

Abstract

we analyzed VOC composition of complete inflorescences and single flowers of lavender during the flowering period. Our analyses, focused on the 20 most abundant terpenes, showed that three groups of components could be separated according to their patterns of variation during inflorescence ontogeny. These three groups were associated with three developmental stages: flower in bud, flower in bloom and faded flower. The expression of two terpene synthases (TPS) was followed using qPCR during inflorescence ontogeny. A comparison of these chemical and molecular analyses suggested that VOC production in lavender spike is mainly regulated at the transcriptional level. These results highlighted that lavender could be a model plant for future investigations on terpene biosynthesis and regulation, and could be used to explore the functions of terpene metabolites