

# 微生物学通报

(Weishengwuxue Tongbao)



1974年创刊      第51卷 第10期      2024年10月20日出版  
月刊      目次

## 专论与综述

- 3781 鱼类病原真菌水霉及其防控研究进展  
程万, 肖丕清, 王素钦, 王伯华, 寻晴, 罗玉双
- 3805 弯曲杆菌在海洋热液系统的生态分布及环境适应  
郭祎喆, 王丽, 方家松
- 3822 金黄色葡萄球菌致膜损伤毒素及拮抗的天然药物研究进展  
薛喜博, 高毅玖, 黄筱琳, 毛慧霞, 张澳凯, 孙英健
- 3836 氟在口腔微生态作用中的研究进展  
杨洁如, 吕文飞, 胡欢, 任群利, 王苗, 李小兰, 刘建国, 王倩
- 3847 食用菌挥发性香味物质及分离鉴定技术研究进展  
张梦珂, 陈明杰, 余昌霞, 杨焕玲, 董沁, 查磊, 赵妍
- 3859 第二信使 cAMP 在细菌压力应激与毒力调节中的作用  
张昕阳, 张雪, 农月娟, 郭伟鸿, 薛云新, 朱伟伟, 赵西林
- 3877 细菌组氨酸激酶的信号转导机制及其在逆境响应中的作用  
赵晓薇, 梅方炜, 匡素芳, 彭仁

\*\*\*\*\*

## 研究报告

### 工业微生物学

- 3897 代谢工程改造热带假丝酵母高效合成 1,2,4-丁三醇  
李静芸, 夏媛媛, 沈微, 杨海泉, 陈献忠

### 环境微生物学

- 3910 黄河下游支流铬污染沉积物中耐 Cr(VI)真菌的分离及转化机制  
王青青, 曹宇, 李欣雷, 曾祥朋, 王强, 王瑞民, 王建英, 杨清香
- 3927 活性污泥微生物泛化种和特化种的构建机制与进化速率  
彭景, 张兰平, BOB Adyari, 廖明宇, 曹美仙, 于昌平, 胡安谊
- 3939 一株嗜碱盐单胞菌 ZB109 的生长特性及四氢嘧啶发酵条件的优化  
陶宇杰, 韩睿, 乔丽娟, 高翔, 邢江娃, 王嵘, 朱德锐
- 3954 固氮氧化亚铁钩端螺旋菌产次生矿物的条件优化及矿物鉴定  
张翠静, 张爽, 刘涛, 赵丹, 晏磊
- 3970 荒漠银砂槐根际、非根际细菌促生特性及促萌发作用  
朱艳蕾, 刘家勤, 黄永杰, 寇智宁, 乃菲赛·奴尔哈曼提
- 3987 随机过程主导吕梁不同生态系统土壤真菌群落构建  
李玉靖, 李瑞云, 李乔, 赵鹏宇, 王月, 田娜, 和雪婷
- 4004 黄色链霉菌耐受铁离子的胁迫机制  
张伟, 杨帅, 桑海洲, 万传星, 张利莉

