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氮源受限条件下植物病原真菌氮调控基因表达特性

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- 摘要
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摘要 研究证实植物病害的发生往往是由于植物病原真菌分泌的效应子诱导引起的, 在此过程中, 调控效应基因表达能够了解病原菌的侵染过程。细胞的营养状况据推测对于效应基因的表达起着重要的作用。已有研究表明在氮胁迫条件下相同效应基因的诱导作用在植株体内和体外是一致的, 表明氮源缺乏的环境在植物体进化的早期就已经存在了。文章阐述了在氮受限条件下真菌致病系统中效应基因调控机制及其已经发现的氮调节基因特异性表达研究结果, 通过对比几个病原菌中氮调控基因的功能, 比较寄主植物体内和体外在氮限制条件下基因的诱导效应, 从而揭示出氮的有效性在寄主植物病害发展过程中起到重要作用。

关键词: 病原真菌 氮代谢 氮调控基因

Abstract: It has been confirmed that the occurrence of plant disease is caused by the effector molecules secreted by plant pathogens. The regulation effector gene expression is an important aspect in understanding of the infection process. The nutritional status of cells has been postulated to be a vital role for effector gene expression. Studies have indicated that the induction of the same effecter genes during growth *in vitro* as those during growth *in planta* under nitrogen-starved conditions. This showed that the nitrogen poor environment existed in the early time of plant evolution. This paper describes the system in the pathogenesis of several fungal pathogens and nitrogen in the process of gene expression effects from the results of several species by comparing and contrasting the function of nitrogen regulatory genes, as well as by studying plants *in vivo* and *in vitro* gene under nitrogen limitation inductive effect in order to reveal the effectiveness of nitrogen in the development process of host plant disease is an important factor.

Keywords: pathogenic fungi, nitrogen metabolism, nitrogen-regulated gene

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