

实验研究

醉鱼草内生真菌LL3026杀螺作用实验研究

韩邦兴^{1, 2}, 陈钧^{1 *}, 郝蕾¹, 周晓坤¹, 韩方岸³, 李龙根³

1 江苏大学药学院, 镇江 212013; 2 植物细胞工程安徽省工程技术研究中心, 六安 237012; 3 镇江市疾病预防控制中心, 镇江212001

收稿日期 修回日期 网络版发布日期 接受日期

摘要

【摘要】 目的 研究醉鱼草 (*Buddleia lindleyana*) 内生真菌LL3026 (*Colletotrichum* sp.) 发酵液的杀螺作用、活性部位及其热稳定性和光照稳定性。方法 采用烧杯浸杀法, 观察不同时间、不同浓度LL3026发酵液醇浸膏水溶液对湖北钉螺的杀灭作用, 同时设1 mg/L氯硝柳胺水溶液和去氯离子水为对照。采用溶剂系统分离法分离LL3026发酵液的不同极性部位, 并比较各极性部位的杀螺活性。该菌发酵液醇浸膏水溶液于不同温度 (30~100 °C)、不同时间 (30~150 min) 处理后, 进行杀螺试验, 检测其热稳定性。在25 °C、不同光照强度 (分别照射1~9 d) 条件下, 测定其光照稳定性。结果 施药后24、48和72 h的半数致死浓度 (LC50) 分别为50.11、3.43和1.55 mg/L。分离LL3026发酵液, 获得石油醚、乙醚、乙酸乙酯、正丁醇和水相等不同极性部位, 其低极性部位的乙醚相杀螺效果最好, 24、48和72 h杀螺率均为100%。在80 °C加热120 min后, 发酵液活性物质热稳定性好, 杀螺率为100%。3 600 lx强度光照9 d的发酵液的杀螺活性较强, 其48 h杀螺率为86.7%。结论 醉鱼草内生真菌LL3026具有较好的杀螺活性。

关键词 [醉鱼草](#); [内生真菌](#); [LL3026](#); [湖北钉螺](#); [杀螺剂](#)

分类号

Molluscicidal Effect of Endophyte LL3026 from *Buddleia lindleyana* against *Oncomelania hupensis*

HAN Bang-xing^{1, 2}, CHEN Jun^{1 *}, HAO Lei¹, ZHOU Xiao-kun¹, HAN Fang-an³, LI Long-gen³

1 College of Pharmacy, Jiangsu University, Zhenjiang 212013, China; 2 Engineering Technology Research Center of Plant Cell Engineering of Anhui Province, Lu'an 237012, China; 3 Zhenjiang Center for Disease Control and Prevention, Zhenjiang 2120001, China

Abstract

【Abstract】 Objective To research the molluscicidal effect, active components, thermal stability and light stability of endophyte LL3026 (*Colletotrichum* sp.) from *Buddleia lindleyana*. Methods The molluscicidal effect of LL3026 against *Oncomelania hupensis* was determined as referring to the WHO guidelines for laboratory molluscicidal test, and the control experiments were performed with 1 mg/L niclosamide or dechlorinated tap water. The active components from LL3026 were extracted by different polar solvents. The thermal stability and light stability of its extracellular moiety was examined at different temperature (30-100 °C), different time (30-150 min) and different illumination time (1-9 d). Results Immersion test showed that the LC50 values for the LL3026 broth were 50.11, 3.43, and 1.55 mg/L for 24, 48, and 72 h, respectively. The ether extract of LL3026 broth showed the best molluscicidal activity compared with other fractions. Treated with 25 mg/L ether extract for 24, 48, and 72 h, the mortality of *O. hupensis* was 100%. The molluscicidal activity of LL3026 broth had no change at 80 °C for 120 min, and the snail mortality was 100%. A 48 h exposure to LL3026 broth which placed in an artificial climate box with 3 600 lx illumination for 9 d resulted in 86.7% snail mortality. Conclusion The fractions extracted from endophyte LL3026 isolated from *B. lindleyana* shows molluscicidal effect to *O. hupensis*.

Key words [Buddleia lindleyana](#); [Endophyte](#); [LL3026](#); [Oncomelania hupensis](#); [Molluscicide](#)

DOI:

通讯作者

作者个人主页 韩邦兴^{1;2}; 陈钧^{1 *}; 郝蕾¹; 周晓坤¹; 韩方岸³; 李龙根³

| 扩展功能 |
|--|
| 本文信息 |
| ▶ Supporting info |
| ▶ PDF (295KB) |
| ▶ [HTML全文](OKB) |
| ▶ 参考文献[PDF] |
| ▶ 参考文献 |
| 服务与反馈 |
| ▶ 把本文推荐给朋友 |
| ▶ 加入我的书架 |
| ▶ 加入引用管理器 |
| ▶ 复制索引 |
| ▶ Email Alert |
| ▶ 文章反馈 |
| ▶ 浏览反馈信息 |
| 相关信息 |
| ▶ 本刊中 包含“醉鱼草; 内生真菌; LL3026; 湖北钉螺; 杀螺剂” 的相关文章 |
| ▶ 本文作者相关文章 |
| · 韩邦兴 |
| · 陈钧 |
| · 郝蕾 |
| · 周晓坤 |
| · 韩方岸 |
| · 李龙根 |