

## **Abstract**

Grapevine is an important fruit in Iran. Therefore it is necessary some studies to evaluate different aspects related to early ripening in grape. In this study, the genes involved in hormone metabolism related to early ripening were investigated, firstly; then two genes, SEP1 (related to signal transduction of ethylene) and NCED (related to ABA synthesis), and GAPDH (as reference genes) were selected to more study. The expression of these genes were evaluated in different phenological growth stages and different early and late ripening genotypes of Sistan grape. The results indicated that expression of SEP1 has been up-regulated highly in late-ripened genotypes (Fakhri and Cheshm-Gavi) during ripening stage. Also, there was significant difference between ripening and berry filling phenological growth stages as expression of SEP1. On the other hand, this gene was down-regulated in early ripened Red-Yaghouti genotype. Also the results indicated that expression of NCED has up-regulated during ripening compared by berry filling all genotypes, especially in late ripened genotypes.

Key words: Early repining, Gene Expression, Plant Hormones, Quantitative Real Time PCR, *Vitis vinifera*



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