

I 导读

综述

- 3861 活细菌作为抗肿瘤药物递送载体的研究进展
华婷婷, 郑斌, 白洋
- 3872 病原核酸CRISPR-Cas可视化检测方法研究进展
胡祐, 陈中甫, 张师音, 葛胜祥
- 3888 免疫代谢物衣康酸对不同疾病调控作用及其作用机制研究进展
程钟坤, 赵静贤, 刘言言, 徐凌, 赵光伟, 倪兴维, 杨晓伟
- 3902 小G蛋白Rac1的研究进展
杨以恒, 赵淑玲, 梁昌镛
- 3912 人工智能时代下的蛋白质从头设计
刘南, 金小程, 杨崇周, 王梓洋, 闵小平, 葛胜祥
- 3930 mRNA疫苗翻译效率的研究进展
刘涛, 王升启, 李伍举
- 3951 前列腺癌生物标志物研究进展
初子斌, 徐焯, 殷自强, 曹敬峰, 金成宇, 陈晓阳, 杨昭
- 3974 双/多特异性抗体药物差异化研发策略
李栋
- 3985 抗体技术在食源性致病菌快速检测中的研究进展
全美淋, 李飞, 刘金燕, 王婷婷, 年锐, 刘文帅, 张鸣, 池哲
- 4006 重组蛋白产业化中内毒素的去除、检测及限值
刘书岩, 田文华, 李玲, 张蕻, 王建, 于玉凤
- 4019 刺激响应型微针的研究进展
张佳, 苏旸, 赵童童, 董良润, 纪蕾, 严莉贻, 王思宁, 陈毅

医药生物技术

- 4042 H1N1、H3N2亚型流感病毒Mosaic-HA1的表达及对小鼠的免疫原性评价
韩菲, 焦鹏涛, 林润山, 李和桥, 马嘉宁, 裴汉中, 张鹤, 孙蕾, 罗廷荣, 郑敏, 范文辉, 刘文军
- 4057 核仁复合孔相关蛋白4在活化T细胞中的功能探索
尹家军, 郭洁, 张建华
- 4071 靶向识别新型冠状病毒上刺突蛋白S1亚基的嵌合型E3泛素连接酶的设计与功能验证
代艳, 林佳雨, 张肖雅, 逯浩睿, 饶朗
- 4084 生殖支原体GroEL蛋白的生物信息学分析、表达纯化及致炎分析
陈丽, 苏晓玲, 罗浩荡, 王婧芸, 廖道庸, 甘甜, 于建威, 何军
- 4098 分枝菌酸小杆菌不同生长周期的磷酸化蛋白质定量表达比较
徐丹洋, 高媛, 施佳辉, 姜松昊, 薛宇, 张瑶

- 4111 口服表达尿酸氧化酶的乳酸乳球菌调控小鼠血尿酸水平
程昊, 熊国庆, 崔佳珍, 陈志励, 朱晨, 宋娜, 王庆阳, 熊向华, 刘刚, 陈惠鹏
- 4120 基于分子对接筛选并探究中药活性单体对大肠埃希菌生物被膜的作用
杨灿, 冉蕾, 杨灼, 胡惠铭, 魏薇, 杨洪早, 朱买勋, 余远迪, 付利芝, 陈红伟
- 4138 基于PiggyBac转座系统构建稳定表达*UL 19*基因的小鼠乳腺癌细胞系4T1
赵晓彤, 王欣雅, 刘滨磊, 胡翰, 汪洋
- 4149 基于微流控芯片快速高分辨率检测亚群识别RAW 264.7免疫耐受细胞和筛选药物的新方法
刘亚萌, 王淼淼
- 4157 基于多肽水凝胶材料的肿瘤类器官培养体系的建立
王慧斌, 赵东东, 张璐, 魏占东, 梁俊, 毕昌昊

农业生物技术

- 4171 小麦NAC转录因子TaNAC14的原核表达和分离纯化
陈志军, 张立坚, 池青, 吴保为, 敖兰吉亚, 赵惠贤
- 4183 苹果脱水反应元件结合蛋白A4亚家族成员*MdTINY*的功能分析
张海园, 王寻, 王晴, 由春香
- 4198 钩吻GeERF4B-1转录因子的鉴定与功能分析
尤垂淮, 陈睿琪, 孙欣路, 李莹莹, 苏亚春

