

离子注入法将外源DNA直接导入小麦的研究

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通过离子束介导法将外源GUS基因直接导入小麦成熟种子。组织化学染色结果表明:GUS基因的瞬时表达率可以达到70%以上。当代(R_0)PCR分析结果表明,阳性植株的频率与离子注入剂量有关,适宜的注入剂量为 7×10^6 离子/cm²。PCR-Southern和Southern Blot分析结果表明外源基因已整合到小麦基因组中,说明离子束介导外源DNA直接导入小麦是可行的。另外还探讨了用离子束介导创造小麦远缘分子杂种的可能性。

STUDIES ON INTRODUCING EXOGENOUS DNA INTO WHEAT BY ION IMPLANTATION

The exogenous GUS gene was introduced into wheat mature seeds by ion implantation. Histochemical staining showed the temporary expression rate of GUS gene reached more than 70%. PCR assays of R_0 generation displayed that the positive plant rate was related to dosage of implanted ions, and the suitable dosage for transformation was 7×10^6 ions/cm². Further PCR-Southern and Southern blot assays proved that exogenous gene had integrated into wheat genome. The experiments provided an effective method for DNA delivery into wheat and showed a good prospect of introducing exogenous genomic DNA with helpful gene into wheat.

关键词

离子注入(Ion implantation); GUS基因(GUS gene); 小麦(Wheat); 直接导入(Direct delivery); 成熟种子(Mature seeds)