### 基因克隆及功能研究

- 4018 高酶活枯草芽孢杆菌碱性磷酸酶 *phoA* 基因克隆表达及降解内毒素的应用  
毛婉, 熊梦霞, 李湘, 柳泰, 余兴龙

- 4028 基于转化相关重组克隆曲酸合成基因簇及其在黑曲霉中的异源整合表达  
赵宇欣, 谭宇洋, 高莹, 朱柏松, 张明怡, 曹威

#### 农业微生物学

- 4043 稻田高效固氮蓝细菌的筛选鉴定及其促生潜力  
王慧, 靳海洋, 陈哲, 靳鹏辉, 张燕辉, 胡天龙, 周蓉, 张静如, 蔺兴武, 谢祖彬
- 4058 肉苁蓉内生细菌多样性及功能菌株的分离筛选  
木尼热·木塔力甫, 艾尼江·尔斯满, 叶艺洁, 张芯语, 楚敏, 朱静, 王伟, 张志东
- 4075 蛹虫草液体发酵培育子实体及其营养成分、色素稳定性分析  
郑世仲, 林钦, 姜春玲, 杨义辉, 魏奇, 张维瑞, 刘盛荣
- 4089 黄骠盐碱地玉米根系内生真菌分离及耐盐促生功能  
张静, 张腾, 肖耀鹏, 葛申奥, 徐璐, 刘雪颖, 侯力峰, 曾凡力
- 4104 广西赭霉 X22 对苦瓜的促生防病作用及对叶际细菌群落的影响  
覃丽萍, 张艳, 农倩, 曾凤花, 林珊宇, 龙艳艳, 谢玲
- 4118 内蒙古和海南干旱地区芽孢杆菌和伯克霍德尔菌的耐旱性  
季翠, 骆晶晶, 刁琦, 王依嘉, 姜雪婷, 王一腾, 钱怡雯, 盛下放, 何琳燕
- 4132 不同种植年限银柴胡根际土壤微生物群落结构变化  
冯璐, 李振凯, 王红, 李海珊, 李彦青, 彭励
- 4149 拟康宁木霉 T-51 的固体发酵参数优化  
尤佳琪, 杨红娟, 朱丽华, 顾卫红, 曹碧婷, 吕铎, 胡政, 周成, 李超汉
- 4162 哈茨木霉 EMF910 对宁夏盐碱地区黄芪根腐病致病菌的防治作用  
张晓尘, 张红杰, 李生兵, 董振东, 龙澍普, 黄新国, 郭兰萍, 康传志, 梁健, 马小魁

#### 食品微生物学

- 4181 茶叶培养基对海洋冠突散囊菌代谢路径的调控  
任鸿宇, 张宁, 韩晓玉, 凌铁军

#### 兽医微生物学

- 4195 林麝缓慢葡萄球菌和大肠杆菌混合感染的病原分离鉴定及致病性  
吴杰, 伍茜, 程建国, 付文龙, 周磊, 刘洁, 丁慧, 罗燕, 杜荣胜, 张海玫
- 4212 一株林麝源丙二酸盐克罗诺杆菌的分离鉴定及其全基因组序列分析  
丁慧, 伍茜, 程建国, 吴杰, 龚杭, 刘洁, 杨凯惟, 周磊, 付文龙, 罗燕
- 4230 山东某规模化鸡场鸡毒支原体的分离鉴定、基因分型、耐药性和致病性分析  
周峰, 王晨燕, 侯博, 郭锦玥

#### 医学微生物学

- 4245 苏州市沙门氏菌血清型、耐药及多位点序列分型分析  
王小龙, 邹文燕, 朱莉勤, 张梦寒, 沈强

\*\*\*\*\*

### 经验交流

- 4257 东方蝾螈肠道菌分离鉴定及产纤维素酶菌株的筛选与酶活力测定  
陈广青, 陈芳敏, 王琪, 付晶晶, 夏琬婷, 王金星

\*\*\*\*\*

### 前瞻与评论

- 4270 全球微生物群系研究态势分析  
高倩, 李晓南, 江洪

\*\*\*\*\*

### 高校教改纵横

- 4292 专创融合背景下“互联网+”创新创业大赛与微生物学课程赛教融合的实践  
毛露甜, 王春玲, 王艳君, 陈兆贵, 练英铎, 谢海伟, 冀霞

**REVIEWS**

- 3781 Pathogenic fungi of *Saprolegnia* in fish and prevention measures: a review  
CHENG Wan, XIAO Piqing, WANG Suqin, WANG Bohua, XUN Qing, LUO Yushuang
- 3805 Ecological distribution and environmental adaptation of *Campylobacteria* in marine hydrothermal systems  
GUO Yizhe, WANG Li, FANG Jiasong
- 3822 Research progress in membrane-damaging toxins of *Staphylococcus aureus* and natural anti-toxin medicines  
XUE Xibo, GAO Yijiu, HUANG Xiaolin, MAO Huixia, ZHANG Aokai, SUN Yingjian
- 3836 Research progress in the effects of fluoride on oral microecology  
YANG Jieru, LV Wenfei, HU Huan, REN Qunli, WANG Miao, LI Xiaolan, LIU Jianguo, WANG Qian
- 3847 Research progress in volatile odor components of edible fungi and their separation and identification techniques  
ZHANG Mengke, CHEN Mingjie, YU Changxia, YANG Huanling, DONG Qin, ZHA Lei, ZHAO Yan
- 3859 Roles of the second messenger cAMP in bacterial stress responses and virulence regulation  
ZHANG Xinyang, ZHANG Xue, NONG Yuejuan, GUO Weihong, XUE Yunxin, ZHU Weiwei, ZHAO Xilin
- 3877 Bacterial histidine kinases: signal transduction mechanisms and roles in stress responses  
ZHAO Xiaowei, MEI Fangwei, KUANG Sufang, PENG Ren

