

葡萄中盐诱导的R2R3-MYB基因的筛选与表达分析

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Screening and Expression Analysis of Salt-induced R2R3-MYB Genes in Grapevine

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摘要 以葡萄砧木‘1103P’为试材, 筛选获得了4个受盐强烈诱导的R2R3-MYB基因, 系统进化分析表明其编码蛋白属于不同的拟南芥R2R3-MYB亚组。该4个基因在根、茎、叶和果实中呈组成型表达, 但具有不同的表达水平, 尤其是VvMYB112在葡萄根系中具有较高的表达水平。在4个基因中, VvMYB112能响应100~200 mmol·L⁻¹高盐处理。此外, VvMYB112和VvMYB15也能被聚乙二醇(PEG6000)

和低温诱导, 而VvMYB107和VvMYB87对PEG6000和低温不敏感或受其抑制。表明这4个基因可能通过不同的途径介导抗盐性。

关键词: 葡萄 R2R3-MYB 转录因子 盐 基因表达

Abstract: In the study, we obtained four R2R3-MYB genes which were strongly induced by salt in the roots of grapevine rootstock ‘1103P’. The proteins encoded by the above four genes were clustered into the different subgroups in the phylogenetic tree of Arabidopsis R2R3-MYB proteins. The four genes were expressed in root, stem, leaf and berry, whereas they showed the different expression levels in the different tissues. For example, VvMYB112 was expressed predominantly in the root. Among the four genes, only VvMYB112 could be induced by 100–200 mmol·L⁻¹ salt. Besides, VvMYB112 and VvMYB15 were induced by PEG and cold as well, while VvMYB107 and VvMYB87 did not respond to or were repressed by PEG6000 or cold. Taken together, the four screened genes showed the different expression patterns in the different tissues or under the different stress treatment, which indicated that they might mediate the salt resistance by the different pathways.

Keywords:

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