

生物工程学报
2017年第33卷总目录

合成生物学专刊

- 3:311 2017 合成生物学专刊序言
张先恩
- 3:315 合成生物学在基础生命科学研究中的应用
刘立中 白阳 郑海 傅雄飞 刘陈立
- 3:324 新基因起源：从自然进化到人工设计
王千 程健 江会锋
- 3:331 合成基因组学：设计与合成的艺术
罗周卿 戴俊彪
- 3:343 合成生物学技术的研究进展——DNA 合成、组装与基因组编辑
李诗渊 赵国屏 王金
- 3:361 新一代基因组编辑系统 CRISPR/Cpf1
杨帆 李寅
- 3:372 合成基因线路规模化设计面临的挑战
魏磊 袁野 汪小戎
- 3:386 基于信号网络的功能细胞设计
鞠见齐 魏平
- 3:393 人工基因元件的生理学研究进展
季翔宇 赵会伟 娄春波
- 3:404 生物大分子自组装合成多维纳米生物结构与器件
李峰 门冬 王殿冰 张先恩
- 3:422 基因组工程在医学合成生物学中的应用
王方圆 赵德华 亓磊
- 3:436 哺乳动物合成生物学在生物医学领域的研究进展
杨林凤 尹剑丽 王美艳 叶海峰
- 3:456 基于合成基因线路的智能药物
彭曙光 谢震
- 3:467 无细胞蛋白质合成体系实现胰岛素原可溶性表达
胡元 张宇琛 徐焱成 刘天罡
- 3:478 新本草计划——基于合成生物学的药用植物活性代谢物研究
王勇
- 3:486 利用合成生物学原理提高光合作用效率的研究进展
张立新 卢从明 彭连伟 马为民 钱万强
- 3:494 合成生物学技术在材料科学中的应用
赵田鑫 钟超
- 3:506 合成生物学在环境修复中的应用
唐鸿志 王伟伟 张莉鸽 黄玲 陆歆毓 许平
- 3:516 微生物胞外电子传递效率的合成生物学强化
李锋 宋浩

兽医生物技术专刊

- 8:1211 2017 兽医生物技术专刊序言
仇华吉
- 8:1213 提高病毒疫苗抗原产量的策略
谢利豹 李永锋 张玲楷 仇华吉
- 8:1224 RS-1 提高 CRISPR-Cas9 系统介导的人乳铁蛋白基因敲入效率
周文君 郭日红 邓明田 王锋 张艳丽
- 8:1235 针对猪瘟病毒 E2 蛋白的嵌合猪源化单克隆抗体的表达及抗病毒活性鉴定
陈姝承 孙慧敏 李素 刘平黄 马吉飞 仇华吉
- 8:1244 一株抗蓝舌病病毒 8 型 VP2 蛋白单克隆抗体识别的线性抗原表位的鉴定
臧明鑫 李佳璇 谢双羽 崔文 姜艳平 徐义刚
乔薪媛 王丽 周晗 刘敏 李一经 唐丽杰
- 8:1253 一种更灵敏的特异性检测 H9 亚型禽流感抗体的间接 ELISA 方法的建立
仇薇 侯力丹 宋洁 张爽 李芸 李晶 孙蕾 范文辉 刘文军
- 8:1265 猪丁型冠状病毒荧光定量 RT-PCR 与 S1 蛋白间接 ELISA 检测方法的建立及应用
王经纬 雷喜梅 覃盼 赵鹏伟 王斌 王逸雯 李懿婷 金颖蕊 李龙 黄耀伟
- 8:1276 猪繁殖与呼吸综合征病毒 nsp4 抗体制备与鉴定
蔡鑫娜 谭敏 曹胜亮 黄艳 孙法超 商营利 刘思当 肖一红
- 8:1284 蓝舌病病毒 4 型特异性竞争 ELISA 检测方法的建立
李佳璇 臧明鑫 谢双羽 姜艳平 崔文 徐义刚 刘敏 乔薪媛 王丽 周晗 李一经 唐丽杰
- 8:1292 猪 7 种腹泻相关病毒的临床检测及猪嗜病毒的遗传进化分析
孟丽 陶洁 李本强 马玉飞 程靖华 张春玲 刘惠莉
- 8:1304 层粘连蛋白基因家族在猪多能干细胞中的表达谱分析
李焕 于童 马洋洋 王华岩
- 8:1315 重组旋毛虫 plancitoxin-1-like 活性位点突变体蛋白的核酸酶活性
廖成水 王晓利 田文静 张梦珂 张春杰 李银聚 吴庭才 程相朝
- 8:1325 猪流行性腹泻病毒 nsp1 对 I 型干扰素应答的影响
王晓雪 李红杰 李永涛 高冬生 陈陆 常洪涛

- 刘红英 王川庆 赵军
- 8:1335 嵌合鞭毛蛋白在大肠杆菌BL21 (DE3) 和沙门菌SL5928中的表达与组装分析 (英文)
- 胡茂志 潘志明 杨芸 孟闯 张磊 耿士忠 焦新安

Biofilm 与 c-di-GMP 专刊

- 9:1351 Biofilm 与 c-di-GMP 专刊序言——微生物的社会性、c-di-GMP 调控及研究新技术
- 钱韦 马旅燕 谷立川 张炼辉
- 9:1357 环二鸟苷单磷酸核糖开关的结构与功能
- 李新风 陈芳 肖金凤 何进
- 9:1369 c-di-AMP 调控细菌生物被膜的形成
- 彭显 李继遥 徐欣
- 9:1376 鉴定 cyclic-di-GMP 效应蛋白: 高通量筛选策略与实验验证方法
- 程寿廷 王芳芳 钱韦
- 9:1390 生物被膜的物理特性及其表征
- 甘田生 龚湘君
- 9:1399 原子力显微镜 (AFM) 在细菌生物被膜研究中的应用
- 杨闪闪 黄巧云 蔡鹏
- 9:1411 细菌显微追踪技术在生物被膜中的应用
- 张文超 张静超 赵坤
- 9:1433 调节生物被膜化合物的研究进展
- 刘星宇 向绪稳 陶辉 崔紫宁 张炼辉
- 9:1466 环二鸟苷酸信号分子抑制剂的的研究进展
- 向绪稳 刘星宇 陶辉 崔紫宁 张炼辉
- 9:1478 乳酸锌和氟化亚锡对铜绿假单胞菌、鲍曼不动杆菌和变异链球菌生物被膜的抑制作用
- 于珊 张妙坤 马旅雁
- 9:1489 铜绿假单胞菌铁摄取与生物被膜形成研究进展
- 于珊 马旅雁
- 9:1513 鼠疫耶尔森氏菌环二鸟苷酸代谢及生物被膜形成调控研究进展
- 赵菊平 孙义成
- 9:1525 基于功能宏基因组学技术的金黄色葡萄球菌生物被膜抑制物的发现与活性分析
- 朱莹 柴树茂 曹明明 王绍琛 冯治洋
- 9:1533 霍乱弧菌生物被膜发育与环境调控
- 王全民 马遥 刘丽钧 朱军 刘智
- 9:1547 变形链球菌中的次级代谢产物及其在口腔生物被膜中的生态功能
- 谢周杰 张昭 刘力伟 柳孝晨 陈义华
- 9:1555 人类环境病原真菌——新生隐球菌的社会行为
- 丁浩 何光军 王琳淇

- 9:1567 白念珠菌生物被膜形成的遗传调控机制
- 郭东东 岳慧珍 魏羽佳 黄广华
- 9:1582 黄色粘球菌基于复杂社会性细胞行为的生物被膜
- 王川东 王艳 郑悦 张坤梅 胡玮 施文元 李越中
- 9:1596 基于 Lux 型群体感应系统干预的生物被膜调控在污水处理中的研究进展与前景
- 赵畅 王宁 王文昭 徐期勇
- 9:1611 铜绿假单胞菌蹭行运动单细胞分析方法的建立及应用
- 倪磊 金震宇 杨帅 金帆
- 9:1625 不动杆菌属中 *aidE* 基因编码高丝氨酸内酯酶
- 刘春妍 郭松 艾力·吐热克 张俊威 张力群
- 9:1640 生物被膜在病原细菌与植物识别中的作用
- 宋丽阳 方荣祥 贾燕涛

