

## Supplemental material

### Supplementary Table S1. Growth conditions for blackberry in a subtropical monsoon

climatic zone

Average temperature	Annual	15.6°C
	From June to August	27.1°C
Rainfall	Annual	1031.9 mm
	From June to August	435.6 mm
Major growth elements	Average sunshine	50%
	Soil pH	5.52
	Organic matter	18.67 g/kg
	Nitrogen	1.25 g/kg
	Phosphorus	4.83 mg/kg
	Potassium	94.21 mg/kg

### Supplementary Table S2. PCR primer information for the blackberry *RuFLS2* gene

and flavonoid biosynthesis pathway genes in WT and *RuFLS2*-overexpressing

tobacco

Primer name	Primer sequence (5'-3')
RuFLS2-F	ATGGAGGTAGTGAGAGTTCAGGCG
RuFLS2-R	TTGTGGGATAGAGTTGAATTTGCG
RuFLS2-qRTF	AGCTGCCGGCCAAGTTCATC
RuFLS2-qRTR	GACCACGTCGTGTGGCTGAG
M13-F	TGTAAAACGACGGCCAGT
M13-R	CAGGAAACAGCTATGACC
Ru18S-F	ACGTCATCCTCCGGCAAAGC
Ru18S-R	ACGACGAAGCTCGCAAGTACAC
NtActin-F	CAAGGAAATCACCGCTTTGG
NtActin-R	AAGGGATGCGAGGATGGA
NtFLS-qF	AGGTGACACTATAGAATACTTGGGCTTGGGTTAGAA
NtFLS-qR	GTACGACTCACTATAGGGAGAGGCCTTGGACTTCATTTG
NtF3H-qF	AGGTGACACTATAGAATATAAGGCTTCATCCATCCACC
NtF3H-qR	GTACGACTCACTATAGGGACAAAGTCATTCCTCGCACA