

一种发根农杆菌介导的花生遗传转化新方法

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A new method of Agrobacterium-mediated genetic transformation in peanut plants

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摘要

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摘要 花生是中国重要的油料作物、经济作物和豆科作物。作为世界第一花生生产国和出口国, 利用遗传转化方法, 加快花生生物性状和遗传育种的研究势在必行。花生根系和根瘤系统的研究对于提高花生抗性进而提高花生的产量和品质以及生物固氮能力具有重要的意义。然而, 目前花生遗传转化体系还不成熟, 给花生研究造成了严重的障碍。本文建立了利用发根农杆菌介导花生下胚轴形成转基因毛根和根瘤的新方法, 并分别用GFP和GUS两种检测方法对该转化体系进行了检测, 表明该方法是一个操作简易、高效的遗传转化方法, 为利用基因工程技术对花生进行研究和遗传改良提供了一套新方法。

关键词: 花生 发根农杆菌 遗传转化

Abstract: Peanut (*Arachis hypogaea* L.) is an important oil-bearing crops, economic crops and legume crops in China. As the world's first producer and exporter of peanut, it is imperative to accelerate the biological properties and genetic breeding researches in peanut by genetic transformation method. The researches on the root and nodule system of peanut are essential for improving peanut stress-resistance, peanut yield and quality and biological nitrogen fixation capacity. However, nowadays, peanuts genetic transformation system is still not mature, which gives a serious obstacle to the research in peanut. This paper established a transgenic hairy root and nodule system by Agrobacterium-mediated genetic transformation in peanut hypocotyl. And the results of expression profile by the GFP and GUS reporter gene showed that it was an easy and high efficient transgenic system, which provides a new research method and technology system for research and genetic improvement in peanut plants.

Keywords: peanut Agrobacterium genetic transformation

收稿日期 2011-05-20; 接受日期 2012-02-27

基金名称:

国家自然科学基金; 教育部高等学校博士学科点专项科研基金

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引用本文:

申红芸 熊宏春 郭笑彤 左元梅. 一种发根农杆菌介导的花生遗传转化新方法[J] 植物营养与肥料学报, 2012,18(2): 518-522

SHEN Hong-yun XIONG Hong-chun GUO Xiao-tong ZUO Yuan-mei. A new method of Agrobacterium-mediated genetic transformation in peanut plants[J] Acta Metallurgica Sinica, 2012,18(2): 518-522

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