基因组编辑专刊

- 10:1661 2017 基因组编辑专刊序言
- 谷峰 高彩霞
- 10:1665 非人灵长类基因修饰模型研究进展
- 刘真 蔡毅君 孙强
- 10:1674 斑马鱼遗传操作进展
- 高煜 刘家辉 王新 刘东
- 10:1693 CRISPR-Cas9 基因编辑技术在秀丽线虫中的应用
- 孟曦男 周恒达 徐素宏
- 10:1700 植物 CRISPR 基因组编辑技术的新进展
- 李红 谢卡斌
- 10:1712 CRISPR-Cas 系统在植物基因组编辑中的研究进展
- 王春 王克剑
- 10:1723 植物基因替换编辑技术研究进展
- 王虹麟 张从省 刘昌林 谢传晓
- 10:1733 基因编辑技术研究进展及其在苜蓿等豆科饲草作物中的应用
- 刘欢 孟颖颖 牛丽芳 林浩
- 10:1744 计算机辅助 CRISPR 向导 RNA 设计
- 王远立 啜国晖 闫继芳 石雷 刘琦
- 10:1757 基因组编辑靶研究进展
- 何秀斌 谷峰
- 10:1776 利用 rBE3 和 rBE4 系统进行水稻基因单碱基编辑的特异性与遗传稳定性分析
- 任斌 严芳 旷永洁 李娜 张大伟 林宏辉 周焕斌

特邀综述

- 1:1 寨卡病毒及其疫苗研究
- 田德桥 陈薇
- 2:161 基因沉默技术在抗真菌病害中的应用和展望

金芸 张涛 郭惠珊

综 述

- 1:16 微生物辅因子平衡的代谢调控
陈修来 刘佳 罗秋玲 刘立明
- 1:27 Cathelicidins 结构与功能的关系及其分子设计研究进展
王晨 冯兰 于海宁 王义鹏
- 1:36 IL-6: TNF- α 之后的类风湿关节炎治疗关键靶点
李岩异 张卫婷
- 2:170 数字 PCR 技术及应用研究进展
林佳琪 苏国成 苏文金 周常义
- 2:178 植物内生菌生物抗菌活性物质研究进展
黄敬瑜 张楚军 姚瑜龙 高旭 侯梓淇 张露 李欧
- 2:187 *IL28B* 基因在乙型肝炎病毒感染中的作用
张成林 宋玉竹 马玉梅 张阿梅
- 2:196 红树植物秋茄分子生物学研究进展
杜照奎 陈河 李钧敏
- 2:205 猪流行性腹泻病毒反向遗传操作技术及其应用
于瑞嵩 董世娟 司伏生 蒋凤英 谢春芳 陈冰清 喻利 李震
- 4:541 抗老化啤酒酵母研究进展
杨静静 王金晶 李永仙 郑飞云 钟俊辉 李崎
- 4:552 番茄红素基因工程菌多酶调控研究进展
徐加莉 左思仪 谢承佳 江凌 李霜 黄和 徐娴
- 4:565 真核生物来源漆酶的异源表达研究进展
宁娜 谭慧军 孙新新 倪金凤
- 4:578 β -胡萝卜素合成的代谢工程研究进展
王岩岩 邢建民 陈红歌
- 4:591 重组蛋白正确折叠与修饰的提高策略
李家冬 王弘
- 5:701 植物油基平台化合物及高分子材料研究进展
何鑫 吴桂英 闫云君
- 5:720 微生物燃料电池在毒性物质检测中的应用
王洁芙 牛浩 吴文果
- 6:891 蓝细菌乙醇光合细胞工厂的发展与展望
齐允晶 王家林 栾国栋 谈晓明 吕雪峰
- 6:910 循环长链非编码 RNA 作为生物标志物在肿瘤分子诊断中的应用
江楠 田海华 潘金昌 龚朝辉
- 7:1061 基于质谱技术的神经肽研究进展
姬倩悦 马敏 彭鑫 贾辰熙 李灵军
- 7:1069 成纤维细胞直接重编程为心肌细胞研究进展
徐正燕 李鹰

- 7:1075 轮状病毒 VP4 亚单位疫苗研究进展
贾连智 李廷栋 葛胜祥
- 7:1085 纳米抗体在癌症治疗中的应用
吴越 郝秀静 李敏
- 11:1791 权重基因共表达网络分析在生物医学中的应用
刘伟 李立 叶桦 屠伟
- 11:1802 异戊二烯合成酶研究进展
苟艳 刘忠川 王刚刚
- 12:1901 工业微生物的噬菌体感染与防治策略
沈俊涛 修志龙

动物及兽医生物技术

- 1:44 抗鸡白细胞介素 4 单克隆抗体的制备及鉴定
关晓宇 徐志超 王永强 李晓齐 曹红 郑世军
- 2:217 猪 O 型口蹄疫病毒细菌样颗粒疫苗的制备与免疫原性鉴定
侯立婷 陈瑾 乔绪稳 于晓明 侯继波 郑其升 李谨年
- 5:730 绵羊体细胞核移植去核前程序的优化
郭延华 张译元 王立民 唐红 李迎利 周平

海洋生物技术

- 5:743 小球藻热水提取物功能成分的活性跟踪分离
贾敬 徐殿胜 庄秀园 张道敬 陶黎明 李元广
- 6:946 不同途径感染白斑综合征病毒 (WSSV) 对日本沼虾的致病性
殷嵘 郭媛媛 韦章良 施定基 何培民 贾睿

环境生物技术

- 6:957 两株绿脓杆菌对石油污染土壤的修复作用
黄磊 赵婷婷 贺赞 刘一琳 刘畅 靳大耀 贾晓强
- 6:968 石油污染对土壤微生物群落多样性的影响
李晓楼

工业生物技术

- 1:55 荚膜红细菌尿卟啉原 III 转甲基酶的纯化及其酶学性质
康洁 房欢 董会娜 宋文军 张大伟
- 1:68 基于傅里叶变换近红外光谱实时分析 1,3-丙二醇发酵过程生物量的在线监测方法
王路 刘涛 陈洋 孙亚琴 修志龙
- 1:79 全基因组水平扫描鉴定粗糙链孢菌糖转运蛋白及其在酿酒酵母己糖发酵中的评价
高婧芳 王邦 韩晓云 田朝光
- 2:228 代谢工程改造酿酒酵母合成葡萄糖二酸
巩旭 刘叶 王鑫 李江华 康振
- 2:237 热带假丝酵母 *ctpxA1* 基因缺失菌的构建及对长链二元酸积

- 累的影响
程成 汪俊卿 王腾飞 杨晓慧 王瑞明
- 2:247 代谢工程改造甘油代谢途径提高 β -胡萝卜素产量
董悦 胡坤乐 李兴林 李清艳 张学礼
- 4:601 铜绿假单胞菌存活时间延长可提高生物燃料电池的产电量
游婷 刘季华 梁如冰 刘建华
- 4:609 黏细菌漆酶序列筛选及其重组酶学性质
赵秀艳 常飞 方泽民 张寅良 肖亚中
- 5:757 构巢曲霉内切纤维素酶A10在毕赤酵母中的表达及重组蛋白质的表征
李建军 李小连 王自强 杜昱光
- 6:923 马克斯克鲁维酵母的木糖和阿拉伯糖发酵
侯胜博 冯华良 高教琪 李益民 袁文杰 白凤武
- 6:936 途径优化强化枯草芽胞杆菌合成肝素前体
张琳培 王浩 周正雄 堵国成 陈坚 康振
- 7:1091 枯草芽胞杆菌168新型转录终止子的构建与表征(英文)
Jean Paul Sinumvayo 杨森 陈坚 堵国成 康振
- 7:1101 氯化钠处理对原壳小球藻生长及油脂积累的影响
潘洁莉 高丽娜 赵双双 刘巧 郁吉峰 何一君 李美芽
- 11:1814 通过番茄红素环化酶的优化构建 β -胡萝卜素高产菌株
金应福 韩莉 张莎莎 李世忠 刘伟丰 陶勇
- 12:1913 途径工程及Tn5转座子介导突变提高大肠杆菌丙酮酸生产
史晓荣 刘俊 彭彦峰 李林 王文科 王钦宏
- 12:1923 删除Loop区域表面不稳定氨基酸提高(R) ω -转氨酶热稳定性
谢东芳 吕常江 方卉 杨卫康 胡升 赵伟睿 黄俊梅乐和
- 12:1934 变废为宝:利用活性污泥生产生物可降解塑料聚-3-羟基丁酸酯
陈佳妮

