

仙客来体细胞胚发生和发育过程中淀粉粒的变化

于文胜¹, 姜伟¹, 龚雪琴², 罗珍珍¹, 解晓旭¹, 由翠荣^{2,*}

(¹烟台市园林管理处, 山东烟台 264000; ²烟台大学生命科学学院, 山东烟台 264005)

Dynamic Changes of Starch Granules During Somatic Embryogenesis and Development in *Cyclamen persicum*

YU Wen-sheng¹, JIANG Wei¹, GONG Xue-qin², LUO Zhen-zhen¹, XIE Xiao-xu¹, and YOU Cui-rong^{2,*}

(¹Garden Management Department of Yantai, Yantai, Shandong 264000, China; ²College of Life Science, Yantai University, Yantai, Shandong 264005, China)

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摘要 以仙客来 (*Cyclamen persicum* Mill.) 开花植株的新生叶片为外植体, 诱导筛选胚性愈伤组织, 并使其进一步发育成体细胞胚。组织切片观察结果表明: 胚性愈伤组织由胚性和非胚性细胞组成, 胚性细胞多以胚性细胞团的形式存在, 胚性细胞团起源于诱导的胚性决定细胞。体细胞胚起源于单个胚性细胞, 经多细胞原胚、球形胚、心形胚和鱼雷胚等时期发育成完整植株。在体细胞胚的发生发育过程中, 淀粉粒出现4次积累高峰, 分别为胚性细胞、球形胚、早期鱼雷胚和成熟胚发育成完整的小植株时期, 淀粉代谢与体细胞胚发生、发育及小植株的形态建成密切相关。

关键词: 仙客来 体细胞胚 诱导的胚性决定细胞 淀粉粒

Abstract: Embryogenic calluses were induced and filtrated from young leaf explants in flowering *Cyclamen persicum* plant, and somatic embryos were formed. Histological observation revealed that embryogenic calluses were comprised of embryogenic and non-embryogenic cells, and that embryogenic cells mostly existed in embryogenic aggregates. Embryogenic aggregates derived from induced embryogenic determined cells. Somatic embryogenesis originated from a single embryogenic cell. Somatic embryo grew into a complete plantlet after passing through proembryos, globular, heart- and torpedo-shaped stages. During somatic embryogenesis and development, four peaks of starch granules appeared, respectively at the stage of embryogenic cells, globular embryos, early torpedo-shaped embryos and complete plantlets from mature embryos. Starch metabolism was closely related to somatic embryogenesis, development and plantlet regeneration.

Keywords: *Cyclamen persicum*, somatic embryo, induced embryogenic determined cell, starch granule

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