Supplementary materials

The *Bradyrhizobium diazoefficiens* type III effector NopE modulates the regulation of plant hormones towards nodulation in *Vigna radiata*

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Figure S1 Phylogenetic analysis of *Bradyrhizobium diazoefficiens* USDA110 NopEs and related proteins. Bootstrap values are expressed as percentages of 10,000 replications. The NopEs of *B. elkanii* (red), *B. japonicum/B. diazoefficiens* (blue), *Microvirga* (green), and *Xanthomonas* (pink) groups are highlighted. No homologs of NopEs could be identified in *Sinorhizobium* (*Ensifer*) spp., *Rhizobium* spp., and *Mesorhizobium* spp.



Figure S2 The relative expression of 16S rRNA, *rhcN*, and putative T3Es genes (*nopE1* and *nopE2*) of *B. diazoefficiens* USDA110 after induction with genistein. The level of expression was measured using qRT-PCR. Values represent mean \pm SD (n = 3), "*", *P* < 0.05 according to Student's *t*-test.



Figure S3 qRT-PCR verification from RNA-seq analysis data for *Vigna radiata* cv. KPS1 between USDA110 and 110nopE1E2 inoculations at and 4 dpi. Significance is indicated by the mean \pm standard deviation (n=3), "*", *P* < 0.05 according to Student's *t*-test.



Figure S4 qRT-PCR analysis data for *Vigna radiata* cv. KPS1 between USDA110 and 110nopE1E2 inoculations at and 4 dpi. Significance is indicated by the mean±standard deviation (n=3), "*", P < 0.05 according to Student's *t*-test.

V. radiata variety	Bradyrhizobium diazoefficiens*			
	USDA110 or 110spc4	110ttsI	110T3SS	110nopE1E2
V. radiata var. radiata (Tl	hai cultivated cultivars)			
KPS1	+++	+	+	+
KPS2	_	+++	+++	+++
SUT1	+++	+	+	+
SUT2	+++	+	+	+
SUT3	+++	+	+	+
SUT4	+++	+	+	+
SUT5	+++	+	+	+
CN36	+++	+	+	+
CN72	+++	+	+	+
CN84-1	+++	+	+	+
M4-2	+++	+	+	+
M5-1	+++	+	+	+
PSU-1	+++	+	+	+
V. radiata var. radiata (Fr	om Asian Vegetable Res	earch and Develo	pment Centre: AVR	DC)
V3092	++	+	+	+
V3131	++	+	+	+
V3387	+	++	++	++
V3464	++	+	+	+
V4451	+	++	++	++
V5197	+	++	++	++

Table S1 Symbiotic phenotypes of *Vigna radiata* varieties inoculated with bradyrhizobial strains.

+, efficient nodulation. The number of "+" indicate levels of nodulation efficiency.

*, Nodule formation was statistically difference between wild type and T3SS mutant strain.

Table S2 Bacterial strains used in this study.

Strains	Characteristics ^a	Reference
Bradyrhizobium diazoefficiens		
USDA110	Wild-type strain, Pol ^r	USDA ^b
110spc4	A spectinomycin-resistant derivative of <i>B. diazoefficiens</i> USDA110, Sp ^r	(Regensburger and Hennecke, 1983)
110T3SS	Δ (<i>nolB</i> , <i>rhcJ</i> , <i>nolU</i> , <i>nolV</i> , and <i>rhcN</i>), previously designated as Δ 132 mutant derived from <i>B. diazoefficiens</i> 110spc4, Km ^r , Sp ^r	(Wenzel et al., 2010)
110nopE1	<i>nopE1</i> replaced by <i>aadA</i> from pHP45 Ω , previously designated as BJD Δ 718 mutant, Sp ^r , Sm ^r	(Wenzel et al., 2010)
110nopE2	Disruption of <i>nopE2</i> by cointegration of plasmid pBJD215, previously designated as BJD215 mutant, Tc ^r	(Wenzel et al., 2010)
110nopE1E2	<i>nopE1</i> and <i>nopE2</i> deletion mutant, previously designated as BJD∆718-∆644 mutant, Sp ^r , Sm ^r , Km ^r	(Wenzel et al., 2010)
110E1E2::E1	110E1E2 derivative complemented with the wild-type <i>nopE1</i> , previously designated as BJD735, Sp ^r , Sm ^r , Km ^r , Tc ^r	(Wenzel et al., 2010)
110E1E2::ncE1	110E1E2 derivative complemented with the non-cleavable <i>nopE1</i> variant, previously designated as BJD740, Sp ^r , Sm ^r , Km ^r , Tc ^r	(Wenzel et al., 2010)

^aPol^r, polymyxin resistant; Km^r, kanamycin resistant; Sm^r, streptomycin resistant; Sp^r, spectinomycin resistant; Tc^r, tetracycline resistant.

^bUnited States Department of Agriculture, Beltsville, MD.

Genotype	Pedigree	Origin	Source or reference
KPS1	Mass selection from	Thailand	SUT ^{1, (a)}
	VC1973A (V3476 x V1400)		
KPS2	Mass selection from VC2778A	Thailand	SUT ^{1, (a)}
SUT1	UTHONG1 x NP29	Thailand	SUT ^{2, (b)}
SUT2	-	Thailand	SUT ^{2, (b)}
SUT3	-	Thailand	SUT ^{2, (b)}
SUT4	MV1 x (MX4-7MO317 x	Thailand	SUT ^{2, (b)}
	MO277)		
SUT5	-	Thailand	SUT ^{2, (b)}
CN36	PAGASA1 x PHLV18	Thailand	SUT ^{1, (c)}
CN72	Selection from mutated KPS2	Thailand	SUT ^{3, (c)}
CN84-1	Selection from mutated CN36	Thailand	SUT ^{4, (c)}
M4-2	Selection from mutated KPS1	Thailand	SUT ^{5, (a)}
M5-1	Selection from mutated KPS1	Thailand	SUT ^{5, (a)}
PSU-1	Mass selection from VC2768A	Thailand	SUT ^{1, (d)}
V3092	-	India	AVRDC ^(e)
V3131	-	-	AVRDC ^(e)
V3387	-	-	AVRDC ^(e)
V3464	-	-	AVRDC (e)
V4451	-	-	AVRDC (e)
V4785	-	India	AVRDC (e)
V5197	-	-	AVRDC ^(e)