\*\*\*\*\*

**RESEARCH ARTICLES****Industrial Microbiology**

- 3897 Metabolic engineering of *Candida tropicalis* for efficient production of 1,2,4-butanetriol  
LI Jingyun, XIA Yuanyuan, SHEN Wei, YANG Haiquan, CHEN Xianzhong

**Environmental Microbiology**

- 3910 Isolation and transformation mechanism of Cr(VI)-tolerant fungi from Cr-contaminated sediments in the downstream tributary of the Yellow River  
WANG Qingqing, CAO Yu, LI Xinlei, ZENG Xiangpeng, WANG Qiang, WANG Ruimin, WANG Jianying, YANG Qingxiang
- 3927 Assembly mechanisms and evolutionary rates of microbial generalists and specialists in activated sludge  
PENG Jing, ZHANG Lanping, BOB Adyari, LIAO Mingyu, CAO Meixian, YU Changping, HU Anyi
- 3939 *Halomonas alkaliphila* ZB109: growth characterization and optimization of fermentation conditions for ectoine accumulation  
TAO Yujie, HAN Rui, QIAO Lijuan, GAO Xiang, XING Jiangwa, WANG Rong, ZHU Derui
- 3954 Condition optimization and identification of secondary minerals produced by *Leptospirillum ferrodiazotrophum*  
ZHANG Cuijing, ZHANG Shuang, LIU Tao, ZHAO Dan, YAN Lei
- 3970 Growth-promoting properties and germination-promoting effects of rhizosphere and nonrhizosphere bacteria of *Ammodendron bifolium* in deserts  
ZHU Yanlei, LIU Jiaqin, HUANG Yongjie, KOU Zhining, Naifeisai Nuerhamanti
- 3987 Stochastic processes dominate the assembly of soil fungal communities in different ecosystems of Lüliang  
LI Yujing, LI Ruiyun, LI Qiao, ZHAO Pengyu, WANG Yue, TIAN Na, HE Xueting
- 4004 Iron tolerance mechanism of *Streptomyces flavus*  
ZHANG Wei, YANG Shuai, SANG Haizhou, WAN Chuanxing, ZHANG Lili

**Microbial Genetics**

- 4018 The alkaline phosphatase gene *phoA* from a *Bacillus subtilis* strain with high enzyme activity: cloning, expression, and application in degrading endotoxin  
MAO Wan, XIONG Mengxia, LI Xiang, LIU Tai, YU Xinglong
- 4028 Transformation-associated recombination cloning and integrated expression of biosynthetic gene cluster for kojic acid in *Aspergillus niger*  
ZHAO Yuxin, TAN Yuyang, GAO Ying, ZHU Baisong, ZHANG Mingyi, CAO Wei

