

植物C2H2型锌指蛋白的结构与功能 Structure and Function of Plant C2H2 Zinc Finger Protein

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摘要 锌指蛋白是一类具有指状结构域的转录因子。根据半胱氨酸(C)和组氨酸(H)残基的数目和位置可将锌指蛋白分为C2H2、C2HC、C2C2、C2HCC2C2、C2C2C2C2等亚类。C2H2型锌指蛋白是最多也是研究最为清楚的一类锌指蛋白, 在植物中已经克隆了50多个, 主要涉及植物的生长发育和对环境胁迫的应答反应。该类锌指蛋白大部分在锌指区具有植物中特有的QALGGH保守结构, 可能涉及调控植物特有的生物学功能。文章主要讨论了植物C2H2型锌指转录因子的结构、对靶DNA的识别及在生长发育和环境胁迫反应中可能的调控功能。Abstract: Zinc finger protein is one of the important transcription factors with zinc finger domain that regulates gene expression in the eukaryotic organisms mainly by specifically interacting with target DNA sequence (cis-acting element). It could be divided into several types of zinc finger proteins, such as C2H2, C2HC, C2C2, C2HCC2C2, C2C2C2C2 etc, based on numbers and positions of Cys and His residues. Of these, C2H2 type zinc finger protein is the most clearly identified zinc finger transcription factor, with the wide existence in human, animals and plants. The characterized plant C2H2 zinc finger proteins are mainly involved in plant growth and development and the responses to environmental stresses. Up to now, more than 50 C2H2 zinc finger proteins have been reported in plants including petunia, Arabidopsis, wheat and rice, and most of them have the plant-specific QALGGH motif in zinc finger domain. This paper briefly introduces the structure, recognition of target-DNA sequence and functions involved in development or environmental stresses of plant C2H2 zinc finger proteins.

关键词 [转录因子](#) [C2H2锌指蛋白](#) [结构](#) [功能](#) **Key words** [transcription factor](#) [C2H2 zinc finger protein structure](#) [function](#)

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