Table S3 Pedigree, origin and relevant characteristics

- = unknown data

SUT = Seed was provided by Professor Piyada Alisha Tantasawat, Suranaree University of

Technology, Thailand

AVRDC = Seed was provided by Asian Vegetable Research and Development Center/ World Vegetable Center, Taiwan

- ^(a) = Varieties from Kasetsart University, Kamphaeng Saen Campus, Thailand
- ^(b) = Varieties developed at Suranaree University of Technology, Thailand
- ^(c) = Varieties developed at Chai Nat Field Crops Research Center, Thailand
- ^(d) = Varity from Prince of Songkla University, Thailand
- ^(e) = Varieties obtained from the World Vegetable Center, Taiwan

16S rRNA PBA338F ACTCUTACUGGGAGGCAGCAG die WILDI-heNY CCCCCGTTGCTGG die WILDI-heNY CCCCCGTTGCTGGGATTAG blifeld/upE2) UILDI-blifeld/F ATTACCGCGCTTGCTGGATTAG blifeld/upE2) UILDI-blifeld/F ATTACCGCGCGTTGCTAGGATTAG blifeld/upE2) UILDI-blifeld/F ATTACCGCGCCGTGGATAG UILDI-blifeld/F ATTACCGCCCCCGTGGATG Vigar radius: VActin.F CTACCAGTACTGCCGTGGATG Vigar radius: VActin.F GTCCCGAGCAGGGCAGCAGC Vigar radius: VisAbBLF GTCCCGAGCAGGGGTATGAGAG Vigar radius: VisAbBLF GTCCCGAGCAGGGGTATGAGAG VisAbBLF GTCCCGAGCAGGGGGATTGAG VisAbBLF VisAbBLF GTCCGCAGCAGGGGGATGGAG VisAbBLF VisAbBLF GTCCCACAAGGGGCGTAGTGAG VisAbBLF VisAbBLF GTCCACAAGGGCGCAGCAGCAGC VisAbBLF VisAbBLF GTCCACAAGGGCGGCAAGGGGGGGGAGGGAGGAGGAGGGGGG	Target	Primer name	Primer sequence (5'-3')
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Vignar radiant: PAR1Vir.Parl.FCTGCCAAGGAAGGTAATGAAGAVir.Parl.RGCCAGAATATAGCCAGCAGTTVignar radiant: EDS1Vir.EDS1L.FGGTATGGGATAGGTCATTGAGVir.EDS1L.RCCGACGAAAGATCAGCCAAAGACTCCAAGAVir.EDS1L.RCCGACGAAAGACTCCCAAGAGATGAGAGAGAGAGAGAGAG		Vir-NDR1.R	GAGGTGAACGTCGTCGTATTT
NameVir-Parl RGCCAGAATATAGCCAGCAGTTVigna radiata: EDS1Vir-EDS1LFGGTATGGAGTAGAGTGAGTGAGTGAGVigna radiata: PTI5PTI5-Vr.FCCGACGTGGTGATGTCVigna radiata: PTI5PTI5-Vr.FCCCACCAAGAGCCCGAGAAVigna radiata: PT6PTI6-Vr.FCCTAACCCGACCCGAGAAVigna radiata: PR1PTI-Vr.FCGGAAGGGTGGTGGTGTTVigna radiata: PR1PR1-Vr.FCGCAAGGACCTGTGGTGATTVigna radiata: PR1PR2-Vr.FCCCAAAGGCTGTGATCCTCATAVigna radiata: PR4PR2-Vr.FCGCTAGGCCATCACCCGATACVigna radiata: PR5PR2-Vr.FCGCTGGGGCCACATATCPR2-Vr.FCGCTGCACCCGACTTCTCACVigna radiata: PR4PR4-Vr.FACAATCCTCAACCGACTTCTCACVigna radiata: CSVir-ICS2.RCACTAGGGTCGTACTTCACVigna radiata: CGSVir-ICS2.RTGGTGCTGGTGCTGATGCVigna radiata: CGSVir-GLY2.FGCTTGCTGGTGGTACTTACVigna radiata: CGSVir-GLY2.FGCTTGCTGGTGGTACTACCGGGTTVigna radiata: CGSChalcone.exp.fACCCCAACATAGCACTTACVigna radiata: GA20xGA-2exp.fCGAACGGGGAATTCCGGGTAGCVigna radiata: GA20xGA-2exp.fCGAACGGGGCAAGGATTGVigna radiata: GA20xGA-2exp.fCAAGGAAAGGAGCAGGAATGVigna radiata: GA20xGA-2exp.fCGAAGGTTCCAAGGCATGCAACCVigna radiata: GA20xGA-2exp.fCAAGGAAGGAGGAGAATCGGGTTGVigna radiata: ABA 8'-hydrolase.exp.fCAAGGAAGGAGCAGGAATGVigna radiata: ABA 8'-hydrolase.exp.fCAAGGAGCAGTGGCAAACVigna radiata: ABA 8'-hydrolase.exp.fCAAGGAGCAGT	Vigna radiata: PAR1	Vir-Parl F	CTGCCAAGGAAGGTAATGAAGA
