

Analysis of anthocyanin biosynthesis genes expression profiles in contrasting cultivars of Japanese plum (*Prunus salicina* L.) during fruit development

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Abstract

Flavonoids are responsible of different fruit sensorial properties. In Japanese plum (*Prunus salicina* L.) these compounds are variable in both type and quantity during the different stages of fruit growth and maturation. Here we present the first study which determines the expression profile of structural genes of the flavonoid pathway and accumulation profiles of total phenols, proanthocyanidins and anthocyanins during fruit development stages in contrasting cultivars in Japanese plum. The biosynthesis of these compounds is differentially regulated in different tissues and cultivars. Our result showed that all pigmented tissues increased the expression of the leucoanthocyanidin dioxygenase (LDOX) gene, while all tissues without anthocyanin accumulation presented a minimal expression of LDOX. In addition, the regulation of putative transcription factors PsMYB10 and PsMYB1 were correlated positively and negatively with the pigmented tissues respectively, suggesting a critical and coordinated mechanism involved in the change of the fruit color..

Keywords

Flavonoid pathway, Skin, Pulp, R2R3MYB, PsMYB10, PsMYB1.