农业生物技术

- 1:90 家蚕氨肽酶(BmAPN5)与黑胸败血芽胞杆菌伴孢晶体(PC)毒素相互作用
付剑锋 林平 冯铁山 程冬 张权 夏庆友 程廷才
- 1:99 家蚕蜕皮液蛋白双向电泳及质谱分析
侯勇 田莎 郭超 周霞 陈世达 杨欢 赵萍 夏庆友
- 1:111 基因芯片技术筛选转SINACI基因拟南芥差异表达基因
于静洋 李倩倩 焦杨 李秋莉
- 2:261 家蚕EGFR配体的鉴定和验证
王菲 董世峰 宋亮 夏庆友
- 2:272 美洲商陆毛状根诱导及其离体培养的影响因素
施和平 朱远锋 曾宝强 周卓辉 余震傲 黄胜琴
- 4:620 纳米银对小麦赤霉病菌的抑制
李琴琴 赵英虎 高莉 侯倩倩 王芳 贾万利 王英勇
- 5:766 利用离体诱变培育花生新品种宇花4号
李冠 王霞 尹秀波 胡晓辉 陈静 乔利仙 隋炯明 王晶珊
- 5:775 采用CEL I酶粗提物高效鉴定CRISPR/Cas9介导的基因突变
罗婉冰 林秋鹏 李晓霞 周泽娇 阳辉勇 杜荣裕 李洪清
- 5:785 反刍兽月形单胞菌 β -木糖苷酶基因在毕赤酵母中的高效表达及酶学性质
付婷婷 胡玮 陈勇 魏欢 杨光
- 6:976 基于亚细胞定位的大豆和鹰嘴豆原生质体分离体系的建立与优化
舒英杰 黄丽燕 陈明 陶源 王占奎 麻浩
- 6:986 玉米大斑病菌STK1与EGFP融合基因载体的构建及其在毕赤酵母中的表达
张运峰
- 6:995 *Foc4* 2个谷胱甘肽S-转移酶基因的克隆、鉴定及其在外源氧化胁迫下的表达
齐兴柱 汪军 刘磊
- 7:1109 家蚕精氨酸激酶原核表达纯化、结构与活性分析
何华伟 王叶菁 赵敏健 位曙光 赵朋 蒋文超 刘莉娜 赵萍
- 11:1827 家蚕蛋白酶原磷酸酶基因克隆、表达纯化与结构分析
何华伟 王叶菁 宋凯 王姣 位曙光 赵朋 赵萍
- 12:1945 产紫杉醇内生真菌TMS-26的分离和鉴定
方荣锋 李浩浩 张培及 曹让 杨淑慎
- 12:1955 家蚕整合素Bmintegrin β 1基因的克隆及表达
李重阳 张奎 申利 赵羽辛 潘光照 徐曼 苏晶晶 崔红娟
- 12:1968 角蛋白酶基因gm2886在密旋链霉菌ACT12中的表达及鉴定
马怡茗 柯欣 李晓霞 舒伟学 杨文翰 刘亚勇 颜霞 贾良辉 颜华

食品生物技术

- 4:630 几丁寡糖对脂肪酸代谢紊乱的抑制作用及分子机制
易凡琪 郑军平 李琼瑜 焦思明 杜昱光 叶云 刘洪涛
- 5:796 苦荞籽粒芦丁降解酶的纯化、酶学性质及部分一级结构分析
张玉玮 李洁 袁勇 顾继娟 陈鹏
- 5:808 鸡腿菇子实体多糖的分离纯化、理化性质及抗氧化活性
许女 张天震 陈旭峰 张浩 王如福
- 7:1124 钙离子调控樟芝深层发酵无性产孢及其分子机制

医学与免疫生物技术

- 1:122 血浆糖蛋白 β_2 -GPI 分子结构域与 ox-LDL 结合机制
张鹤 李敬达 陈阿梅 刘庆平
- 4:642 人骨髓间充质干细胞过表达白细胞介素-34 对 THP-1 细胞的调节作用
高雪明 张顺 许兆军 单艳 王子鸿 蔡挺 江雪
- 4:653 戊型肝炎病毒样颗粒在重组汉逊酵母中的发酵表达、纯化及其免疫原性分析
苏彩霞 李迺 金贞姬 韩旭东 赵平 王琳 江春虎 王月丽 王文雯 徐德启 朱乃硕
- 6:1006 CD133 表位联合热休克蛋白佐剂疫苗引发抗白血病的免疫应答 (英文)
王硕 范红霞 李杨 郑华国 李鑫 李长菲 陈立钊 鞠莹 孟颂东
- 7:1136 miR-29b2c 重组腺病毒的构建及对胃癌细胞增殖和迁移的影响
骆爱玲 杜春园 赵雪梅 梁继超 陈勇
- 7:1145 细菌性脑膜炎大鼠模型的尿液蛋白质组学变化
倪艳颖 张繁霜 安满霞 高友鹤
- 7:1158 1.8 mT 不同频率正弦交变电磁场对青年大鼠骨密度及骨形态计量的影响比较
周延峰 李雪雁 李文苑 秦荣
- 11:1840 狂犬病病毒糖蛋白表达及纯化及其记忆性 B 细胞结合能力的分析
严丽蔚 巩蔚 朱文兵 张雪梅 徐婧雯 吴忠香 卢孔杰 孙明 董少忠
- 12:1979 NMDAR1 蛋白膜外抗原结构域的重组表达、纯化和免疫反应原性鉴定
包玎 李伟 石乐明 李全贞

组织工程与细胞培养

- 2:284 利用 CRISPR/Cas9n double nick 系统构建人 DNAH2 基因敲除的 U2OS 细胞株
常丽贤 孙聪聪 陈晓娟 杨文钰 张家源 张英弛 袁卫平 竺晓凡
- 2:294 三种细胞共培养微流控芯片的设计和制作
王帅超 葛玉卿 吴蕾 郭慧 杨仕平 金庆辉
- 4:664 人工软骨支架中 TGF- β 1 缓释壳聚糖微球对 ATDC-5 细胞生长的促进作用
常亚南 刘浩 冯成宝 何晓亮 周晓辉
- 11:1850 黄芪多糖对低氧环境中 BMSCs 成脂分化的影响