Vigna radiata: EDS1Vir.EDS1L.FGGTATGGGATGAGGTAATGAGVigna radiata: PTi5VIF.FOS1L.RCCGATGGTAGGTGGCTATGCVigna radiata: PTi5PTI5-Vr.fCTCACAAAGCTCACGAAGVigna radiata: PTi6PTI6-Vr.fCGGAAAGGTGGAGTTCCTVigna radiata: PR1PRI-Vr.fCGGAAGGGTCGTAGTTCTTCVigna radiata: PR2PR2-Vr.fCCCAAAGGCGGTGAGTTCTTCTCPgna radiata: PR4PR4-Vr.fATAATGTCGGGCCACACTCAATAVigna radiata: PR5PR5-Vr.fCGCTAAGGCCGTTGATCTTTCVigna radiata: PR4PR4-Vr.fATAATGTCCGGCCACATACVigna radiata: PR5PR5-Vr.fCGCTCAACCCGAATACVigna radiata: PR5PR5-Vr.fCGCTCAACCCGACTCCACTCAATAVigna radiata: PR5PR5-Vr.fCGCTCAACCCGGATCCTACTCTTCTCVigna radiata: CR5Vir-ICS2.FCACTAGGGTCGTACCTACATCTCTVigna radiata: GLY2Vi-GLY2.FCCTTGGCGGGAGATTTCGTGGTGTTCCCVigna radiata: GLY2Vi-GLY2.FCGTTGGCAACTAAGCACTTACVigna radiata: GA20xGA-20.exp.fCGACCAACACCGGGTTCCATCGGGTGTVigna radiata: GA20xGA-20.exp.fCGACCAACACCGGGTTCCATTGVigna radiata: GA20xGA-20.exp.fCGACGAGTACCGCGTTCGVigna radiata: GA20xGA-20.exp.fCGACGAGTACCGCGTTGGTACTCVigna radiata: GA20xGA-20.exp.fCGACGAGTACCGCGTTGGGTACTCVigna radiata: GA20xGA-20.exp.fCAACGCACTTACAACCAGGTAGGAACVigna radiata: GA20xGA-20.exp.fCGACGAGGAGTTGCAACCVigna radiata: AbA 8'-hydrolase.exp.fCAACGCACGGAGTAGGCAGGAACVigna radiata: AbA 8'-hydrolase.exp.fC		Vir-Parl.R	GCCAGAATATAGCCAGCAGTT
Note and additional set in the image of t	Vigna radiata: EDS1	Vir-EDS1L F	GGTATGGGATGAGGTGATTGAG
Vigna radian:: PT5 PT15-Vr.f CTCACCAAAGACTCCACCAA Vigna radian:: PT6 PT15-Vr.f CTCACCAAAGACTCCACCAA Vigna radian:: PT6 PT15-Vr.f CTCACCAAAGACTCCACCAA Vigna radian:: PT6 PT16-Vr.r GCGAAACGTGGAGTTCTCT Vigna radian:: PR1 PR1-Vr.f CGCAAAGGCTGTAGTT Vigna radian:: PR2 PR2-Vr.f CCCAAAGGCCCAATATC PR2-Vr.r CGTTGAGGCCAACCTACTCCAATA Vigna radian:: PR4 PR4-Vr.f ATAATGTCCGGGCCACATATC Vigna radian:: PR5 PR5-Vr.f CGCTCAACCCGACTTCTC Vigna radian:: RS Vis-CS2.F CACTAGGGTGTACCTACTCAATA Vigna radian:: GLY2 Vis-GLY2.F GCTTGCTGGTGTGTTTCC Vis-GLY2.F GCTTGCTGGTGGTGATTAC Vis-GLY2.F Vigna radian:: GLY2 Vis-GLY2.F GCTTGCTGGGGGAATAC Vigna radian:: GLY2 Vis-GLY2.F GCTTGCTGGGGGAATC Vigna radian:: GLY2 Vis-GLY2.F GCTTGCTGGGGGGGAATCCGGGT Vigna radian:: GLY2 Vis-GLY2.F GCTTGCTGGGGGGGAATCGCGGT Vigna radian:: GLY2 Vis-GLY2.F GCTTGCTGGGGGGGAATCGCGGT Vigna radian:: GA20ax GA-20axp.f GGCGGAAAGCGGGGAATCGCGGTT		Vir-EDS1L.R	CCGATGGTAGTTGGCTATGTC
PTIS-Vr.rACGATTICGGCIGGGAAAWigna radiata: PTI6PTI6-Vr.fCTTTAACCCGACCCGAGAAGPTI6-Vr.rGCGAAACGTGGAGTTCTCTWigna radiata: PR1PRI-Vr.fCGAATGGACCTTATGGTGAGAAPR1-Vr.rTTACCAGGAGGGCGTAGTWigna radiata: PR2PR2-Vr.fCGTTGAGGCCATCACTCAATAWigna radiata: PR4PR4-Vr.rACAATCCTCCGGCCACATATCPR2-Vr.rCGTTGAGGCCATCACTCAATAWigna radiata: PR4PR4-Vr.rACAATCCTCCGGCCACATATCPR3-Vr.fCGCTCACCCGACTTCTACWigna radiata: ICSPK5-Vr.fCGCTCACCCGACTTCTCTVigna radiata: ICSVir-ICS2.FCACTAGGGTGGTGGTTGTTCCVigna radiata: GLY2Vir-GLY2.FGCTTTGCTTGGGGGTGGTTTCCVigna radiata: GLY2Vir-GLY2.FGCTTGCTTGGGGGAGACCACTTACVigna radiata: CHSChalcone exp.fACCCCAACATAGCCATTACVigna radiata: GA20xGA-2.exp.fCGGCAAGGACTTGCGAGGTTVigna radiata: GA20xGA-2.exp.fCGTCAACCACGGGTTGTTGCVigna radiata: GA20xGA-2.exp.fCGTCAACCACGGGTTTGVigna radiata: GA20xGA-2.exp.fCGTCAACCACGGGTTTGVigna radiata: GA20xGA-2.exp.fCGTCAACCACGGGTTTGVigna radiata: GA20xGA-2.exp.fCGTCAACCACGGGTTTGVigna radiata: Anex D4Annexin.exp.fAGGCAGTTAACCCACTAAGCCACTTCVigna radiata: Anex D4Annexin.exp.fGCAAGGCAGTCACATTGVigna radiata: SGT1SDT1.exp.fCGTCACCCACACGTCACTTCGGGGTTCVigna radiata: SGT1SDT1.exp.fCGCCCCACACTCCGAAGGVigna radiata: SGT1SDT1.exp.fCGT	Vigna radiata: PTi5	PTI5-Vr.f	CTCACCAAAGACTCCACCAA
