

Supplementary Table S1. List of the stilbenes and anthocyanins derivatives identified in the methanol extracts of *Vitis amurensis* cells.

	Rt (min)	Elemental composition	Moll mass (g/M)	MS fragmentation		MS2 fragmentation		UV, λ max (nm)	Assignment
				Negative ion mod	Positive ion mode	Negative ion mod	Positive ion mode		
				[M-H]- (m/z)	[M+H]+ (m/z)	[M-H]- (m/z)	[M+H]+ (m/z)		
Anthocyanins									
1 ^a	13.1	C27H31O16	611.52	610	611	285	287;449	516	Cyanidin-3,5-O-diglucoside
2	14.3	C21H21O12	465.4	463	465	301	303	524	Delphinidin-3-O-glucoside
3	16.0	C32H27O13	655.6	654	655	491;329	331;493	528	Malvidin-3,5-O-diglucoside
4	17.4	C21H21O11+	449	447	449	284;211	287	516	Cyanidin-3-O-glucoside
5	19.2	C22H23O12+	479	478	479	314,299	317	525	Petunidin-3-galactoside
Stilbenes									
1 ^a	17.1	C26H32O13	552.5	551	553	389;227	229;241	308	3,4'-diglucoside resveratrol
2	22.8	C20H22O8	390.388	389	391	227	229	310	<i>trans</i> -piceid
3	23.9	C20H22O8	390.388	389	391	227	229	290	<i>cis</i> -piceis
4	24.7	C14H12O4	244.246	243	245	225;201	147;133	320	<i>trans</i> -piceatannol
5	28.9	C14H12O3	228.25	227	229	185	142; 184; 114	310	<i>trans</i> -resveratrol
6	32.0	C14H12O3	228.25	227	229	185	142; 184; 114	290	<i>cis</i> -resveratrol
7	35.5	C28H22O6	454.47	453	455	359,347	349;343	320	<i>trans</i> -ε-Viniferin
8	37.7	C28H22O6	454.47	453	455	369;411;435	361;437	320	<i>trans</i> -D-Viniferin

^aThe peaks are numbered as shown in supplementary **Figure S2** (anthocyanins) and **Figure 2** (stilbenes).

Supplementary Table S2. Primers used for amplification of *Vitis amurensis* cDNAs in PCR.