# Microbiology China

## Agricultural Microbiology

- 4043 Screening and identification of efficient nitrogen-fixing cyanobacteria with plant growth-promoting potential from paddy fields  
WANG Hui, JIN Haiyang, CHEN Zhe, JIN Penghui, ZHANG Yanhui, HU Tianlong, ZHOU Rong, ZHANG Jingru, LIN Xingwu, XIE Zubin
- 4058 Diversity of endophytic bacteria and screening of functional strains from *Cistanche deserticola*  
Munire Mutalifu, Ainijiang Ersiman, YE Yijie, ZHANG Xinyu, CHU Min, ZHU Jing, WANG Wei, ZHANG Zhidong
- 4075 *Cordyceps militaris* fruiting bodies: cultivation by liquid fermentation, nutrient composition, and pigment stability  
ZHENG Shizhong, LIN Qin, JIANG Chunling, YANG Yihui, WEI Qi, ZHANG Weirui, LIU Shengrong
- 4089 Isolation of endophytic fungi from the roots of maize in the saline-alkaline land in Huanghua and screening of strains improving salt tolerance and growth of maize  
ZHANG Jing, ZHANG Teng, XIAO Yaopeng, GE Shen'ao, XU Lu, LIU Xueying, HOU Lifeng, ZENG Fanli
- 4104 The effects *Ochroconis guangxiensis* X22 on preventing powdery mildew, promoting growth, and regulating phyllosphere bacterial community of *Momordica charantia*  
QIN Liping, ZHANG Yan, NONG Qian, ZENG Fenghua, LIN Shanyu, LONG Yanyan, XIE Ling
- 4118 Drought tolerance of *Bacillus* spp. and *Burkholderia* spp. in arid areas of Inner Mongolia and Hainan  
JI Cui, LUO Jingjing, DIAO Qi, WANG Yijia, JIANG Xueting, Wang Yiteng, Qian Yiwen, SHENG Xiafang, HE Linyan
- 4132 Changes of rhizosphere soil microbial community structure of *Stellaria dichotoma* L. var. *lanceolata* Bge. planted for different years  
FENG Lu, LI Zhenkai, WANG Hong, LI Haishan, LI Yanqing, PENG Li
- 4149 Optimization of solid-state fermentation parameters for the biocontrol strain *Trichoderma koningiopsis* T-51  
YOU Jiaqi, YANG Hongjuan, ZHU Lihua, GU Weihong, CAO Biting, LYU Duo, HU Zheng, ZHOU Cheng, LI Chaohan
- 4162 The control effect of *Trichoderma harzianum* EMF910 on the root rot pathogens of *Astragalus membranaceus* in Ningxia saline-alkali regions  
ZHANG Xiaochen, ZHANG Hongjie, LI Shengbin, DONG Zhengdong, LONG Shupu, HUANG Xinguo, GUO Lanping, KANG Chuanzhi, LIANG Jian, MA Xiaokui

## Food Microbiology

- 4181 Regulation of metabolic pathways of ocean originated *Eurotium cristatum* by tea leaf medium  
REN Hongyu, ZHANG Ning, HAN Xiaoyu, LING Tiejun

## Veterinary Microbiology

- 4195 Isolation, identification, and pathogenicity of mixed infection of *Staphylococcus lentus* and *Escherichia coli* in *Moschus berezovskii*  
WU Jie, WU Xi, CHENG Jianguo, FU Wenlong, ZHOU Lei, LIU Jie, DING Hui, LUO Yan, DU Rongsheng, ZHANG Haimei
- 4212 Isolation, identification, and whole genome sequencing of *Cronobacter malonaticus* from forest musk deer  
DING Hui, WU Xi, CHENG Jianguo, WU Jie, GONG Hang, LIU Jie, YANG Kaiwei, ZHOU Lei, FU Wenlong, LUO Yan
- 4230 Isolation, identification, genotyping, antibiotic resistance, and pathogenicity of *Mycoplasma gallisepticum* from a chicken farm in Shandong  
ZHOU Feng, WANG Chenyan, HOU Bo, GUO Jinyue

## Medical Microbiology

- 4245 Serotypes, drug resistance, and multilocus sequence types of *Salmonella* isolates in Suzhou  
WANG Xiaolong, ZOU Wenyan, ZHU Liqin, ZHANG Menghan, SHEN Qiang

\*\*\*\*\*

## PROTOCOLS

- 4257 Screening and enzyme activity determination of cellulase-producing strains from the gut bacteria of *Gryllotalpa orientalis*  
CHEN Guangqing, CHEN Fangmin, WANG Qi, FU Jingjing, XIA Wanting, WANG Jinxing

\*\*\*\*\*

## PERSPECTIVES AND COMMENTS

- 4270 Global research landscape of microbiome  
GAO Qian, LI Xiaonan, JIANG Hong

\*\*\*\*\*

## EDUCATION

- 4292 Practice on the integration of "Internet plus" innovation and entrepreneurship competition and microbiology course competition under the background of Specialty-and-Creation integration  
MAO Lutian, WANG Chunling, WANG Yanjun, CHEN Zhaogui, LIAN Yingduo, XIE Haiwei, JI Xia