Vigna radian:: PTi6 PTI6-Vr.f CTTTAACCGACCGAGAAG Vigna radian:: PR1 PRI-Vr.r GGAAACGTGGAGTTCTCT Vigna radian:: PR2 PRI-Vr.r TTACCAGGAGGTCGTAGTT Vigna radian:: PR4 PRI-Vr.r CCCAAAGGCGTGTAGTTCTTC Vigna radian:: PR4 PRI-Vr.f CCCAAAGGCGTCTACTCACTAATA Vigna radian:: PR5 PR2-Vr.f CGCTTGAGTCCTTC Vigna radian:: CR5 Vis-CS2.F CACTAGGTGGTGGTACCTACTCACT Vigna radian:: CGLY2 Vis-CS2.F CACTAGGGTGGTACCTACTCTCT Vigna radian:: GLY2 Vis-CS2.R TAGTGCTGGGTGGTGTTTCC Vigna radian:: GLY2 Vis-GLY2.F CCCTAACCAGGGTGTACTACCTTCT Vigna radian:: GLY2 Vis-GLY2.F CCTTGCTGGTGGTGTTCC Vigna radian:: GLY2 Vis-GLY2.F CGCTGAACCAGGGTGTACTAC Vigna radian:: GLY2 Vis-GLY2.F CCAACGAGGTTGGAGAACCCGTAGT Vigna radian:: GLY2 Vis-GLY2.F GGCTGAACCAGGTTGGTACTCC Vigna radian:: GLY2 Vis-GLY2.F GGCTGAACCAGGGTTACCCCCTTC Vigna radian:: GLY2 Vis-GLY2.F GGCTGAACCAGGGTTACCACTTC Vigna radian:: GLY2 Vis-GLY2.F GGCTGAACCAGGGGAATCCGGGTT Vigna radian:: GLY3 GA-	3	PTI5-Vr.r	ACGATTTCGGCTGGGAAA
original radiata:File Vir.Offerentiation of the second of the seco	Vigna radiata: PTi6	PTI6-Vr.f	CTTTAACCCGACCCGAGAAG
Vigna radiata: PRI PRI-Vr.f CGAATGGACCTTATGGTGAGAA PRI-Vr.r TTACCAGGAGGGTGTGTT Vigna radiata: PR2 PR2-Vr.f CGTTGAGGCCATCACTCATA PR2-Vr.r CGTTGAGGCCATCACTCATA Vigna radiata: PR4 PR4-Vr.f ATAATGTCCGGGCCACATATC PR4-Vr.r ACAATCCCCACCGATTGTCTG Vigna radiata: PR5 PR5-Vr.f CGCTCAACCCGACTTCACC Vigna radiata: ICS Vir-ICS2.F CACTGGGTGGTGTTTCCC Vigna radiata: GLY2 Vir-GLY2.F GCTTGGTTGGTGGTGGTGATAC Vir-GLY2.R TTGGCGGAGGATTCCGTAGG Vigna radiata: CHS Chalcone.exp.f ACCCCAACATAAGACTTGCTAGG Vigna radiata: GA20x GA-2exp.f GAGGCAAAGACTTGCGGGGGAAC Vigna radiata: GA20x GA-2exp.f CGCAACCGGGTGTTCCATTG Vigna radiata: GA20x GA-2exp.f CGCAACCGGGTGTCCCATTG Vigna radiata: GA20x GA-2exp.f CGAGCAAAGGAGGCAGAGACTGGGTATG Vigna radiata: GA20x GA-2exp.f CGAGCGAAAGGAGCAGGGAGAGGCAGAGACTG Vigna radiata: GA20x GA-20xep.f CAAGGAAAGGAGCAGGGAGAGAGATTG Vigna radiata: Annex D4 ABA 8*-hydrolase.exp.f CAAGGGAGGATTGCGATTG Vigna radiata: SGT1 <t< td=""><td></td><td>PTI6-Vr.r</td><td>GCGAAACGTGGAGTTCTCT</td></t<>		PTI6-Vr.r	GCGAAACGTGGAGTTCTCT
PRI-Vr.rTTACCAGGAGGGTGTAGTTVigna radiata: PR2PR2-Vr.fCCCAAAGGCGTGTAGTCTTTCPR2-Vr.rCGTTGAGGCCATCACTCAATAVigna radiata: PR4PR4-Vr.fATAATGTCCGGGCCACATATCPR3-Vr.rACAATCCTCACCGATTGTGTGVigna radiata: PR5PR5-Vr.fAGTTCCCTGCAGCAATACVigna radiata: CISVir.ICS2.FCACTAGGGTCGTAGTGTTCCVigna radiata: GLY2Vir.GLY2.FGCTTGCTGTGTGTGTGTGTGVigna radiata: CHSChalcone.exp.fACCCTAACCACATAGCACTTACVigna radiata: CHSChalcone.exp.fACCCCAACATGGGAACCACTTACVigna radiata: GLY2Vir.GLY2.RTTGGCGGGGAACCATTGCGAGAACVigna radiata: GLSChalcone.exp.fGAGGCAAAGCTTGCGAGAACVigna radiata: GA2oxGA-2exp.fCGTCAACCACGGTGTTGCCATGGa-2exp.fCCAACCGACATGGCGGTTGGA-2exp.fVigna radiata: GA2oxGA-20.exp.fCAAGGAAAGGACGCGAAGCTTGCVigna