生物技术与方法

- 4211 利用家蚕核型多角体病毒多角体蛋白序列提高人表皮细胞生长因子表达水平
李跃东, 王星洋, 李硕豪, 吴小锋
- 4219 使用优化的信号肽和密码子在Expi293F细胞中高表达重链抗体可变区抗体
谭书桢, 董虎, 潘颂佳, 穆素雨, 陈永杰, 张韵, 孙世琪, 郭慧琛
- 4228 半理性设计提高丁酰胆碱酯酶催化生长激素释放肽活性
蔡应婷, 张天竹, 林凤云
- 4242 基于类弹性蛋白融合金属硫蛋白的构建及其生物学活性评价
刘龙英, 汪婷婷, 于伟, 徐思梦, 叶贤龙
- 4254 应用CRISPR-Cas9技术构建*R/G-I*基因敲除的HEK293细胞系
陈姿亦, 吴怡蓉, 张雨婷, 高有领
- 4266 人乳头瘤病毒16型E6和L1蛋白荧光免疫层析检测方法的建立
刘馨儿, 赵印震, 牛楠楠, 李灵轲, 杜学利, 郭晋祥, 张应福, 王继创, 张怡青, 王云龙

高校生物学教学

- 4277 “六融六优”培养生物与医药专业研究生创新能力的探索与实践
吴静, 周怡雯, 宋伟, 魏婉清, 胡贵鹏, 闻建, 李晓敏, 蒋艳, 邱立朋
- 4288 “双一流”建设背景下“生物工艺学原理”多维化教学实践与思考
周海岩, 胡忠策, 蔡雪, 柳志强, 金利群, 郑裕国

I Briefing and introduction

Reviews

- 3861** Advances in the application of live bacteria as vehicles for delivering antitumor drugs
HUA Tingting, ZHENG Bin, BAI Yang
- 3872** Advances in visual detection of pathogen nucleic acids by CRISPR-Cas
HU You, CHEN Zhongfu, ZHANG Shiyin, GE Shengxiang
- 3888** Advancements in the regulatory effects and mechanisms of the immune metabolite itaconate in diseases
CHENG Zhongkun, ZHAO Jingxian, LIU Yanyan, XU Ling, ZHAO Guangwei, NI Xingwei, YANG Xiaowei
- 3902** Research progress in the small G-protein Rac1
YANG Yiheng, ZHAO Shuling, LIANG Changyong
- 3912** *De novo* protein design in the age of artificial intelligence
LIU Nan, JIN Xiaocheng, YANG Chongzhou, WANG Ziyang, MIN Xiaoping, GE Shengxiang
- 3930** Research progress in the translation efficiency of mRNA vaccines
LIU Tao, WANG Shengqi, LI Wuju
- 3951** Advances in prostate cancer biomarkers
CHU Zibin, XU Ye, YIN Ziqiang, CAO Jingfeng, JIN Chengyu, CHEN Xiaoyang, YANG Zhao
- 3974** Differential discovery strategies of bispecific and multi-specific antibody drugs
LI Dong
- 3985** Research progress of antibody technology in rapid detection of foodborne pathogens
QUAN Meilin, LI Fei, LIU Jinyan, WANG Tingting, NIAN Rui, LIU Wenshuai, ZHANG Ming, CHI Zhe
- 4006** Removal, detection, and limits of endotoxin in the industry of recombinant proteins
LIU Shuyan, TIAN Wenhua, LI Ling, ZHANG Hong, WANG Jian, YU Yufeng
- 4019** Research progress in stimuli-responsive microneedles for biomedical applications
ZHANG Jia, SU Yang, ZHAO Tongtong, DONG Liangrun, JI Lei, YAN Liyi, WANG Sining, CHEN Yi

Medicinal Biotechnology

- 4042** Expression of influenza A H1N1 and H3N2 viruses Mosaic-HA1 antigens and evaluation of its immunogenicity in mice
HAN Fei, JIAO Pengtao, LIN Runshan, LI Heqiao, MA Jianing, PEI Hanzhong, ZHANG He, SUN Lei, LUO Tingrong, ZHENG Min, FAN Wenhui, LIU Wenjun
- 4057** Functions of nucleolar complex associated 4 homolog in activated T cells
YIN Jiajun, GUO Jie, ZHANG Jianhua
- 4071** Design and functional validation of a chimeric E3 ubiquitin ligase targeting the spike protein S1 subunit of SARS-CoV-2
DAI Yan, LIN Jiayu, ZHANG Xiaoya, LU Haorui, RAO Lang
- 4084** Bioinformatics, expression, purification, and inflammation-inducing effect of *Mycoplasma genitalium* GroEL protein
CHEN Li, SU Xiaoling, LUO Haodang, WANG Jingyun, LIAO Daoyong, GAN Tian, YU Jianwei, HE Jun
- 4098** Quantitative comparison of phospho-proteins of *Mycobacterium smegmatis* at different growing phases
XU Danyang, GAO Yuan, SHI Jiahui, JIANG Songhao, XUE Yu, ZHANG Yao
- 4111** Oral gavage of *Lactococcus lactis* expressing urate oxidase regulates serum uric acid level in mice
CHENG Hao, XIONG Guoqing, CUI Jiazhen, CHEN Zhili, ZHU Chen, SONG Na, WANG Qingyang, XIONG Xianghua, LIU Gang, CHEN Huipeng

