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Overexpression of both *AcSVP1* and *AcSVP4* delays budbreak in kiwifruit *A. chinensis* var. *deliciosa*, but only *AcSVP1* delays flowering in model plants

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Highlights

- Kiwifruit genes *AcSVP1* and *AcSVP4* were characterized by ectopic overexpression
- They delayed spring bud-break in high-chill *Actinidia chinensis* var. *deliciosa*
- No effect on bud-break and flowering time was seen in low-chill *A. eriantha*
- Overexpression of *AcSVP1* delayed flowering in tobacco
- Similar transcription factors may regulate *AcSVP1* and *AcSVP4* expression

Abstract

Kiwifruit *SHORT VEGETATIVE PHASE (AcSVP)* genes have been implicated in regulation of dormancy and flowering. Previously, we have shown that *AcSVP2* and *AcSVP3* have different effects on dormancy and flowering in transgenic kiwifruit and model plants. The role of two homologous genes, *AcSVP1* and *AcSVP4*, remained unclear. Here, *AcSVP1* and *AcSVP4* were functionally characterized by ectopic expression in *Actinidia* species which show different chilling requirements for budbreak, as well as the model plant tobacco. Overexpression of *AcSVP1* and *AcSVP4* delayed spring budbreak in a high-chill *A. chinensis*