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摘要: 大豆遗传转化效率低,是大豆转基因育种亟待解决的重要问题。以大豆子叶节为外植体采用农杆菌介导法,系统地研究了大豆子叶节遗传转化各技术环节的操作要点,包括工程菌液制备、无菌苗获得及外植体制备、农杆菌的侵染及共培养、不定芽诱导、不定芽伸长、根诱导、驯化与移栽、抗性植株的获得及转基因植株的检测等,建立了一套较稳定、高效的大豆子叶节遗传转化体系。并利用该体系,将野生大豆耐盐碱相关基因A1对大豆品种绥农28、合丰50、合丰55、东农50进行遗传转化,系统地探讨了大豆基因型、影响T-DNA的转移效率的各环节、筛选剂浓度及不同基因型转化效率等几个重要因素。

Abstract: The low soybean genetic transformation frequency was one of the difficult problems that needed be resolved in soybean transgenic breeding. In this study, the soybean cotyledonary node was used as explants, and the technique flow and key operation points of Agrobacterium-mediated transformation method, including Agrobacterium preparation, explant and aseptic seedling preparation, infection and co-cultivation, adventitious bud induction, shoot elongation, regeneration of transgenic plantlets, plant habituation, obtaining of antibiotic resistant detection of transgenic plants, was systematically investigated. Therefore, a stable and efficient genetic transformation system using soybean cotyledonary nodes as explants was established. Using this transformation system, ?Al gene isolated from Glycine soja was transformed into four soybean cultivars, including Suinong28, Hefeng55, Hefeng50 and Dongnong50. And several important factors affecting the transformation efficiency were also discussed in the explant.

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