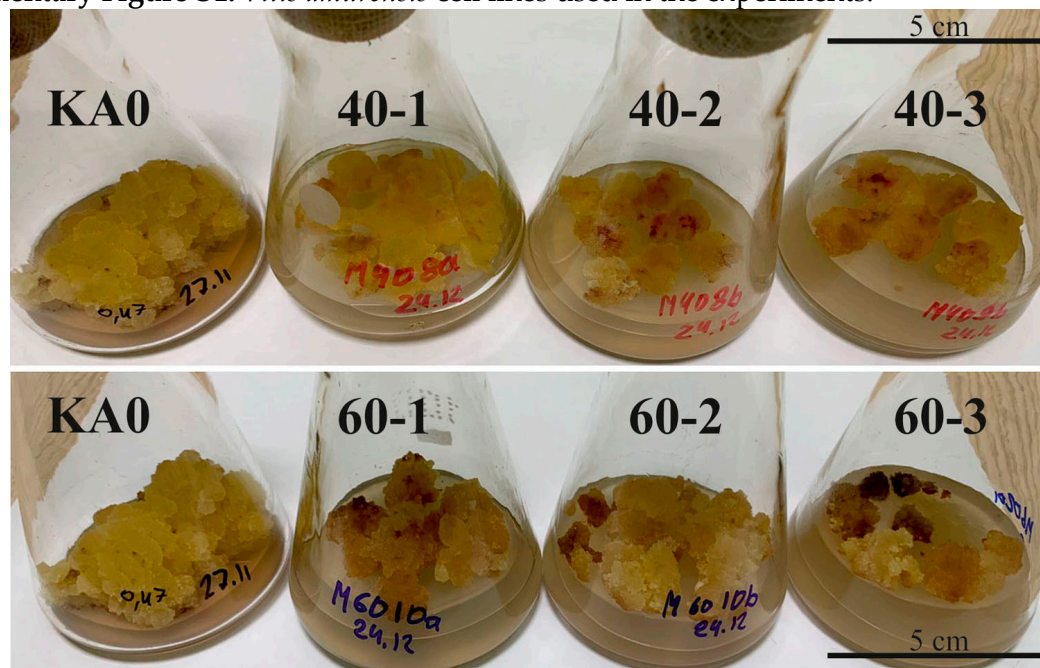
cDNA	Primers names	Primers sequences, 5'-3'
Primers for obtaining of the full <i>VaMybs</i> cDNA and generation the construction for plant cell transformation		
Full <i>VaMyb40</i> cDNA obtaining	VaMyb40-nachS VaMyb40-KonA	5'ATGGGAAGACAGCCTTGTG, 5'TCAATGGCTATTTTCCAAGA,
Full <i>VaMyb60</i> cDNA obtaining	VaMyb60-nachS VaMyb60-KonA	ATGGGAAGGCCTCCTTGCTG, TCAGAATATTGGAGAGAGTT,
Overexpression of <i>VaMyb40</i>	VaMyb40-Bgl-pSATs VaMyb40-Sal-pSATa	GCTCAGATCTATGGGAAGACAGCCTTGTG, TCGAGTTCGACTCAATGGCTATTTTCCAAGA,
Overexpression of <i>VaMyb60</i>	VaMyb60-Bgl-pSATs VaMyb60-Sal-pSATa	GCTCAGATCTATGGGAAGGCCTCCTTGCTG, TCGAGTTCGACTCAGAATATTGGAGAGAGTT,
Primers for real-time PCRs		
<i>VaMyb40</i> transgene	VaMyb40-real-S pSAT-term-A	ATCCTCATCTCTCCAAGATGAC, GAGAGACTGGTGATTTTTCG,
<i>VaMyb40</i> endogene	VaMyb40-real-S VaMyb40endo-real-A	ATCCTCATCTCTCCAAGATGAC, CACAGAAGGGGAGACAGTATG,
<i>VaMyb40</i> total	VaMyb40-real-S VaMyb40-real-A	ATCCTCATCTCTCCAAGATGAC, TCAATGGCTATTTTCCAAGAAGAAAAG,
<i>VaMyb60</i> transgene	VaMyb60-real-S pSAT-term-A	CTCTTGGATGAATCAGCAGC, GAGAGACTGGTGATTTTTCG,
<i>VaMyb60</i> endogene	VaMyb60-real-S VaMyb60endo-real-A	CTCTTGGATGAATCAGCAGC, CTTCTTTTATCATTATATCTCAAGCA,
<i>VaMyb60</i> total	VaMyb60-real-S VaMyb60-real-A	CTCTTGGATGAATCAGCAGC, TCAGAATATTGGAGAGAGTTGATC,
<i>VaPAL1</i> (EU659859)	VaPAL1-real-s VaPAL1-real-a	5'CAGGACTTCACCTCAATGG, 5'GGGTTATCATTAACGGAGTTGA,
<i>VaPAL2</i> (EU659860)	VaPAL2-real-s VaPAL2-real-a	5'AAGGACTTCCCCTCAATGG, 5'GGGTTATCGTTCAGTGTGA,
<i>VaPAL3</i> (EU659861)	VaPAL3-real-s VaPAL3-real-a	5'TCCGAACATCTCCCCAGT, 5'ATCAAGGGATTGTCGTTTACC,
<i>VaPAL4</i> (GQ443744)	VaPAL4-real-s VaPAL4-real-a	5'AGCAAGATCGGTATGCTCT, 5'TCTATGGACTTCGTTGATGT,
<i>VaPAL5</i> (GQ443745)	VaPAL5-real-s VaPAL5-real-a	5'GTTGATGAAGCCTAAACAAG, 5'CCATGCGAATGACCTCAAT,
<i>VaCHS1</i> (KT589834)	VaCHS-real-s VaCHS-real-a	5'AAAGGGCACCACAGGGGAAG, 5'TCAGTGAGTCGATTGTGTAGCAAG,
<i>VaSTS1</i> (EU659862)	VaSTS1-real-s VaSTS1-real-a	5'CCAACCAAAGTCCAAGATCA, 5'CCTTCTAACCGATGTTTCAAGA,
<i>VaSTS2</i> (EU659863)	VaSTS2-real-s VaSTS2-real-a	5'CGGTGCGGATTACAACTC, 5'CACCCTTGATGGTACAACAT,
<i>VaSTS3</i> (EU659864)	VaSTS3-real-s VaSTS3-real-a	5'GTCAGCCTAAATCGAAGATCAC, 5'TCTTCTAACAGATGGTTCGAGG,
<i>VaSTS4</i> (EU659865)	VaSTS4-real-s VaSTS4-real-a	5'ACAACCTCTGGTGTAGAAAT, 5'CTGACCGATGTTTCAAGGC,
<i>VaSTS5</i> (EU659866)	VaSTS5-real-s VaSTS5-real-a	5'CCTCGAACCATCTGTTAGAAGA, 5'TCTCCGCAAGATCCTTAGC,
<i>VaSTS6</i> (EU659867)	VaSTS6-real-s VaSTS6-real-a	5'CCTCAGGTGTAGAAATGCC, 5'CATCACTCTTCTAACAGATGG,
<i>VaSTS7</i> (EU659868)	VaSTS7-real-s VaSTS7-real-a	5'GCAGCACTGAAGGCACTTAA, 5'ATTTCTACACCTGACGTTGT,
<i>VaSTS8</i> (GQ443746)	VaSTS8-real-s VaSTS8-real-a	5'GCCTCGAACCATCTGTCA, 5'AAGATCCTTAGCTGTTTCA,
<i>VaSTS9</i> (GU266256)	VaSTS9-real-s VaSTS9-real-a	5'GGCAGCCTAAGTCCAAGATTA, 5'AGTCTGCACCGGGCATTTC,
<i>VaSTS10</i> (JQ780328)	VaSTS10-real-s VaSTS10-real-a	5'GCAGGAGCACGGGTTCT, 5'AGTCCAAAGCAATTTCAGAA,
<i>VaActin1</i>	<i>VaActin</i> -realS	5'GTATTGTGCTGGATTCTGGTGA,