radiata: GA2oxGA-20.exp.fCAAGGAAAGGAGCAGAGATGGCGTTGVigna radiata: Annex D4Annexin.exp.fAGGAGTTTACAAGGACCACCACCVigna radiata: SGT1SDT1.exp.fGTGGCAAGGATCCGATGVigna radiata: SGT1SDT1.exp.fCCAACGCACTCCCCACACAAGSDT1.exp.fCGCTCCAACGCACAGTGGTTGVigna radiata: CH3LOX.exp.fCTTCCCAGGGATGGTAGCATGVigna radiata: GH3GH3.exp.fGTCCCCCCGGGGATGTACAAGTTTGVigna radiata: GST1SDT1.exp.fCCAACGCACGTCCATCCCAAAGASDT1.exp.fCCTCCCCGGGGGATGTACAAGTTGGVigna radiata: CH3GH3.exp.fCTCCCCCCCGCACTCCACAAAGSDT1.exp.fC	Vigna radiata: PR1	PR1-Vr.f	CGAATGGACCTTATGGTGAGAA
Vigna radiata: PR2PR2-Vr.rCCCAAAGGCTGTTGATCTTTCVigna radiata: PR4PR4-Vr.fATAATGTCCGGGCACAATAAVigna radiata: PR5PR4-Vr.fATAATGTCCGGGCCACAATACPR4-Vr.rACAATCCTCACCGTTGTGTGVigna radiata: PR5PR5-Vr.fCGCTCAACCCGACATACVigna radiata: ICSVir-ICS2.FCACTAGGGTCGTACCTACTTCTVigna radiata: GLY2Vir-GLY2.FGCTTGGTGGTGTGTCCVigna radiata: CHSChalcone.exp.fACCCCAACATAAGCACTTACVigna radiata: CHSChalcone.exp.rAGGCGTGAACCCGGTGTGGTATACVigna radiata: CHSChalcone.exp.rAGGCGTGACAACATAGCACTTACVigna radiata: GA20xGA-2.exp.fGAGGCAAAGATTGGGAGAATCVigna radiata: GA20xGA-2.exp.fCGTCAACCACGGTGTTCCATTGGA-2.exp.fCGTCAACCACGGTGGTAGGGA-2.exp.fVigna radiata: AbA 8'-hydrolase.exp.fAGGCAGTTCCAGGTGGCAAACVigna radiata: AbA 8'-hydrolase.exp.fCAAGGACAAGGTTCCAGGTTGVigna radiata: GA20xGA-2.exp.fCAAGGACAAGGTTCCAGGTTGGA-2.exp.fCGTGTACCCCAACGTAAGGTTCVigna radiata: AbA 8'-hydrolase.exp.fCAAGGACAAGGACAGAGATTGABA 8'-hydrolase.exp.fCAAGGACATGCCCAACACVigna radiata: Annex D4Annexin.exp.fADA 8'-hydrolase.exp.fGCAGTTCCCACGCGCATCVigna radiata: CSTPeroxidaseA2.exp.fGTTACTCAGCTGGTGGTAGATGVigna radiata: CSTPeroxidaseA2.exp.fGTTCCCAGTGGTGCAACCVigna radiata: CSTPeroxidaseA2.exp.fGTTCCCAGTGGTGGTGGTTGCVigna radiata: SGT1SDT1 exp.fCCACCAGTGGTGGTGGTTGV		PR1-Vr.r	TTACCAGGAGGGTCGTAGTT
PR2-Vr.r.CCTTGAGGCCATCACTCAATAVigna radiata: PR4PR4-Vr.fATAATGTCCGGGCCACAATACPR4-Vr.rACAATCCTCACCGATTGTGTGVigna radiata: PR5PR5-Vr.rACAATCCCCGACTTCTACPR8-Vr.rACAATCCTCCTGGAGCAATACVigna radiata: ICSVir-ICS2.FCACTAGGGTCGTACCTACTTCTVigna radiata: GLY2Vir-GLY2.FGCTTTGCTGGTGGTGTTCCVigna radiata: CHSChalcone.exp.rAGCCTGACACATAGGCACTTACChalcone.exp.rAGCCTGACAAGGTGTGCACTTACChalcone.exp.rAGCCTGACAAGGTGGTGCACTTACVigna radiata: PDFVr-defensin.exp.rTTCGGGTTGGGGGAGAATCCGGTTVigna radiata: GA20xGA-2.exp.fCCTAACCACGAGTGTCCATTGGA-2.exp.rCCTAACCACGGTGTTCCATTGGA-2.exp.rCCTGCCAACCACGGGTTVigna radiata: ABA 8'-hydrolase.exp.fAGAGGAAAGACTGCGAAGGAGTGGA-2.0xxp.rCTGTCCCAACGAGGTGTCVigna radiata: ABA 8'-hydrolase.exp.rCTGTGCCAAGGAGCAGCACCACCGGTTVigna radiata: ABA 8'-hydrolase.exp.rGTGTGCCCAACGGCGTTGVigna radiata: ABA 8'-hydrolase.exp.rGTGTGCCCAACGAGGATGABA 8'-hydrolase.exp.rGTGTGCGATGGATCACCACCACCCGCGTTGVigna radiata: GSTPeroxidaseA2.exp.rAGCCAGTTCCTGAGCTGCCATCCVigna radiata: GSTSGT1.exp.fCCATCCAGCTCGTGGATGGTTGVigna radiata: GSTSGT1.exp.fCCATCCAGCTCGTGGGTGTGVigna radiata: GSTSGT1.exp.fCCATCCAGCTCGTGGGTGTGVigna radiata: GSTSGT1.exp.fCCATCCAGCTGCTGGGTGGTGGTGGTGGVigna radiata: GSTSGT1.exp.fCCATCCAGCTGCTGGGTGGGTGGTGGTGGV	Vigna radiata: PR2	PR2-Vr.f	CCCAAAGGCTGTTGATTCTTTC
