

荔枝水孔蛋白基因*LcPIP*的克隆与组织特异性表达研究

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Cloning and Tissue Specificity Expression of the Aquaporin Genes from Litchi

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摘要 从荔枝组织中克隆了9个质膜水孔蛋白基因 (*LcPIP*) 的cDNA全长序列, 并研究了其组织特异性表达。结果表明: 9个*LcPIP*分为PIP1和PIP2两类。定量PCR结果表明9个*LcPIPs*在荔枝的不同组织中均表达, 其中*LcPIP1-2*、*LcPIP1-4*、*LcPIP2-1*、*LcPIP2-2*在花中的表达量相对较高, *LcPIP1-1*在茎中相对较高, *LcPIP1-2*在果肉中较高, *LcPIP2-5*在种子中的表达量仅次于果皮, 而*LcPIP1-3*在叶中最高, *LcPIP2-4*在根中最高。*LcPIP1-1*、*LcPIP2-4*、*LcPIP2-5*在果皮中表达量较高, 而*LcPIP2-3*在果皮中特异表达, 且在所有成员中表达量最高, 可能与果皮组织水分运输有关。

关键词: 荔枝 水孔蛋白 基因克隆 表达

Abstract: Nine plasma membrane aquaporin genes named *LcPIP* were cloned from litchi and their tissue specificity expressions were studied in order to provide the information for further research on litchi preservation during the postharvest storage. These nine *LcPIP* genes can be divided into two groups, PIP1 and PIP2. The real-time RT-PCR result showed that *LcPIP1-2*, *LcPIP1-4*, *LcPIP2-1* and *LcPIP2-2* had higher expression level in the flower than other tissues. *LcPIP1-1*, *LcPIP1-2*, *LcPIP1-3*, *LcPIP2-4*, *LcPIP2-5* had higher expression level in stem, pulp, leaf, root and pericarp, respectively. All the expressions of *LcPIP1-1*, *LcPIP2-4* and *LcPIP2-5* were higher in pericarp than most of other tissues, which indicated that they may be involved with water transportation of litchi pericarp. *LcPIP2-3* was expressed specifically in the pericarp and has a higher expression than any other member.

Keywords: *Litchi chinensis*, aquaporin; gene cloning, expression

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