacterium
GUO Yueshuai, CAO Dongheng, CHEN Sha, XUE Lan, LI Ding
- 3039 Isolation and identification of *Enterobacter hormaechei* BG200 with cadmium tolerance and promoting effect on rice growth under cadmium stress
MAO Shuangbei, MAO Chunze, SHI Yujia, FAN Xuejing, ZHUANG Yongliang, WAN Xing, SUN Liping
- 3058 Coupling resuscitation-promoting factor (Rpf) with *Raoultella ornithinolytica* CC12 enhances degradation of chloramphenicol in wastewater: performance and microbial community succession
XU Weilong, XU Zhanbo, LIU Sihan, CUI Jing, ZHAO Leizhen, QU Jianhang, ZHOU Jia
- 3071 Screening of an antagonistic strain against *Micrococcus luteus* and isolation and identification of an antibacterial compound
WANG Saiyue, LU Di, DONG Zhanpeng, LIU Huimei, LIU Qin

Fundamentals of Microbiology

- 3084 Effects of sigma B on the manganese stress response, motility, and sporulation of *Bacillus safensis*
FU Yuting, WEI Yongqin, NIU Xi, HUANG Shihui, WANG Jiafu, RAN Xueqin

Microbial Genetics

- 3098 Functional characterization of D-allulose 3-epimerase and high-throughput screening of its highly active mutants
GAO Xin, YANG Feng, MAO Shuhong, LU Fuping, QIN Huimin

Agricultural Microbiology

- 3111 Screening and identification of a biocontrol strain against maize stalk rot and evaluation of its field control effect
JIA Shiqi, LIU Yixin, WANG Zichen, ZANG Jinping, ZHANG Kang, DONG Jingao, SI Helong, XING Jihong
- 3124 Endophytic fungal diversity and its correlation with metabolism in *Panax quinquefolius* seedlings
MAO Xinying, DING Yu, WANG Yue, CHEN Tian, LIU Ziqi, WANG Ruzhen, FANG Lei, ZHOU Jie

Microbiology China

- 3145 Identification of the pathogen causing kiwifruit soft rot and the conditions for inducing sporulation
SONG Jinhuang, ZHANG Lihua, TAN Hong, FAN Rong
- 3156 Degradation characteristics and application potential of dominant composite bacteria on tobacco straw
LU Xiaoxiao, LIU Jing, GOU Jianyu, ZHOU Zhenggang, XIE Shishuang, WANG Po, YANG Ping, HUANG Ying
- 3165 Inhibitory effects of extreme drought-resistant *Streptomyces* D67 on the virulence factors of *Erwinia amylovora*
JIANG Xingtong, BAI Xiaoyu, FENG Yulian, LI Xue, LI Mei, ZHU Yanlei, ZHANG Zhidong
- 3176 A C2H2 transcription factor CsCreA regulates vegetative growth, stress responses, conidial development, and pathogenicity of *Colletotrichum siamense*
XU Yinyi, WEI Hanwen, LIN Shaoyuan, TANG Wen, LIU Zhiqiang, LI Xiaoyu

Veterinary Microbiology

- 3187 Screening, identification, and culture condition optimization of a rumen-derived butyrate-producing *Roseburia intestinalis* strain
ZHANG Jixian, FAN Dingkun, YANG Dong, BI Yanliang, CUI Kai, ZHANG Naifeng
- 3202 Isolation, identification, physiological characterization, and complete genome analysis of a sheep-derived *Enterococcus faecalis* strain
TIAN Liming, ZHANG Huan, ZHANG Shuhong, ZHANG Cheng, DI Tenggang, CHANG Menghan, WANG Guan, GAO Fengyi, LI Shaobin, YANG Guangli

Medical Microbiology

- 3222 Exercise regulates the NF-κB/NLRP3 pathway via the microbiota-gut-brain axis to inhibit pyroptosis and ameliorate obesity-related cognitive impairment
LEI Senlin, CHEN Xiao'an, SONG Weizheng, LI Xianhui, WANG Zhaofeng
-

TECHNOLOGY AND METHOD

- 3245 Detection of *Chlamydia psittaci* by enzymatic recombinase amplification coupled with lateral flow immunochromatographic assay
ZOU Lintao, SONG Yuqi, LUO Gemiao, ZHOU Xuan, DENG Zhongliang
- 3255 Methods for isolating bacteria from heavy saline-alkali land
TAN Shousheng, TAN Xinxu, LI Yijun, YANG Fu, WEI Shanjun, ZHANG Xiaoxia
-

PROTOCOLS

- 3271 Optimization of fermentation medium formula and fermentation conditions for enhancing the inhibitory activity of *Bacillus velezensis* F-37 against *Ralstonia solanacearum* by response surface methodology
ZHANG Jiajia, CUI Wenyang, SHU Huilin, LUO Xiyan, ZHANG Kaiqi, HE Pengjie
-

PERSPECTIVES AND COMMENTS

- 3285 Analysis of carbonic anhydrase used for carbon capture based on Web of Science
HU Yaofeng, CHENG Congyu, LI Wei, YU Longjiang
-

EDUCATION

- 3302 Teaching reform of Enzyme Engineering for cultivating talents in bioeconomy
ZHAO Anqi, YI Juanjuan, LÜ Yongkun, WANG Zhi, ZHANG Yizhe, XU Jingliang
- 3314 Design and practice of a three-stage progressive teaching mode based on OBE philosophy for Edible and Medicinal Mushroom Production Technology
ZHU Xiaoqin, ZHOU Qingfeng, CHEN Xiaojun, PEI Dongli, SONG Zhaoqi, DENG Dandan, HOU Hongjian
- 3326 Exploration and practice of teaching reform of Medical Microbiology Experiment under the background of new medicine
WANG Yanfeng, ZHAO Guoxing, LIU Yanhua, LU Lingling, PENG Xi, LIU Yin
- 3340 Integration of competition, training, and research for cultivating new-quality talents in industrial microorganism breeding
YANG Taowei, PAN Xuewei, SHAO Minglong, XU Meijuan, ZHANG Xian, ZHANG Ling, DUAN Zuoying, CHEN Xianzhong, RAO Zhiming
- 3350 Application of portfolio in Medical Microbiology teaching under the background of "Three-wide Education"
ZHOU Jing, LU Shuguang, HU Qiwen, LI Ming, ZHAO Yan, LI Gang, HU Xiaomei, YANG Yi, LE Shuai, RAO Xiancai
- 3362 Exploration on the curriculum design of Microbiology for training practical skills and application ability
LIU Xiaoting, LI Zi, LIU Lei, WANG Nannan, SUN Yanhua
- 3378 Reform and exploration of professional degree postgraduate teaching system with "one core, two fusion, three channels, and four chains" highlighting the characteristics of fermentation engineering
ZHANG Yue, YANG Fan, YIN Hongling, FAN Chao, HONG Hao, CHEN Lijun, CHEN Ming