生物技术与方法

- 1:132 鼠李糖乳杆菌颗粒表面展示系统的构建
苏润雨 聂伯尧 袁盛凌 陶好霞 刘纯杰 杨百亮 王艳春
- 1:141 CK-MB 特异性单抗的制备方法及其应用
陈自敏 周国梁 徐伟玲 郑小红 童勋章 柯起沈 宋浏伟 葛胜祥
- 4:672 毕赤酵母高密度发酵产 III 型类人胶原蛋白及其胃粘膜修复功能
李伟娜 尚子方 段志广 李林波 贺婧 范代娣
- 4:683 集成改进 KNN 算法预测蛋白质亚细胞定位
薛卫 王雄飞 赵南 杨荣丽 洪晓宇
- 5:817 基于电容测定的罗汉果细胞超低温保藏快速方法
李佳瑞 王泽建 郭美锦 郭元昕 黄帅 宋云飞 孙圳 孙阳阳 孔凡晶 庄英萍
- 5:828 GST-SOD1-R9 融合蛋白的表达、纯化、稳定性与跨膜效应
潘剑茹 吴伦巧 何火聪 陈莉娟 苏颖 李玲玲 刘树滔
- 5:838 利用紫外诱变选育褪黑素合成缺陷株
胡丹 唐克轩 苗志奇
- 5:849 优化培养条件和裂解方法提高 hRANKL 在大肠杆菌内的表达 (英文)
车路阳 郭志兰 郭清华 潘冰 李晶哲 刘长振 黄鹏
- 5:863 毕赤酵母分泌表达 JEV prME 蛋白及其形成病毒样颗粒的免疫原性鉴定
赵鹏 江雅 王经满 范浩杰 曹瑞兵
- 6:1018 不同细胞系表达的抗 EGFR 单抗糖基化结构对比分析
王冲 郭怀祖
- 6:1028 PhaP 介导 EGFR 靶向多肽修饰的肿瘤靶向 PHBHHx 纳米药物递送载体的构建
樊帆 马建岗 卢晓云 牛腾 吴志民
- 6:1037 拟南芥 Leafy Cotyledon 2 的表达提高了小球藻 *Chlorella sorokiniana* 的油脂含量
刘长斌 佟少明 张文蕾 侯和胜
- 6:1046 一种猪溶菌酶来源的抗菌六肽的分离鉴定及其性质
朱德伟 蔡国林 陆健
- 7:1168 全长 SOD2 重组蛋白的可溶表达、纯化、稳定性与跨膜效应
潘剑茹 陈莉娟 何火聪 苏颖 王香玲 李娟 陈翠煌 吴伦巧 刘树滔
- 7:1178 一种增加毕赤酵母生产胰岛素前体的方法
梁晨晨 王立 罗秋玲 吴静
- 7:1190 基于抗性恢复的高效克隆超短片重组质粒的构建

- 刘美丽 罗砚曦 赵铮蓉 阎辉
- 11:1859 双反相色谱串联平行反应监测靶向定量蛋白质组方法的建立
李恺 宋雷 石文昊 田喜凤
- 11:1869 基于葡萄糖脉冲的同位素稀释质谱检测法标品制备
舒威 李超 刘晓云 夏建业 庄英萍
- 12:1989 毛竹脱氧辛糖酸-8-磷酸合酶的原核表达、纯化及酶的特性
朱丰晓 张凤雪 张智俊 吴林军
- 12:1999 CRISPR/Cas9 介导的高产谷胱甘肽原养型酵母工程菌的构建
周文龙 唐亮 成凯 刘恣之 杨燕 王伟
- 12:2009 制备禽致病性大肠杆菌菌蜕的三种方法比较
胡剑刚 董洪亮 付立霞 左佳坤 吴小卡 米荣升
黄燕 陆珂 陈兆国 韩先千 胡世君
- 生物育种与工艺优化**
- 4:692 枯草芽孢杆菌 SCK6 超级感受态的制备和转化条件优化
李信志 卢争辉 周玉玲 李世宇 张桂敏
- 5:875 双酶偶联转化富马酸制备 β -丙氨酸的工艺的建立与优化
- 高宇 刘中美 刘克 周哲敏 崔文璟
- 7:1198 高效转化植物甾醇为 9α -OH-AD 的分支杆菌诱变选育及工艺优化
马洋 王向栋 王萌慧 李会 史劲松 许正宏
- 11:1877 大肠杆菌磷酸烯醇式丙酮酸-糖磷酸转移酶系统改造对产L-色氨酸的影响
吴涛 赵津津 毛贤军
- 11:1883 球形节杆菌 A152 产透明质酸酶的发酵优化及动力学模型的建立
姜言晖 张京良 江晓路
- 11:1889 重组钝齿棒杆菌全细胞转化生产L-瓜氨酸条件优化
刘倩妮 徐美娟 张荣珍 王梅洲 张显 杨套伟 饶志明
- 12:2017 碱性果胶酶高产菌株的构建和高密度发酵
望潇文 向腊 徐婷 卢争辉 张桂敏
- 12:2028 大肠杆菌全细胞转化联产L-2-氨基丁酸和D-葡萄糖酸
张蔡喆 杨套伟 周俊平 郑俊贤 徐美娟 张显 饶志明

(卷终)

CHINESE JOURNAL OF BIOTECHNOLOGY

CONTENTS Vol. 33 2017

Special Issue on Synthetic Biotechnology

- 3:311 Preface for special issue on synthetic biology (2017)
Xian-En Zhang
- 3:315 Fundamental aspects of synthetic biology
Lizhong Liu, Yang Bai, Hai Zheng, Xiongfei Fu, and Chenli Liu
- 3:324 Origin of new genes: from evolution to design
Qian Wang, Jian Cheng, and Huifeng Jiang
- 3:331 Synthetic genomics: the art of design and synthesis
Zhouqing Luo, and Junbiao Dai
- 3:343 Enabling technologies in synthetic biology—DNA synthesis, assembly and editing
Shiyuan Li, Guoping Zhao, and Jin Wang
- 3:361 The new generation tool for CRISPR genome editing: CRISPR/Cpf1
Fan Yang, and Yin Li
- 3:372 Challenges in large-scale synthetic gene circuits design
Lei Wei, Ye Yuan, and Xiaowo Wang
- 3:386 Signaling network-based functional cell design
Jianqi Ju, and Ping Wei
- 3:393 Advances in synthetic physiology of artificial genetic parts
Xiangyu Ji, Huiwei Zhao, and Chumbo Lou
- 3:404 Synthesis of multi-dimensional nano biostructures and biodevices through self-assembly of biomacromolecules
Feng Li, Dong Men, Dianbing Wang, and Xian-En Zhang
- 3:422 Application of genome engineering in medical synthetic biology
Fangyuan Wang, Dehua Zhao, and Lei Qi
- 3:436 Research progress of mammalian synthetic biology in biomedical field
Linfeng Yang, Jianli Yin, Meiyang Wang, and Haifeng Ye
- 3:456 Smart therapeutics based on synthetic gene circuits
Shuguang Peng, and Zhen Xie
- 3:467 Synthesis of soluble proinsulin in a cell-free protein synthesis system
Yuan Hu, Yuchen Zhang, Yancheng Xu, and Tiangang Liu
- 3:478 New materia medica project: synthetic biologybased bioactive metabolites research in medicinal plant
Yong Wang

- 3:486 Progress in improving photosynthetic efficiency by synthetic biology
Lixin Zhang, Congming Lu, Lianwei Peng, Weimin Ma, and Wanqiang Qian
- 3:494 Applications of synthetic biology in materials science
Tianxin Zhao, and Chao Zhong
- 3:506 Application of synthetic biology in environmental remediation
Hongzhi Tang, Weiwei Wang, Lige Zhang, Ling Huang, Xinyu Lu, and Ping Xu
- 3:516 Promoting efficiency of microbial extracellular electron transfer by synthetic biology
Feng Li, and Hao Song

Special Issue on Veterinary Biotechnology

- 8:1211 Preface for special issue on veterinary biotechnology (2017)
Huaji Qiu
- 8:1213 Strategies for producing high-yield viral vaccine antigens
Libao Xie, Yongfeng Li, Lingkai Zhang, and Huaji Qiu
- 8:1224 RS-1 enhanced the efficiency of CRISPR-Cas9 mediated knock-in of human lactoferrin
Wenjun Zhou, Rihong Guo, Mingtian Deng, Feng Wang, and Yanli Zhang
- 8:1235 Expression and antiviral activity of a chimeric porcized monoclonal antibody (cHQ06) against E2 protein of classical swine fever virus
Shucheng Chen, Huimin Sun, Su Li, Pinghuang Liu, Jifei Ma, and Huaji Qi
- 8:1244 Identification of epitope recognized by a monoclonal antibody against VP2 protein of bluetongue virus serotype 8
Mingxin Zang, Jiaxuan Li, Shuangyu Xie, Wen Cui, Yanping Jiang, Yigang Xu, Xinyuan Qiao, Li Wang, Han Zhou, Min Liu, Yijing Li, and Lijie Tang
- 8:1253 Establishment of a high sensitive indirect ELISA for detecting specific antibodies against H9 subtype avian influenza virus
Wei Zhang, Lidan Hou, Jie Song, Shuang Zhang, Yun Li, Jing Li, Lei Sun, Wenhui Fan, and Wenjun Liu
- 8:1265 Development and application of real-time RT-PCR and S1 protein-based indirect ELISA for porcine deltacoronavirus
Jingwei Wang, Ximei Lei, Pan Qin, Pengwei Zhao, Bin Wang,

