

miR319在植物器官发育中的调控作用

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摘要 microRNAs (miRNAs)是一类内源性的、21~25个碱基长度的小分子非编码RNA,它通过指导剪切或者抑制翻译等方式调节植物基因的表达,参与调控植物生长发育各个方面。大量研究表明,miR319通过靶向TCPs转录因子控制植物叶、花等器官的生长命运,并参与调控部分激素生物合成和信号传导通路,在植物发育过程中发挥重要生物学功能。文章综述了miR319在植物叶形态建成、生长发育以及叶衰老和花器官发育等过程中的重要调控作用。

关键词: miR319 叶生长发育 叶衰老 花器官发育 基因表达调控

Abstract: MicroRNAs (miRNAs) are an extensive class of endogenous, non-coding, short (21~25 nt) RNA molecules, which regulate expression of target genes through miRNA-guided cleavage or translational repression of mRNAs. Plant miRNAs are involved in all aspects of regulation of plant growth and development. The miR319 was shown to regulate TCPs transcription factor controlling the fate of plant organ growth such as leaves and flowers and was involved in regulating part of hormone biosynthesis and signal transduction pathways. Thus, they play a key biochemical function in plant organs development. This review focused on the key roles of miR319 in regulation of the morphogenesis, development, and senescence of plant organs such as leaves and flowers.

Keywords: miR319, leaf growth and development, leaf senescence, flower development, gene expression regulation

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