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利用VIGS技术对抗SMV候选基因GmZ-15的功能分析

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摘要: 大豆花叶病毒(SMV)是我国大豆田间主要病毒性病害，阐明大豆对SMV的抗性机制对抗性的利用具有重要意义。利用VIGS技术对抗性基因-RSC3Q-的候选基因GmZ15进行功能分析，结果表明：GmZ15在SMV的诱导后表达量发生明显变化，在接种后24 h表达量达到最高。沉默GmZ15后的表达量分别为缓冲液对照和pGG7R2空载体对照组的0-3和0-2倍，差异极显著，表明GmZ15被有效沉默。沉默后接种SMV结果显示，沉默后48 h SMV的浓度约是未沉默处理的6倍，说明沉默GmZ15有助于SMV的积累，但在其上位叶中均检测到少量SMV且差异未达到显著水平，由此推测GmZ15介导着一种大豆对SMV的防御反应，齐黄1号对SC3株系的抗性另有其它基因参与。

Abstract: Soybean mosaic virus(SMV) is one of the most prevalent pathogens in soybean production in China.To clarify the mechanism for SMV resistance would be great significant VIGS (virus induced gene silence) was used to analyze the functions of candidate gene GmZ15 for resistance locus RSC3Q.The results showed the expression of GmZ15 changed greatly after inoculated with SMV, and reached a peak 24 hours later. After GmZ15 was silenced, the expression of GmZ15 dropped to 0-3 compared with the control inoculated with buffer and 0-2 compared with the control inoculated with empty vector pGG7R2. The silencing of GmZ15 contributes to the accumulation of SMV in soybean. The accumulation of SMV was 6 times more in soybean which GmZ15 was silenced than in the control.While, there was no significant difference in the upper leaf. So we speculated that GmZ15 did induce a kind of defense reaction.There may be other gene(s) involved in the resistance process in Qihuang 1.

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