- Yiwen Wang, Yiting Li, Haorui Jin, Long Li, and Yao-Wei Huang*
- 8:1276** Preparation and identification of polyclonal antibodies specific for nsp4 protein of porcine reproductive and respiratory syndrome virus
Xinna Cai, Min Tan, Shengliang Cao, Yan Huang, Fachao Sun, Yingli Shang, Sidang Liu, and Yihong Xiao
- 8:1284** Establishment of two competitive ELISAs for specific detection of bluetongue virus serotype 4
Jiaxuan Li, Mingxin Zang, Shuangyu Xie, Yanping Jiang, Wen Cui, Yigang Xu, Min Liu, Xinyuan Qiao, Li Wang, Han Zhou, Yijing Li, and Lijie Tang
- 8:1292** Clinical detection of seven porcine diarrhea-associated viruses and evolution analysis of porcine kobuvirus
Li Meng, Jie Tao, Benqiang Li, Yufei Ma, Jinghua Cheng, Chunling Zhang, and Huili Liu
- 8:1304** Expression of *Laminin* gene family in porcine pluripotent stem cells
Huan Li, Tong Yu, Yangyang Ma, and Huayan Wang
- 8:1315** Nuclease activity of the recombinant plancitoxin-1-like proteins with mutations in the active site from *Trichinella spiralis*
Chengshui Liao, Xiaoli Wang, Wenjing Tian, Mengke Zhang, Chunjie Zhang, Yinju Li, Tingcai Wu, and Xiangchao Cheng
- 8:1325** Effect of porcine epidemic diarrhea virus nsp1 on type I interferon response
Xiaoxue Wang, Hongjie Li, Yongtao Li, Dongsheng Gao, Lu Chen, Hongtao Chang, Hongying Liu, Chuanqing Wang, and Jun Zhao
- 8:1335** Expression and assembly of chimeric flagellins in *Escherichia coli* BL21(DE3) and *Salmonella* SL5928
Maozhi Hu, Zhiming Pan, Yun Yang, Chuang Meng, Lei Zhang, Shizhong Geng, and Xin'an Jiao
- Special Issue on Biofilm and c-di-GMP**
- 9:1351** Preface for special issue on biofilm and c-diGMP—Microbial society, c-di-GMP regulation, and new research techniques
Wei Qian, Luyan Ma, Lichuan Gu, and Lianhui Zhang
- 9:1357** Structure and function of c-di-GMP riboswitches
Xinfeng Li, Fang Chen, Jinfeng Xiao, and Jin He
- 9:1369** c-di-AMP regulates bacterial biofilm formation
Xian Peng, Jiyao Li, and Xin Xu
- 9:1376** Identification of cyclic di-GMP protein receptors: high-throughput screening strategies and experimental verification
Shouting Cheng, Fangfang Wang, and Wei Qian
- 9:1390** Characterization of the physical properties of biofilms
Tiansheng Gan, and Xiangjun Gong
- 9:1399** Application of atomic force microscopy (AFM) to study bacterial biofilms
Shanshan Yang, Qiaoyun Huang, and Peng Cai
- 9:1411** Application of bacterial tracking techniques in biofilms
Wenchao Zhang, Jingchao Zhang, and Kun Zhao
- 9:1433** Chemical agents modulating bacterial biofilm formation and development
Xingyu Liu, Xuwen Xiang, Hui Tao, Zining Cui, and Lianhui Zhang
- 9:1466** Progress in c-di-GMP inhibitors
Xuwen Xiang, Xingyu Liu, Hui Tao, Zining Cui, and Lianhui Zhang
- 9:1478** Anti-biofilm effects of Zn lactate·3H₂O and SnF₂ on *Pseudomonas aeruginosa*, *Acinetobacter baumannii* and *Streptococcus mutans*
Shan Yu, Miaokun Zhang, and Luyan Ma
- 9:1489** Iron uptake and biofilm formation in *Pseudomonas aeruginosa*
Shan Yu, and Luyan Ma
- 9:1513** Regulation of c-di-GMP metabolism and biofilm formation in *Yersinia pestis*
Juping Zhao, and Yicheng Sun
- 9:1525** Discovery and analysis of *Staphylococcus aureus* biofilm inhibitors using functional metagenomics approach
Ying Zhu, Shumao Chai, Mingming Cao, Shaochen Wang, and Zhiyang Feng
- 9:1533** Biofilm development and environmental determinants in *Vibrio cholerae*
Quanmin Wang, Yao Ma, Lijun Liu, Jun Zhu, and Zhi Liu
- 9:1547** Secondary metabolites from *Streptococcus mutans* and their ecological roles in dental biofilm
Zhoujie Xie, Zhao Zhang, Liwei Liu, Xiaochen Liu, and Yihua Chen
- 9:1555** Party for killing: the social behaviors in *Cryptococcus neoformans*
Hao Ding, Guangjun He, and Linqi Wang
- 9:1567** Genetic regulatory mechanisms of *Candida albicans* biofilm formation
Dongdong Guo, Huizhen Yue, Yujia Wei,

- and Guanghua Huang
- 9:1582** Biofilm formation dominated by sophisticated social behaviors in *Myxococcus xanthus*
Chuangdong Wang, Yan Wang, Yue Zheng, Kunmei Zhang, Wei Hu, Wenyuan Shi, and Yuezhong Li
- 9:1596** Wastewater treatment based on biofilm regulation by Lux type quorum sensing system—a review
Chang Zhao, Ning Wang, Wenzhao Wang, and Qiyong Xu
- 9:1611** Single-cell analysis method for twitching motility of *Pseudomonas aeruginosa*
Lei Ni, Zhenyu Jin, Shuai Yang, and Fan Jin
- 9:1625** *AidE* encodes an *N*-acyl homoserine lactonase in *Acinetobacter*
Chunyan Liu, Song Guo, Ali Turak, Junwei Zhang, and Liqun Zhang
- 9:1640** Function of biofilms in phytopathogenic bacterial-host interactions
Liyang Song, Rongxiang Fang, and Yantao Jia

Special Issue on Genome Editing

- 10:1661** Preface for genome editing special issue
Feng Gu, and Caixia Gao
- 10:1665** Advance of gene-modified non-human-primate models
Zhen Liu, Yijun Cai, and Qiang Sun
- 10:1674** Genetic manipulation in zebrafish
Yu Gao, Jiahui Liu, Xin Wang, and Dong Liu
- 10:1693** CRISPR-Cas9 mediated genome editing in *Caenorhabditis elegans*
Xi'an Meng, Hengda Zhou, and Suhong Xu
- 10:1700** Recent progresses in CRISPR genome editing in plants
Hong Li, and Kabin Xie
- 10:1712** Advances in CRISPR-Cas-mediated genome editing system in plants
Chun Wang, and Kejian Wang
- 10:1723** Advances in targeted replacement genome editing in plants
Honglin Wang, Congsheng Zhang, Changlin Liu, and Chuanxiao Xie
- 10:1733** Genome editing technology and its application in forage legumes
Huan Liu, Yingying Meng, Lifang Niu, and Hao Lin
- 10:1744** *In silico* CRISPR-based sgRNA design
Yuanli Wang, Guohui Chuai, Jifang Yan, Lei Shi, and Qi Liu
- 10:1757** Genome-editing: focus on the off-target effects
Xiubin He, and Feng Gu
- 10:1776** Specificity and inheritance of rBE3 and rBE4 endonuclease-induced gene modifications in rice
Bin Ren, Fang Yan, Yongjie Kuang, Na Li, Dawei Zhang, Honghui Lin, and Huanbin Zhou

Invited Reviews

- 1:1** Progress in Zika virus and its vaccines
Deqiao Tian, and Wei Chen
- 2:161** Application of host induced gene silencing in crop protection against fungal diseases
Yun Jin, Tao Zhang, and Huishan Guo