CONTENTS

Chinese Journal of Biotechnology

Started in 1985; Monthly; Vol. 40 No. 11; 25 November, 2024

4120 Screening of active components in Chinese medicine with effects on *Escherichia coli* biofilm based on molecular docking

YANG Can, RAN Lei, YANG Zhuo, HU Huiming, WEI Wei, YANG Hongzao, ZHU Maixun, YU Yuandi, FU Lizhi, CHEN Hongwei

4138 Construction of a stable 4T1 cell line expressing *UL19* by the PiggyBac transposon system

ZHAO Xiaotong, WANG Xinya, LIU Binlei, HU Han, WANG Yang

4149 A DC-iDEP-based fast and high-resolution method for detection of LPS tolerance of RAW264.7 macrophages and screening of therapeutic agents

LIU Yameng, WANG Miaomiao

4157 Development of a tumor organoid culture system with peptide-based hydrogels

WANG Huibin, ZHAO Dongdong, ZHANG Lu, WEI Zhandong, LIANG Jun, BI Changhao

Agricultural Biotechnology

4171 Prokaryotic expression and purification of the transcription factor TaNAC14 in wheat (*Triticum aestivum*)

CHEN Zhijun, ZHANG Lijian, CHI Qing, WU Baowei, AO Lanjiya, ZHAO Huixian

4183 Functions of *MdTINY*, a member of the apple dehydration responsive element binding-A4

ZHANG Haiyuan, WANG Xun, WANG Qing, YOU Chunxiang

4198 Identification and functional analysis of the transcriptional factor GeERF4B-1 in *Gelsemium elegans*

YOU Chuihuai, CHEN Ruiqi, SUN Xinlu, LI Yingying, SU Yachun

Methods in Biotechnology

4211 Enhancing the expression level of human epidermal growth factor using the polyhedrin protein sequence of BmNPV

LI Yuedong, WANG Xingyang, LI Shuohao, WU Xiaofeng

4219 High expression of variable domain of heavy-chain antibodies in Expi293F cells with optimized signal peptide and codons

TAN Shuzhen, DONG Hu, PAN Songjia, MU Suyu, CHEN Yongjie, ZHANG Yun, SUN Shiqi, GUO Huichen

4228 Semi-rational design improves the catalytic activity of butyrylcholinesterase against ghrelin

CAI Yingting, ZHANG Tianzhu, LIN Fengyun

4242 Construction and biological activity of metallothionein fused with ELP

LIU Longying, WANG Tingting, YU Wei, XU Simeng, YE Xianlong

4254 Knockout of *RIG-I* in HEK293 cells by CRISPR/Cas9

CHEN Ziyi, WU Yirong, ZHANG Yuting, GAO Youling

4266 A fluorescence immunochromatography method for detection of human papillomavirus type 16 E6 and L1 proteins

LIU Xin'er, ZHAO Yinzheng, NIU Nannan, LI Lingke, DU Xueli, GUO Jinxiang, ZHANG Yingfu, WANG Jichuang, ZHANG Yiqing, WANG Yunlong

Education

4277 Exploration and practice of cultivating innovation ability of postgraduates majoring in biological and medical sciences with the new strategy of "six integration and six optimizations"

WU Jing, ZHOU Yiwen, SONG Wei, WEI Wanqing, HU Guipeng, WEN Jian, LI Xiaomin, JIANG Yan, QIU Lipeng

4288 Practice and thinking of multi-dimensional teaching of "Principle of Biotechnology" under the "Double First-Class" initiative

ZHOU Haiyan, HU Zhongce, CAI Xue, LIU Zhiqiang, JIN Liqun, ZHENG Yuguo