

EXPRESSION OF GENES INVOLVED IN TERPENOID BIOSYNTHETIC PATHWAYS IN A GRAPEVINE MUSCAT VARIETY

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The flavour and aroma of certain *Vitis vinifera* grape varieties is dominated by volatile terpenes and small volatile aldehydes. Monoterpenes contribute to the final grape and wine aroma and flavour in form of free volatiles and as glycoside conjugates of monoterpene alcohols. Typical monoterpenol components of the cultivar Muscat and other aroma-rich grape varieties are linalool, geraniol, nerol, citronellol, and alpha-terpineol. These compounds are widely recognized by humans as important fragrance, flavour and aroma compounds and can present desirable quality traits for plant breeding in viticulture.

The aim of this project is the characterization of expression genes of terpenoid formation in Muscat, an aromatic *Vitis vinifera* varieties. In this work, we describe the expression of different monoterpene and sesquiterpene synthases, and other genes of biosynthetic pathway in flower buds, open flowers, and during berry ripening and we compare these transcriptional profiles with aroma profiles.

The experiments reveal that monoterpenes synthases are mainly synthesized during berry setting and the sesquiterpenes synthases are mainly synthesized in flower buds, open flowers, during berry setting and at harvest time. The aroma profiles show almost terpenoids accumulation in flower buds and during berry ripening.