Reviews

- 1:16** Manipulation of cofactor balance in microorganisms
Xiulai Chen, Jia Liu, Qiuling Luo, and Liming Liu
- 1:27** Relationship between structure and function of cathelicidins and their molecular design: a review
Chen Wang, Lan Feng, Haining Yu, and Yipeng Wang
- 1:36** IL-6: the next key target for rheumatoid arthritis after TNF- α
Yanyi Li, and Weiting Zhang
- 2:170** Progress in digital PCR technology and application
Jiaqi Lin, Guocheng Su, Wenjin Su, and Changyi Zhou
- 2:178** Progress in antimicrobial substances of endophytes
Jingyu Huang, Chujun Zhang, Yulong Yao, Xu Gao, Ziqi Hou, Lu Zhang, and Ou Li
- 2:187** Function of the *IL28B* gene in Hepatitis B virus infection
Chenglin Zhang, Yuzhu Song, Yumei Ma, and A'mei Zhang
- 2:196** Advances in molecular biological studies of the mangrove *Kandelia obovata*
Kandelia obovata Sheue, Liu & Yong
Zhaokui Du, He Chen, and Junmin Li
- 2:205** Advances in reverse genetics to treat porcine epidemic diarrhea virus
Ruisong Yu, Shijuan Dong, Fusheng Si, Fengying Jiang, Chunfang Xie, Bingqing Chen, Li Yu, and Zhen Li
- 4:541** Advances in anti-staling brewer's yeast
Jingjing Yang, Jinjing Wang, Yongxian Li, Feiyun Zheng, Junhui Zhong, and Qi Li
- 4:552** Research progress in multi-enzyme regulation of genetically engineered bacteria producing lycopene
Jiali Xu, Siyi Zuo, Chengjia Xie, Ling Jiang, Shuang Li, He Huang, and Xian Xu
- 4:565** Advance of heterologous expression study of eukaryote-origin laccases

- Na Ning, Huijun Tan, Xinxin Sun, and Jinfeng Ni*
- 4:578 Progress in metabolic engineering of β -carotene synthesis
Yanyan Wang, Jianmin Xing, and Hongge Chen
- 4:591 Strategies to improve the folding and modification of recombinant proteins: a review
Jiadong Li, and Hong Wang
- 5:701 Advances in platform compounds and polymers from vegetable oils
Xin He, Guiying Wu, and Yunjun Yan
- 5:720 Detection of toxic substances in microbial fuel cells
Jiefu Wang, Hao Niu, and Wenguo Wu
- 6:891 Cyanobacteria cell factories for ethanol photosynthetic production: development and prospect
Yunjing Qi, Jialin Wang, Guodong Luan, Xiaoming Tan, and Xuefeng Lü
- 6:910 Circulating long noncoding RNAs as biomarkers in tumor diagnosis
Nan Jiang, Haihua Tian, Jinchang Pan, and Zhaohui Gong
- 7:1061 Advances in mass spectrometry-based approaches for neuropeptide analysis
Qianyue Ji, Min Ma, Xin Peng, Chenxi Jia, and Lingjun Li
- 7:1069 Direct reprogramming from fibroblasts into cardiomyocytes
Zhengyan Xu, and Ying Li
- 7:1075 Research progress in rotavirus VP4 subunit vaccine
Lianzhi Jia, Tingdong Li, and Shengxiang Ge
- 7:1085 Application of nanobody in cancer treatment
Yue Wu, Xiujing Hao, and Min Li
- 11:1791 Weighted gene co-expression network analysis in biomedicine research
Wei Liu, Li Li, Hua Ye, and Wei Tu
- 11:1802 Advances in isoprene synthase research
Yan Gou, Zhongchuan Liu, and Ganggang Wang
- 12:1901 Strategies to prevent bacteriophage infection in industrial fermentation
Juntao Shen, and Zhilong Xiu

Animal and Veterinary Biotechnology

- 1:44 Generation and characterization of monoclonal antibodies against chicken interleukin 4
Xiaoyu Guan, Zhichao Xu, Yongqiang Wang, Xiaoqi Li, Hong Cao, and Shijun Zheng
- 2:217 Design and immunogenicity evaluation for the bacteria-like particle vaccine against swine type O foot-and-mouth disease virus

- Liting Hou, Jin Chen, Xuwen Qiao, Xiaoming Yu, Jibo Hou, Qisheng Zheng, and Jinnian Li*
- 5:730 Program optimization before enucleation on ovine somatic cell nuclear transfer
Yanhua Guo, Yiyuan Zhang, Limin Wang, Hong Tang, Yingli Li, and Ping Zhou

Marine Biotechnology

- 5:743 Bioassay-guided isolation of functional components from hot water extract of *Chlorella pyrenoidosa*
Jing Jia, Diansheng Xu, Xiuyuan Zhuang, Daojing Zhang, Liming Tao, and Yuanguang Li
- 6:946 Pathogenicity of white-spot syndrome virus in *Macrobrachium nipponensis* via different infection routes
Rong Yin, Yuanyuan Guo, Zhangliang Wei, Dingji Shi, Peimin He, and Rui Jia

Environmental Biotechnology

- 6:957 Bioremediation of oil-contaminated field by two *Pseudomonas aeruginosa* strains
Lei Huang, Tingting Zhao, Yun He, Yilin Liu, Chang Liu, Dayao Jin, and Xiaoqiang Jia
- 6:968 Influence of oil pollution on soil microbial community diversity
Xiaolou Li

Industrial Biotechnology

- 1:55 Purification and characterization of S-adenosyl-L-methionine: uroporphyrinogen III methyltransferase from *Rhodobacter capsulatus* SB1003
Jie Kang, Huan Fang, Huina Dong, Wenjun Song, and Dawei Zhang
- 1:68 On-line monitoring of biomass in 1, 3-propanediol fermentation by Fourier-transformed near-infrared spectra analysis
Lu Wang, Tao Liu, Yang Chen, Yaqin Sun, and Zhilong Xiu
- 1:79 Genome-wide screening of predicted sugar transporters in *Neurospora crassa* and the application in hexose fermentation by *Saccharomyces cerevisiae*
Jingfang Gao, Bang Wang, Xiaoyun Han, and Chaoguang Tian
- 2:228 Metabolic engineering of *Saccharomyces cerevisiae* for production of glucaric acid
Xu Gong, Ye Liu, Cui Wang, Jianghua Li, and Zhen Kang
- 2:237 Effect of *ctp1A* gene deletion in *Candida tropicalis* long chain dicarboxylic acid accumulation