Vigna radiata: PR4 PR4-Vr.f ATAATGCCCGGCCACATATC PR4-Vr.r ACAATCCTCACCGACTTCTAC PR5-Vr.f CGCTCAACCCGACTTCTAC PR5-Vr.r AGTTCCCTCTGCAGCAATAC Vigna radiata: PR5 PR5-Vr.r AGTTCCCTCTGCAGCAATAC Vigna radiata: ICS Vir-ICS2.F CACTAGGGTGTGTTTCC Vir-ICS2.R TGGTCGGGTGGTGTTTCC Vigna radiata: GLY2 Vir-GLY2.R TTGGCGAGGATTCGTAGTG Vigna radiata: CHS Chalcone.exp.f ACCCCAACATAAGCACTTAC Vigna radiata: PDF Vr-defensin.exp.f GAGGCAAAGACTTGCGAGAAC Vigna radiata: GA20x GA-2.exp.f CGTCAACCAGGTGTCCCATTG Vigna radiata: GA20x GA-2.exp.f CGTCAACCACGGTGTCCCATTG Vigna radiata: GA20x GA-2.exp.f CGTCCAACCAGGTATG Vigna radiata: GA20x GA-2.exp.f CTGTCCCCAACGGTATG Vigna radiata: GA20x GA-2.exp.f CTGTCCCCAACGGAAGCAGAGATTG Vigna radiata: GA20x GA-2.exp.f CTGTCCCCAACGGAAGCAGAGATG Vigna radiata: GA20x GA-2.exp.f CTGTCCCCAACGGATGGTATG Vigna radiata: GA20x ABA 8'-hydrolase.exp.f CAAGCAGAAGGACAAGCACAAC Vigna radiata: SGT1 SGT1.exp.f <td></td> <td>PR2-Vr.r</td> <td>CGTTGAGGCCATCACTCAATA</td>		PR2-Vr.r	CGTTGAGGCCATCACTCAATA
NormalizedPR4-VirACAATCCTCACCGTTGTCTGVigna radiata: PR5PR5-Vir.fCGCTCAACCCGACTTCTACPR5-Vir.rAGATCCCTCTCCAGCAATACVigna radiata: ICSVir-ICS2.FCACTAGGGTCGTACCTACTTCTVigna radiata: GLY2Vir-GLY2.FGCTTTGCTTGGTGGTGTTCCVigna radiata: CHSChalcone.exp.fACCCCAACATAAGCACTTACVigna radiata: CHSChalcone.exp.rAGCCCGACAGTGGTAGTACVigna radiata: CHSChalcone.exp.rAGCCTGACAAGTTGGGAGAATCCGGGTVigna radiata: GA20xGA-2.exp.fCGTCAACCACGGGGTTTCCATTGGigna radiata: GA20xGA-2.exp.fCGTCAACCACGACGTGGGAGACCGGGTTVigna radiata: GA20xGA-2.exp.fCGTCCAACCGACGTGGTATGGara radiata: ABA 8'-hydrolaseABA 8'-hydrolase.exp.fCAGGAGAAGGGACACGAGATTGVigna radiata: ABA 8'-hydrolaseABA 8'-hydrolase.exp.fCAGGAGAACGGACCTACVigna radiata: ABA 8'-hydrolaseABA 8'-hydrolase.exp.fCAGGAGAAGGAGAGAGTTGVigna radiata: ABA 8'-hydrolaseABA 8'-hydrolase.exp.fCAGGAGAAGGAGAGAGTTGVigna radiata: ABA 8'-hydrolaseABA 8'-hydrolase.exp.fCAGGCAGTTTACAAGCCCTACVigna radiata: GSTPeroxidaseA2 exp.fGTTGCGCATGGATCGGATGGGAGGGAGGGGAGGGGGGGGG	Vigna radiata: PR4	PR4-Vr.f	ATAATGTCCGGGCCACATATC
Vigna radiata: PR5PR5-Yr.fCGCTCAACCCGACTTCTACVigna radiata: ICSVir-ICS2.FCACTAGGGTCGTACTACTTCTVigna radiata: ICSVir-ICS2.RTAGTTGCTTGGTGGTGTTTCCVigna radiata: GLY2Vir-GLY2.FGCTTTGCTGGTGGTGATTACVigna radiata: CHSChalcone.exp.fACCCCAACATAAGCACTTACChalcone.exp.fACCCCGAACATAAGCACTTACVigna radiata: PDFVr-defensin.exp.fGAGGCAAAGACTGGGAGAATCCGGTTVigna radiata: GA20xGA-2.exp.fCGTCAACCACGGGGAGATTCGCAGGAGACVigna radiata: GA20xGA-2.exp.fCGTCAACCACGGTGTGGGAGAACCGGTTVigna radiata: GA20xGA-2.exp.fCGTCCAACCACGGTGTGGGAGGAGACCGGTTVigna radiata: GA20xGA-2.exp.fCGTCCAACCACGGTGTGGGAGGAGACCGGTTVigna radiata: GA20xGA-2.exp.fCGTCCCAACCGACGTGGTATGGa-20.exp.fCTGTCCCCAACGTAAGGTTCGA-20.exp.fVigna radiata: GA20xGA-20.exp.fCTGTCCCCAACGTAAGGTTCVigna radiata: GA20xGA-20.exp.fCTGTCCCCAACGTAAGGTTCVigna radiata: GA20xGA-20.exp.fCTGTCCCCAACGTAGGTTGAgaa radiata: GA20xGA-20.exp.fCTGTCCCCAACGTAGGTTTCVigna radiata: SGT1SGT1.exp.fAGGCAGTTTACAAGCACGTACCACAAACVigna radiata: SGT1SGT1.exp.fCCACTCCCGGATGGTTTGVigna radiata: SGT1SGT1.exp.fCCACAGCTCCGTCGTCGGATGGVigna radiata: CH3SDT1.exp.rCAACGGCACGTTGATGGGATGGVigna radiata: ILOXLOX.exp.fCTTCCCAGGATGATCATCAAGGVigna radiata: CH3GH3.exp.fAAGGCGACGGTGGTGGTGGTTGVigna radiata: CH3CH3.ex		PR4-Vr.r	ACAATCCTCACCGTTGTCTG