(DQ517935)	<i>VaActin</i> -realA	5'GCAAGGTCAAGACGAAGGATAG,
<i>VaGAPDH</i> (AM437491)	<i>VaGAPDH</i> -realS <i>VaGAPDH</i> -realA	5'CACTGAAGATGATGTTGTTTCC, 5'GCTATTCCAGCCTTGGCAT,
Primers for semiquantitative RT-PCR		
<i>nptII</i> (AY818371)	NPTII-SER-S NPTII-KON-A	5'ATTCGACCACCAAGCGAAAC, 5'TCAGAAGAAGCTCGTCAAGAA,
<i>VirB2</i> (KY000054)	VIRB2-S VIRB2-A	5'ATGCGATGCTTTGAAAGATACCG, 5'TTAGCCACCTCCAGTCAGCG

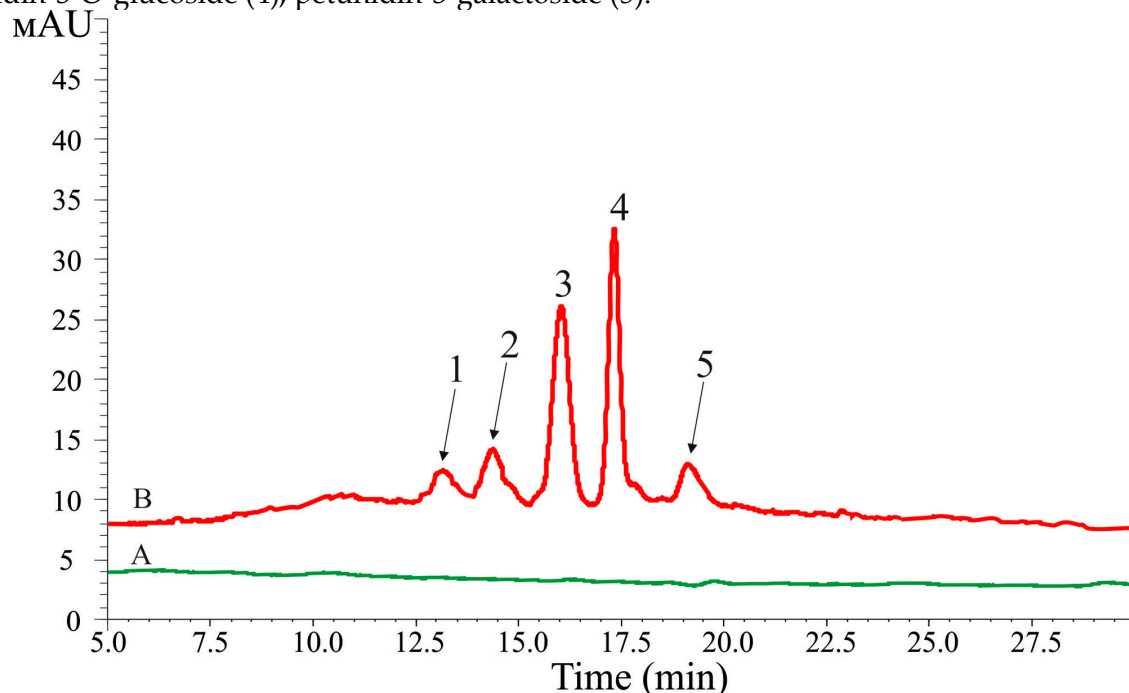
Supplementary Table S3. Comparison of the nucleotide sequences (BLAST) *Vitis amurensis* *VaMyb40* and *VaMyb60* genes with known *VvMyb40* and *VrMyb60* genes from *Vitis vinifera* and *Vitis riparia* respectively. The Genbank accession numbers are given in parentheses.