- Cheng Cheng, Junqing Wang, Tengfei Wang, Xiaohui Yang, and Ruiming Wang
- 2:247 Improving β -carotene production in *Escherichia coli* by metabolic engineering of glycerol utilization pathway
Yue Dong, Kunle Hu, Xinglin Li, Qingyan Li, and Xueli Zhang
- 4:601 Survival elongation of *Pseudomonas aeruginosa* improves power output of microbial fuel cells
Ting You, Jihua Liu, Rubing Liang, and Jianhua Liu
- 4:609 Bioinformatic analysis and characterization of myxobacteria laccase-like multicopper oxidases
Xiuyan Zhao, Fei Chang, Zemin Fang, Yinliang Zhang, and Yazhong Xiao
- 5:757 Overexpression and characterization of endo-cellulase A10 from *Aspergillus nidulans* in *Pichia pastoris*
Jianjun Li, Xiaolian Li, Ziqiang Wang, and Yuguang Du
- 6:923 Fermentations of xylose and arabinose by *Kluyveromyces marxianus*
Shengbo Hou, Hualiang Feng, Jiaoqi Gao, Yimin Li, Wenjie Yuan, and Fengwu Bai
- 6:936 Optimization of heparosan synthetic pathway in *Bacillus subtilis* 168
Linpei Zhang, Hao Wang, Zhengxiong Zhou, Guocheng Du, Jian Chen, and Zhen Kang
- 7:1091 Engineering and characterization of new intrinsic transcriptional terminators in *Bacillus subtilis* 168
Jean Paul Sinumwayo, Sen Yang, Jian Chen, Guocheng Du, and Zhen Kang
- 7:1101 Effect of sodium chloride on growth and lipid accumulation of *Chlorella protothecoides* CS-41
Jieli Pan, Li'na Gao, Shuangshuang Zhao, Qiao Liu, Jifeng Yu, Yijun He, and Meiya Li
- 11:1814 Construction of high-yield strain by optimizing lycopene cyclase for β -carotene production
Yingfu Jin, Li Han, Shasha Zhang, Shizhong Li, Weifeng Liu, and Yong Tao
- 12:1913 Improvement of pyruvate production by *Escherichia coli* via pathway engineering and Tn5 transposon mediated mutagenesis
Xiaorong Shi, Jun Liu, Yanfeng Peng, Lin Li, Wenke Wang, and Qinrong Wang
- 12:1923 Deletion of a dynamic surface loop improves thermostability of (R)-selective amine transaminase from *Aspergillus terreus*
Dongfang Xie, Changjiang Lv, Hui Fang, Weikang Yang, Sheng Hu, Weirui Zhao, Jun Huang, and Lehe Mei
- 12:1934 From waste to treasure: turning activated sludge into bioplastic poly-3-hydroxybutyrate
Jia'ni Chen
- ### Agricultural Biotechnology
- 1:90 Interaction of aminopeptidase (BmAPN5) and parasporal crystal (PC) toxin isolated from *Bacillus bombysepticus*
Jianfeng Fu, Ping Lin, Tieshan Feng, Dong Cheng, Quan Zhang, Qingyou Xia, and Tingcai Cheng
- 1:99 Analysis of molting fluid in silkworm (*Bombyx mori*) by two-dimensional electrophoresis and mass spectrometry
Yong Hou, Sha Tian, Chao Guo, Xia Zhou, Shida Chen, Huan Yang, Ping Zhao, and Qingyou Xia
- 1:111 Gene chip analysis of differentially expressed genes in transgenic *SINAC1 Arabidopsis*
Jingyang Yu, Qianqian Li, Yang Jiao, and Qiuli Li
- 2:261 Identification and characterization of epidermal growth factor receptor ligands in *Bombyx mori*
Fei Wang, Shifeng Dong, Liang Song, and Qingyou Xia
- 2:272 Factors influencing induction and *in vitro* culture of hairy roots in *Phytolacca americana* L.
Heping Shi, Yuanfeng Zhu, Po Keung Eric Tsang, Cheuk Fai Stephen Chow, Zhen'ao Yu, and Shengqin Huang
- 4:620 Inhibition of *Fusarium graminearum* by silver nanoparticles
Qinqin Li, Yinghu Zhao, Li Gao, Qianqian Hou, Fang Wang, Wanli Jia, and Yingyong Wang
- 5:766 Breeding of peanut variety Yuhua 4 by *in vitro* mutagenesis
Guan Li, Xia Wang, Xiubo Yin, Xiaohui Hu, Jing Chen, Lixian Qiao, Jiongming Sui, and Jingshan Wang
- 5:775 Efficient identification of gene knockout mutant mediated by CRISPR/Cas9 by *CEL I* crude extracts
Wanbing Luo, Qiupeng Lin, Xiaoxia Li, Zejiao Zhou, Huiyong Yang, Rongyu Du, and Hongqing Li
- 5:785 High-level expression and characterization of *Selenomonas ruminantium* β -xylosidase in *Pichia pastoris*
Tingting Fu, Wei Hu, Yong Chen, Huan Wei, and Guang Yang
- 6:976 Establishment and optimization of systems for protoplasts isolation of soybean and chickpea that used in subcellular location
Yingjie Shu, Liyan Huang, Ming Chen, Yuan Tao, Zhankui Wang, and Hao Ma
- 6:986 Construction of *Setosphaeria turcica* STK1-EGFP fusion gene vector and its expression in *Pichia pastoris*

Yunfeng Zhang

- 6:995 Cloning and characterization of two glutathione S-transferases cDNAs in *Foc4* and expression under exogenous oxidative stress
Xingzhu Qi, Jun Wang, and Lei Liu
- 7:1109 Prokaryotic expression, purification and characterization of arginine kinase of *Bombyx mori*
Huawei He, Yejing Wang, Minjian Zhao, Shuguang Wei, Peng Zhao, Wenchao Jiang, Li'na Liu, and Ping Zhao
- 11:1827 Cloning, expression, purification and structure analysis of protein tyrosine phosphatase of *Bombyx mori*
Huawei He, Yejing Wang, Kai Song, Jiao Wang, Shuguang Wei, Peng Zhao, and Ping Zhao
- 12:1945 Identification and characterization of a taxol producing endophytic fungus from *Taxus media*
Rongfeng Fang, Haohao Li, Peiji Zhang, Rang Cao, and Shushen Yang
- 12:1955 Cloning and expression of *Bm integrin $\beta 1$* in silkworm *Bombyx mori*
Chongyang Li, Kui Zhang, Li Shen, Yuzu Zhao, Guangzhao Pan, Man Xu, Jingjing Su, and Hongjuan Cui
- 12:1968 Expression and characterization of a keratinase encoding gene gm2886 in *Streptomyces pactum* ACT12 strain
Yiming Ma, Xin Ke, Xiaoxia Li, Weixue Shu, Wenhan Yang, Yayong Liu, Xia Yan, Lianghui Jia, and Hua Yan

Food Biotechnology

- 4:630 Inhibition of chitin oligosaccharide on dyslipidemia and the potential molecular mechanism exploration
Fanqi Yi, Junping Zheng, Qiongyu Li, Siming Jiao, Yuguang Du, Yun Ye, and Hongtao Liu
- 5:796 Purification, characterization and partial primary structure analysis of rutin-degrading enzyme in tartary buckwheat seeds
Yuwei Zhang, Jie Li, Yong Yuan, Jijuan Gu, and Peng Chen
- 5:808 Separation, purification and antioxidant activity of polysaccharide from *Coprinus comatus*
Nü Xu, Tianzhen Zhang, Xufeng Chen, Hao Zhang, and Rufu Wang
- 7:1124 Effect of calcium on sporulation of *Taiwanofungus camphoratus* in submerged fermentation
Huaxiang Li, Zhenming Lu, Qing Zhu, Yan Geng, Jinsong Shi, Zhenghong Xu, and Yanhe Ma

Medical and Immunological Biotechnology

- 1:122 Binding of glycoprotein β_2 -GPI with oxidized low density lipoprotein
He Zhang, Jingda Li, Amei Chen, and Qingping Liu
- 4:642 Effects of interleukin-34 expressed by human bone marrow derived mesenchymal stem cells on THP-1 cells
Xueming Gao, Shun Zhang, Zhaojun Xu, Yan Shan, Zihong Wang, Ting Cai, and Xue Jiang
- 4:653 Fermentation, purification and immunogenicity evaluation of hepatitis E virus-like particles expressed in *Hansenula polymorpha*
Caixia Su, Li Li, Zhenji Jin, Xudong Han, Ping Zhao, Lin Wang, Chunhu Jiang, Yueli Wang, Wenwen Wang, Deqi Xu, and Naishuo Zhu
- 6:1006 CD133 epitope vaccine with gp96 as adjuvant elicits an antitumor T cell response against leukemia
Shuo Wang, Hongxia Fan, Yang Li, Huaguo Zheng, Xin Li, Changfei Li, Lizhao Chen, Ying Ju, and Songdong Meng
- 7:1136 Effects of recombinant adenovirus Ad-miR-29b2c on HGC-27 cell proliferation and migration
Ailing Luo, Chunyuan Du, Xuemei Zhao, Jichao Liang, and Yong Chen
- 7:1145 Changes of urinary proteins in a bacterial meningitis rat model
Yanying Ni, Fanshuang Zhang, Manxia An, and Youhe Gao
- 7:1158 Effects of 1.8 mT sinusoidal electromagnetic fields of different frequencies on bone mineral density and bone histomorphometry of young rats
Yanfeng Zhou, Xueyan Li, Wenyuan Li, and Rong Qin
- 11:1840 Expression and purification of rabies virus glycoprotein and analysis of its specific binding capacity to memory B cells
Liwei Yan, Wei Gong, Wenbing Zhu, Xuemei Zhang, Jingwen Xu, Zhongxiang Wu, Kongjie Lu, Ming Sun, and Shaozhong Dong
- 12:1979 Expression, purification and immunoreactivity characterization of extracellular antigenic domains of NMDAR1 protein
Ding Bao, Wei Li, Leming Shi, Quanzhen Li