New HammanReformControl Control Control Control $PR5$ - Vrr AGTCCCTCTGCAGCATAC $Vigna radiata: ICS$ $Vir-ICS2.F$ CACTAGGGTCGTACCTACTTCT $Vigna radiata: GLY2$ $Vir-GLY2.F$ GCTTTGCTTGGTGCTGATGC $Vigna radiata: GLY2$ $Vir-GLY2.R$ TTGGCGAGGATTTCGTAGTG $Vigna radiata: CHS$ Chalcone.exp.fACCCCAACATAAGCACTTAC $Chalcone.exp.f$ ACCCCGACAAGTTGGCAGAAC $Vigna radiata: PDF$ Vr -defensin.exp.fGAGGCAAAGGTTGCGAGAAC $Vigna radiata: GA20x$ GA-2.exp.fCGTCAACCACGGGTTGCGATGG $GA-2.exp.r$ CCAACCGACATCGCGGTTGGA-2.exp.f $Vigna radiata: GA20x$ GA-2.exp.fCGTCAACCACGGGTGGGAGATCCGGTT $Vigna radiata: GA20x$ GA-2.exp.fCCAACCGACACTGCGATGGTAG $GA-20.exp.r$ CTGTCCCCAACGTACGGTTG $Vigna radiata: ABA 8'-hydrolaseABA 8'-hydrolase.exp.fCAAGAGAAAGGAGCAGAGATTGABA 8'-hydrolaseABA 8'-hydrolase.exp.fCAAGAGAAAGGAGCAGAGAGTTGVigna radiata: Annex D4Annexin.exp.rGTGCATGCTCAAGCCACTACVigna radiata: SGT1SGT1.exp.fGCAGTTCCAGCTGGATGGTTTCVigna radiata: SGT1SGT1.exp.fGCAGTTCCAGCTGGATGGTTGVigna radiata: SGT1SDT1.exp.fCAATCAGCTTCGTGGATGGTTGVigna radiata: SGT1SDT1.exp.fCAATCAGCTTCGTGGATGGTTGVigna radiata: SGT1SDT1.exp.fCAATCAGCTTCGTGGATGGTTGVigna radiata: SGT1SDT1.exp.fCATCCCTCGTGTGGGATGGTTGVigna radiata: SGT1SDT1.exp.fCATCCCGGGATGATCATCAAGGVigna radiata: SGT1SDT1.$	Vigna radiata: PR5	PR5-Vr.f	CGCTCAACCCGACTTCTAC
Vigna radiata: ICSVir-ICS2.FCACTAGGGTCGTACCTACTTCTVigna radiata: ICSVir-ICS2.RTAGTTGCTCGGTGGTGTTCCVigna radiata: GLY2Vir-GLY2.FGCTTTGCTGGTGGTGGTGACTACVigna radiata: CHSChalcone.exp.fACCCCAACATAAGCACTTACChalcone.exp.rAGCCTGACAAGTTGCGAGATVigna radiata: PDFVr-defensin.exp.fGAGGCAAAGACTTGCGAGAACVigna radiata: GA20xGA-2.exp.fCGTCAACCACGGGTTCGCATTGGA-2.exp.fCGTCAACCACGGCGTTCGGA-2.exp.rVigna radiata: GA20xGA-2.exp.fCGTCAACCACGGAGTTCGCGGTTGVigna radiata: GA20xGA-2.exp.fCGTCACCCACGGAGGTCVigna radiata: ABA 8'-hydrolaseABA 8'-hydrolase.exp.rCTGTCCCCAACGTAAGGTAGVigna radiata: ABA 8'-hydrolase.exp.rGTAGTATCCTGAGCTGCAAACVigna radiata: Annex D4Annexin.exp.fAGCCAGTTTACCAAGCACTACAnnexin.exp.rATCAATTCTCAATGCTGCAATGVigna radiata: SGT1SGT1.exp.fGCAAGTTCCCATCACACAAGAVigna radiata: LOXLOX.exp.fGCAAGTTCCCATCACAAAGVigna radiata: LOXLOX.exp.fCTTCCCTGGTGATGGATCGTGGATTGVigna radiata: CH3GH3.exp.rCAATCAGCTTCGTGAATGGTTCVigna radiata: CH3GH3.exp.fGCAAGTTCCCATCACAAAGVigna radiata: CH3CH3.exp.fGCAAGTTCCCTGGATGGATGGATGGATGVigna radiata: CH3CH3.exp.fGCCCCCCCCCCCCCCCCCCCCCACATCAAAGVigna radiata: CH3CH3.exp.fCATCACCTTGCTGAAGGGATGTACTTTCCigna radiata: CH3CH3.exp.fCTCCCCCGCCCCCCCCCCCCATCACAAAGVigna radiata: CH3CH3.exp.fCTCCCCCGC		PR5-Vrr	AGTTCCCTCTGCAGCAATAC
Vir-ICS2.RCheffertochroniteriteriteriteriteriteriteriteriteriter	Vigna radiata: ICS	Vir-ICS2.F	CACTAGGGTCGTACCTACTTCT
