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易变山羊草染色体3U或3Sv上抗禾谷类根结线虫基因Rkn-mn1与酯酶Est-5 编码基因连锁的研究

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摘要 通过种子半粒法, 采用聚丙烯酰胺凝胶等电电泳和人工接种Meloidogynen aasi抗性鉴定相结合, 分析Ae. variabilis No. 1×Ae. variabilis No. 2F2植株酯酶Est-5标记同功酶与抗性基因Rkn-mn1连锁程度, 发现标记同功酶受染色体3U或3Sv长臂上1对共显性基因控制, 与抗生基因连锁程度较高, 重组率为12.96±0.40%, 图距为13.26±0.40分摩。这样, 在抗性基因Rkn-mn1转移中, 可利用标记同功酶大量、快速、高效鉴定植株抗线虫性。

关键词 酯酶Est-5 Rkn-mn1 基因连锁

分类号

Linkage of Cereal Root Knot Nematode Resistance Gene Rkn-mnl and the Esterase Est-5 Locus on Chromosome 3U or 3S^{v} in Aegilops variabilis

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Abstract

Analyses of marker isozyme esterase Est-5 and resistance gene Rkn-mnl using semi-grain of F₂ plants of Ae.variabilis No.1×Ae.variabilis No.2 by polyacrylamide gel isoelectric focusing(PAG-IEF) and by artificial inoculation of M. naasi showed that the marker isozyme was encoded by a pair codominant alleles on the long arm of chromosome 3U or 3S^v, and it was linked with the resistance gene with a recombination value of 12.96±0.40%,genetic distance of 13.26±0.40cM. Therefore, the marker isozyme could be used for testing plant resistance to cereal root knot nematode rapidly, efficiently and quantitively in transfer resistance gene Rknmn1.

Key words Esterase Est-5 Rkn-mn1 Linkage

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