

研究论文

Cat2+ 诱导水稻细胞DNA片段化的研究

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摘要 用CaCl₂处理水稻愈伤组织, 研究钙离子在水稻细胞凋亡过程中的作用。结果发现, 水稻愈伤组织经150mmol/L CaCl₂处理1~2h后, DNA无明显降解; 处理3h后, DNA降解为5kb以上的大片段; 处理8h后, DNA几乎完全降解成200bp~1kb的小片段。由此推测, 细胞外高浓度的Ca²⁺对诱导凋亡细胞的DNA片段化起了重要作用。研究还发现, 一定浓度的Mg²⁺和放线菌酮也能诱导细胞DNA片段化, Zn²⁺则不能诱导细胞DNA片段化。细胞凋亡过程中的DNA片段化可以由多种途径诱导产生。

关键词 [Ca²⁺](#) [细胞凋亡](#) [水稻](#) [愈伤组织](#) [DNA片段化](#)

分类号

Studies on DNA Fragmentation Induced by Calcium Ions in Rice Cell

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Abstract To study the function of Ca²⁺ in plants cell apoptosis, rice callus was treated with CaCl₂ and the products were detected by agarose gel electrophoresis. The results showed that the callus' DNA was degraded into fragments which were more than 5 kb in size after treatment with 150 mmol/L CaCl₂ for 3h. A lot of fragments about 200bp~1kb were found after 8 hours. Calcium ions may play an important role in DNA fragmentation. DNA fragmentation could also be induced by Mg²⁺ and cycloheximide, but can't by Zn²⁺, indicating that many ways were associated with DNA fragmentation in plant cell apoptosis.

Key words [Ca²⁺](#); [Apoptosis](#); [Rice](#); [Callus](#); [DNA fragmentation](#)

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