	<i>VaMyb40</i>	<i>VaMyb60</i>	<i>VvMyb40</i>	<i>VrMyb60</i>
<i>VaMyb40</i>	-	52%	100%	52%
<i>VaMyb60</i>	52%	-	52%	99.2%
<i>VvMyb40</i> (XM_019224778)	100%	52%	-	52%
<i>VrMyb60</i> (XM_034837254)	52%	99.2%	52%	-

Supplementary Figure S1. *Vitis amurens* cell lines used in the experiments.



Supplementary Figure S2. HPLC chromatograms of anthocyanins in *Vitis amurens* in control KA0 cell culture (A) and cell line 40-1 overexpressed *VaMyb40* gene (detected at 530 nm). Cyanidin-3,5-O-diglucoside (1), delphinidin-3-O-glucoside (2), malvidin-3,5-O-diglucoside (3), cyanidin-3-O-glucoside (4), petunidin-3-galactoside (5).



Supplementary Figure S3. *VaMyb40*, *VaMyb60*, *VvMyb40*, and *VvMyb60* genes sequences and primer design for PCR analysis. The colors of the primers match the primers shown in the supplementary table S1.

>*VaMyb40* (s1719-1)

ATGGGAAGACAGCCTTGTTGTGACAAGGTTGGGTTGAAGAGAGGTCCATGGACAATTGAGGAAGATCACAACTCAT
GAGCTTCATCCTCAATAATGGTATCCAATGCTGGAGAATGGTTCCCAAGCTTGCAGGATTGTTGAGATGTGGAAAGAG
TTGCAGACTAAGATGGATCAATTATCTGAGGCCGATCTTAAGAGGGGCGCACTATCAGAATTGGAAGAGAATCAGA
TAATCCAACCTTCATTACGTCTTGTTAACAGGTGGTCTAAGATTGCCTCACACTTCCCTGGTCGCACGGATAATGAAAT
CAAGAACCACTGGAATACACGAATCAAGAAGCGGCTAAAGCAACTGGGGTTAGACCCAGTGACCCACAAACCAATCG

>VvMyb40 (DEFINITION PREDICTED: *Vitis vinifera* myb-related protein 315-like (LOC109123830), mRNA),
ACCESSION, XM_019224778

>VaMyb60 (s1719-6)

>VvMyb60 (ACCESSION XM_034837254, VERSION XM_034837254.1)

[illegible]

Supplementary Figure S4. Proposed model of the signaling pathway leading to stilbene biosynthesis induction and VaMyb40 and VaMyb60 functions in this process in the grapevine cells. Ultraviolet (UV), elicitors, pathogen effectors, and other environmental cues are perceived by specific receptors. Recognition of an external signal leads to sustained calcium influx, activation of calcium sensors, MAPK cascades, which promotes plant hormone signaling and transcription factors (TF) activation including VaMyb40 and VaMyb60. TF activate transcription of the genes responsible for stilbene biosynthesis. CDPK – calcium-dependent protein kinases; CML – calmodulin-like proteins; MAPK – mitogen activated protein kinases; TF - transcription factors.

