

生长素与乙烯信号途径及其相互关系研究进展

胡一兵¹, 刘炜^{2,3}, 徐国华^{1*}

¹南京农业大学资源与环境科学学院, 南京 210095;

²山东省农业科学院高新技术研究中心, 山东省作物与畜禽品种改良生物技术重点实验室, 济南 250100;

³农业部黄淮海作物遗传改良与生物技术重点开放实验室, 济南 250100

Research Advances in Auxin and Ethylene Signaling and Effects of Auxin on Ethylene Response of Plants

Yibing Hu¹, Wei Liu^{2,3}, Guohua Xu^{1*}

¹College of Resources and Environmental Sciences, Nanjing Agricultural University, Nanjing 210095, China

²Key Laboratory for Genetic Improvement of Crop, Animal and Poultry of Shandong Province, High-tech Research Center, Shandong Academy of Agricultural Sciences, Jinan 250100, China

³Key Laboratory of Crop Genetic Improvement and Biotechnology, Huanqhuaihai, Ministry of Agriculture, Jinan 250100, China

摘要

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摘要 长期的研究表明, 生长素在调节植物生长发育的各种生理活动中起关键作用, 但对它如何调控这些生理活动却缺乏系统和深入的了解。最近, 细胞核内生生长素信号途径的发现为揭示其作用机制带来了曙光。乙烯参与果实成熟及植物对逆境反应等生理活动, 其信号途径也已得到部分阐明。越来越多的证据表明, 乙烯的作用与生长素对植物生长发育的调控之间有密切的联系。该文概述了生长素与乙烯信号途径的研究进展及其相互关系, 讨论了生长素在植物三重反应中的作用; 并对生长素与乙烯相互关系研究中存在的问题及研究前景进行了探讨。

关键词: 生长素 乙烯 信号途径 三重反应

Abstract: Auxin has long been identified to play a critical role in regulating various activities of plant growth and development. However, systematic and in-depth understanding of these regulations is still lacking. Recently, the verification of the nucleic auxin signaling pathway has thrown light on research in this field. The hormone ethylene is involved in fruit ripening and the stress response of plants; its signaling pathway has been partially elucidated. Increasing data show that the effects of ethylene on plants are largely connected to the participation of auxin. In this review, we summarize the research advances in auxin and ethylene signaling and discuss the role of auxin in the triple response of ethylene. Difficulties in unraveling their relationship and possible ways of resolving them are also proposed.

Keywords: auxin ethylene signaling triple response

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Corresponding Authors: 徐国华 Email: ghxu@njau.edu.cn

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