

专论与综述

稻瘟病菌致病性的分子遗传学研究进展

黄俊丽, 王贵学

重庆大学生物工程学院重庆大学应用生物技术中心, 重庆 400044

收稿日期 2004-4-30 修回日期 2004-8-8 网络版发布日期 接受日期

摘要 由稻瘟病菌引起的稻瘟病是水稻生产上危害最为严重的真菌病害, 对世界粮食生产造成巨大损失。稻瘟病菌成功侵染寄主包括分生孢子萌发、附着胞形成、侵染钉分化和侵染性菌丝扩展等一系列错综复杂的过程, 其中每一环节都是由特定基因控制的。稻瘟病菌与水稻的互作符合经典的基因对基因学说, 二者的不亲和互作是无毒基因与抗病基因相互作用的结果。近几十年来, 世界各国的科学家对稻瘟病菌致病性的生物学及其遗传的分子机制进行了深入的研究。文章就稻瘟病菌致病性的分子遗传学及其遗传变异机制的研究进行了综述, 同时对功能基因的研究方法进行了总结。

关键词 [稻瘟病菌](#) [致病性](#) [分子遗传学](#)

分类号 [S435.111.41](#)

The Research Progress on Molecular Genetics of Pathogenicity of Rice Blast Fungus

HUANG Jun-Li, WANG Gui-Xue

The College of Biological Engineering, The Research Center of Applied Biotechnology, Chongqing University, Chongqing 400044, China

Abstract

Rice blast disease, caused by heterothallic ascomycete *Magnaporthe grisea*, is one of the most serious fungal diseases of rice throughout the world. The disease attacks rice plants throughout the season and causes severe yield losses. The pathogenesis of *M. grisea* is due to a complex process that spans the entire life cycle of the pathogen. The process including germination of conidia, formation of appressoria, differentiation of penetration pegs and proliferation of infectious hyphae is controlled by many genes. The interaction between *M. grisea* and rice is based on the gene-for-gene hypothesis and the defense responses are often activated by the action of the pathogen avirulence (Avr) gene and the host resistance (R) gene. The studies on molecular biology and genetic mechanism of pathogenicity of *M. grisea* has occupied pathologists and mycologists for several decades. This paper reviews the research progress related to molecular genetics of pathogenicity of the fungus and its genetic diversity and variation, and summarize research methods of the functional genes.

Key words [Magnaporthe grisea](#) [pathogenicity](#) [molecular genetics](#)

DOI:

通讯作者 王贵学 wanggx@cqu.edu.cn

扩展功能	
本文信息	
▶	Supporting info
▶	PDF(0KB)
▶	[HTML全文](0KB)
▶	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“稻瘟病菌”的 相关文章
▶	本文作者相关文章
·	黄俊丽
·	王贵学