

生物技术

染色体定位粗山羊草抗小麦白粉病基因PmAeY1

张海泉[1] 贾继增[1] 张宝石[2] 周荣华[1]

[1]中国农业科学院作物科学研究所 / 国家农作物基因资源与基因改良重大科学工程,北京100081 [2]沈阳农业大学农学院,辽宁沈阳110161

摘要:

小麦白粉病是严重影响小麦生产的重要病害之一, 利用抗病品种是防治该病最为经济、有效和环境安全的方法。目前已经标记31个小麦抗白粉病基因, 但大多数抗性丧失或与不良性状紧密连锁。粗山羊草存在许多小麦抗病基因, 它可以扩大小麦抗病基因的基础, 提供新的抗小麦白粉病基因的来源。使用分离群体分组分析法(BAS), 将抗小麦白粉病E11菌株的粗山羊草材料Y219与感病材料Y169杂交, F1代表现抗病, F2代出现抗感3: 1分离, 用SSR标记技术, 抗病新基因PmAeY1定位在2D染色体上, 与Xgwm484、Wmc453、Xgwrrd15和Xgwm157的遗传距离分别是30.4、23.4、6.1和5.5cM。

关键词: 粗山羊草 小麦白粉病 抗病基因 ssr标记

Chromosomal Localization of Powdery Mildew Resistance Gene |PmAeY1 from Ae. tauschii Y219

ZHANG Hai-quan|JIA Ji-zeng|ZHANG Bao-shi|ZHOU Rong-hua

1Institute Crop Sciences / The National Key Facilities for Crop Genetic Resources and Improvement, CAAS. Beijing 100081|China; |2. College of Agronomy, Shenyang Agricultural University, Shenyang Liaoning 110161, China

Abstract:

Powdery mildew is one of the devastating diseases of wheat. The use of resistant cultivars is the most economical, effective and environmentally safe way to control this disease. Thirty-one genes resistant to powdery mildew have been found, but most of them have lost resistance function and application value. The Ae. tauschii contains plentiful resistance genes, which will enlarge the disease-resistance genetic foundation and improve resistance breeding. Based on the populations derived from cross between Ae. tauschii Y219 (resistant) and Y169 (susceptible), F1 representatives are disease-resistant and the ratio of resistance/susceptible was 3: 1 in F2 generation. Using bulked segregant analysis (BAS), 200 SSR markers on wheat D genome were screened. Xgwm484, WMC453, Xgwm515 and Xgwm157 on chromosome 2D were linked to powdery mildew resistance and the genetic distance were 30.4cM, 23.4 cM, 6.1cM and 5.5cM respectively. The new resistance gene was named PmAeyl.

Keywords: Ae. Tauschii powdery mildew of wheat resistance genes SSR marker

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通讯作者: 贾继增, 男, 研究员, 博士生导师。E-mail: jizeng@cass.net.cn

作者简介: 张海泉(1964—)|男|博士|副研究员; 研究方向: 从事分子生物学研究。E-mail: hqzhang188@126.com

作者Email:

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