Tissue Engineering and Cell Cultivation

- 2:284 Knocking out of human *DNAH2* gene in U2OS cells by CRISPR/Cas9n double nick system
Lixian Chang, Congcong Sun, Xiaojuan Chen, Wenyu Yang, Jiayuan Zhang, Yingchi Zhang, Weiping Yuan, and Xiaofan Zhu

- 2:294 Design and fabrication of a microfluidic chip for the co-culture of three cell types
Shuaichao Wang, Yuqing Ge, Lei Wu, Hui Guo, Shiping Yang, and Qinghui Jin
- 4:664 ATDC-5 growth promoted by sustained-releasing chitosan microspheres loading TGF- β 1 in artificial cartilage scaffolds
Ya'nan Chang, Hao Liu, Chengbao Feng, Xiaoliang He, and Xiaohui Zhou
- 11:1850 Effects of *Astragalus* polysaccharides on adipogenic differentiation of bone marrow mesenchymal stem cells in low oxygen environment
Zhiwei Wu, Dan Liu, Yongqi Liu, Na Xue, Chunlu Yan, and Yun Su
- Methods in Biotechnology**
- 1:132 Construction of *Lactobacillus rhamnosus* GG particles surface display system
Runyu Su, Boyao Nie, Shengling Yuan, Haoxia Tao, Chunjie Liu, Bailiang Yang, and Yanchun Wang
- 1:141 Development and application of CK-MB specific monoclonal antibodies
Zimin Chen, Guoliang Zhou, Weiling Xu, Xiaohong Zheng, Xunzhang Tong, Qishen Ke, Liuwei Song, and Shengxiang Ge
- 4:672 Production of gastric-mucosa protective collagen III by *Pichia pastoris*
Weina Li, Zifang Shang, Zhiguang Duan, Linbo Li, Jing He, and Daidi Fan
- 4:683 Prediction of protein subcellular locations by ensemble of improved K-nearest neighbor
Wei Xue, Xiongfei Wang, Nan Zhao, Rongli Yang, and Xiaoyu Hong
- 5:817 Rapid cryopreservation for *Siraitia grosvenorii* cells based on cells' capacitance detection
Jiarui Li, Zejian Wang, Meijin Guo, Yuanxin Guo, Shuai Huang, Yunfei Song, Zhen Sun, Yangyang Sun, Fanjing Kong, and Yingping Zhuang
- 5:828 Expression, purification, stability and transduction efficiency of GST-SOD1-R9 fusion protein
Jianru Pan, Lunqiao Wu, Huocong He, Lijuan Chen, Ying Su, Lingling Li, and Shutao Liu
- 5:838 Preparation of catalitaxol-deficient defective strains by using ultraviolet mutagenesis
Dan Hu, Kexuan Tang, and Zhiqi Miao
- 5:849 Enhancing hRANKL production in *Escherichia coli* by optimizing culture conditions and lysing program
Luyang Che, Zhilan Guo, Qinghua Guo, Bing Pan, Jingzhe Li, Changzhen Liu, and Peng Huang
- 5:863 Secreted expression of Japanese encephalitisvirus prME in *Pichia pastoris* and immunogenicity evaluation of the virus-like particles in mice
Peng Zhao, Ya Jiang, Jingman Wang, Haojie Fan, and Ruibing Cao
- 6:1018 Characterization of N-glycosylation in an anti-EGFR monoclonal antibody produced by different expression systems
Chong Wang, and Huaizu Guo
- 6:1028 Development of tumor targeting PHBHHx nanoparticles by PhaP mediated immobilization of EGFR-targeting peptide
Fan Fan, Jiangang Ma, Xiaoyun Lu, Teng Niu, and Zhimin Wu
- 6:1037 Expression of Leafy Cotyledon 2 from *Arabidopsis* increased the content of lipid in *Chlorella sorokiniana*
Changbin Liu, Shaoming Tong, Wenlei Zhang, and Hesheng Hou
- 6:1046 Purification, identification and characterization of an anti-microbial hexapeptide from *Sus scrofa* lysozyme
Dewei Zhu, Guolin Cai, and Jian Lu
- 7:1168 Expression, purification, stability and transduction efficiency of full-length SOD2 recombinant proteins
Jianru Pan, Lijuan Chen, Huocong He, Ying Su, Xiangling Wang, Xian Li, Cuihuang Chen, Lunqiao Wu, and Shutao Liu
- 7:1178 A method to increase the production of insulin precursor in *Pichia pastoris*
Chenchen Liang, Li Wang, Qiuling Luo, and Jing Wu
- 7:1190 Cloning short gene fragment and constructing recombinant plasmid based on restoration of antibiotic resistance
Meili Liu, Yanxi Luo, Zhengrong Zhao, and Hui Yan
- 11:1859 Establishment of dualreverse phase chromatography combined parallel reaction monitoring for targeted quantitative proteomics
Kai Li, Lei Song, Wenhao Shi, and Xifeng Tian
- 11:1869 Preparation of isotope dilution mass spectrometry standards based on glucose pulse
Wei Shu, Chao Li, Xiaoyun Liu, Jianye Xia, and Yingping Zhuang

- 12:1989 Expression, purification and characterization of 3-Deoxy-D-manno-
octulosonate 8-phosphate synthase from *Phyllostachys edulis*
Fengxiao Zhu, Fengxue Zhang, Zhijun Zhang, and Linjun Wu
- 12:1999 Construction of prototrophic glutathione-high-producing yeast
strain mediated by CRISPR/Cas9
*Wenlong Zhou, Liang Tang, Kai Cheng, Minzhi Liu, Yan Yang,
and Wei Wang*
- 12:2009 Comparison of three methods for preparation of bacterial ghosts
from avian pathogenic *Escherichia coli*
*Jian'gang Hu, Hongliang Dong, Lixia Fu, Jiakun Zuo,
Xiaoka Wu, Rongsheng Mi, Yan Huang, Ke Lu, Zhaoguo Chen,
Xian'gan Han, and Shijun Hu*

Biotechnological Breeding and Process Optimization

- 4:692 Preparation and transformation optimization for supercompetent *B.*
subtilis SCK6 cells
Xinzhi Li, Zhenghui Lu, Yuling Zhou, Shiyu Li, and Guimin Zhang
- 5:875 Biocatalytic access to β -alanine by a two-enzyme cascade synthesis
Yu Gao, Zhongmei Liu, Ke Liu, Zheming Zhou, and Wenjing Cui
- 7:1198 Mutation breeding of high 9 α -hydroxy-androst-4-ene-3,17-dione
transforming strains from phytosterols and their conversion
process optimization

- Yang Ma, Xiangdong Wang, Menghui Wang, Hui Li, Jinsong Shi,
and Zhenghong Xu*
- 11:1877 Effect of PTS modifications on L-tryptophan production in
Escherichia coli
Tao Wu, Jinjin Zhao, and Xianjun Mao
- 11:1883 Establishment of kinetics digital model for hyaluronate lyase
production based on fermentation optimization of *Arthrobacter*
globiformis A152
Yanhui Jiang, Jingliang Zhang, and Xiaolu Jiang
- 11:1889 Production of L-citrulline by a recombinant *Corynebacterium*
crenatum SYPA 5-5 whole-cell biocatalyst
*Qianni Liu, Meijuan Xu, Rongzhen Zhang, Meizhou Wang,
Xian Zhang, Taowei Yang, and Zhiming Rao*
- 12:2017 Construction and high-density fermentation of alkaline pectate
lyase high-yield yeast
*Xiaowen Wang, La Xiang, Ting Xu, Zhenghui Lu,
and Guimin Zhang*
- 12:2028 Whole-cell biotransformation for simultaneous synthesis of
L-2-aminobutyric acid and D-gluconic acid in recombinant
Escherichia coli
*Caizhe Zhang, Taowei Yang, Junping Zhou, Junxian Zheng,
Meijuan Xu, Xian Zhang, and Zhiming Rao*

(The End)