

# FaMYB11 promotes the accumulation of volatile esters by regulating *FaLOX5* during strawberry (*Fragaria × ananassa*) ripening

Hongyan Lu, Zisheng Luo, Dong Li, Yunhong Jiang and Li Li

Postharvest Biology and Technology, Volume 178, August 2021, 111560

---

## Abstract

Aroma is a vital characteristic that determines the quality and commercial value of fruit. Fatty acids (FAs) are key precursors for fruit aroma volatiles. In *Arabidopsis thaliana*, TT2/MYB123 inhibited the seed embryo FA biosynthesis. We analyzed the function and regulation of the MYB123 homolog (*Fragaria × ananassa* [Fa] MYB11) for FA metabolism, especially lipoxygenase (LOX) pathway. *FaLOX5* was correlated with volatile esters formation. FaMYB11 was a functional homologue of the AtTT2/AtMYB123 and a nucleus-localized ripening-related R2R3 MYB transcription factor (TF). *FaMYB11* overexpression advanced ripening initiation, volatiles accumulation, whereas its silencing delayed these events. Volatile-related genes in LOX pathway were significantly upregulated in *FaMYB11* overexpression fruit and downregulated in its silencing fruit. We also demonstrated that FaMYB11 could physically bind to and trans-activate *FaLOX5* promoter. In conclusion, we proposed that FaMYB11 could promoted the volatile accumulation partly through the transcriptional regulation of *FaLOX5* during strawberry ripening.