Vigna radiata: GLY2Vir-GLY2.F.GCTTTGCTTGGTGCTGATTACVigna radiata: CHSChalcone.exp.fACCCCAACATAAGCACTTACChalcone.exp.rAGCCTGACAAGTTGGTAATCVigna radiata: PDFVr-defensin.exp.rAGCCGGAGAAATCCGGTTVigna radiata: GA20xGA-2.exp.fCGTCAACCACGGTGTCCATTGGA-2.exp.fCGTCAACCACGGTGTCCATTGVigna radiata: GA20xGA-2.exp.fCGTCAACCACGGTGTCCATTGGA-2.exp.fCGTCAACCACGGTGTCCATTGVigna radiata: GA20xGA-2.exp.fCAAGGAAAGGACGAGAGCAGAGACTGGCGGTGVigna radiata: GA20xGA-2.exp.fCAAGGAAAGGACGAGAGGAGAGAGGAGAGAGGAGAGAGA		Vir-ICS2.R	TAGTTGCTCTGGTGTGTGTTTCC
Vir-GLY2.RTGGCGAGGATTTCGTAGTGVigna radiata: CHSChalcone.exp.fACCCCAACATAAGCACTTACChalcone.exp.rAGCCTGACAAGTTGGTAATCVigna radiata: PDFVr-defensin.exp.fGAGGCAAAGACTTGCGAGAACVigna radiata: GA20xGA-2.exp.fCGTCAACCACGGGTGTCCATTGGaradiata: GA20xGA-2.exp.fCGTCAACCACGGTGTCCATTGVigna radiata: GA20xGA-2.exp.fCAACCGACCACGGTGTTCGVigna radiata: GA20xGA-2.exp.fAGAAGTACTGCGATGGTATGGa-2.exp.rCTGTCCCCAACGTAAGGTTCVigna radiata: ABA 8'-hydrolaseABA 8'-hydrolase.exp.fCAAGAGAAAGGAGCAGAGATTGABA 8'-hydrolaseABA 8'-hydrolase.exp.fCAAGAGAAAGGAGCAGAGATTGVigna radiata: Annex D4Annexin.exp.fAGCAGTTTCCAAGCGCAAACVigna radiata: GSTPeroxidaseA2.exp.fGTTGCGATGGATACGGCAATGVigna radiata: SGT1SGT1.exp.fGCAAGTTCCCATCAGCACAAAGVigna radiata: LOXLOX.exp.fCTTCCAAGCTCCTGTGGATGTTGVigna radiata: LOXLOX.exp.fCTTCCAAGGGATGATCATTTGVigna radiata: CEP5CEP5.exp.fAGAGCACGTGATGTGGGAATGVigna radiata: CCF5CEP5.exp.fAGAGCACGTGGATGGGAATGVigna radiata: CEP5CEP5.exp.fAGAGCACGTGGATGGGAATGVigna radiata: CCF5CEP5.exp.fAGGAGCACGTGGATGGGAATGVigna radiata: CEP5CEP5.exp.fAGGAGCACGTGGATGGGAATGCEN5CEP5.exp.fAGGAGCACGTGGATGGGAATGCEN5CEP5.exp.fAGGAGCACGTGGATGGGAATGCEN5CEP5.exp.fAGGAGCACGTGGATGGGAATGCEN5CEP5.exp.fAGGAGCACGTGG	Vigna radiata: GLY2	Vir-GLY2.F	GCTTTGCTTGGTGCTGATTAC
Vigna radiata: CHSChalcone.exp.rACCCCAACATAAGCACTTACVigna radiata: PDFVr-defensin.exp.fGAGGCAAAGACTGCGAGAACVigna radiata: GA20xGA-2.exp.fCGTCAACCACGGTGTCCCATTGGaradiata: GA20xGA-2.exp.fCGTCAACCACGGTGTCCATTGGaradiata: GA20xGA-2.exp.fCGTCAACCACGGTGTCCATTGGaradiata: GA20xGA-2.exp.rCCGTCCACCGACGTGGTATGGaradiata: GA20xGA-2.exp.rCTGTCCCCAACGTAAGGTTCVigna radiata: GA20xGA-20.exp.fCAACGACACGGACGTGCGATGGGA-20.exp.rCTGTCCCCAACGTAAGGTTCVigna radiata: ABA 8'-hydrolaseABA 8'-hydrolase.exp.rGTAGTATCCTGAGGTGCAAACABA 8'-hydrolase.exp.rVigna radiata: Annex D4Annexin.exp.fAnnexin.exp.rATCAATTCTCAATGCTGCAATCVigna radiata: GSTPeroxidaseA2.exp.fGT10CGATGGATCGCAATGSDT1.exp.rVigna radiata: SGT1SGT1.exp.fSGT1.exp.rCAATCAGCTCCTGGTGGATGTGGVigna radiata: LOXLOX.exp.fCTTCCAAGGGATGAGATGLOX.exp.rGTCCACGCACATCAAGGGATGGVigna radiata: CBT3GH3.exp.rGTAGCCACGCACATCATTTGVigna radiata: CBT3GH3.exp.rCGTCTTAAACACAGGGATGACATTTGVigna radiata: CEP5CEP5.exp.fCEP5.exp.fAGGCGCCGTGGTGTAGTTGVigna radiata: CEP5CEP5.exp.fCEP5.exp.fCAGGCCCGTGCTGGGAATGCEP5.exp.fCAGGCCCGTGGTGTAGTTGGAATGCEP5.exp.fCAGGCCCGTGGTGGGAATGCEP5.exp.fCAGGCCCGTGGTGGGAATGCEP5.exp.fCAGCACCTGCTCGCTGCGTG		Vir-GLY2.R	TTGGCGAGGATTTCGTAGTG
Chalcone.exp.rAGCCTGACAAGTTGGTAATCVigna radiata: PDFVr-defensin.exp.rTTCGGGTTGGGGAGAACVigna radiata: GA2oxGA-2.exp.fCGTCAACCACGGTGTTCCATTGGA-2.exp.rCCAACCGACATCGCCGTTGVigna radiata: GA2oxGA-2.exp.rCCAACCGACGTGCGATGGTATGGA-2.exp.rCCAACCGACGTGCGCGTTGVigna radiata: GA2oxGA-2.0.exp.fAGAGTACTGCGATGGTATGGA-2.exp.rCCAACCGACGTGCCAACGTAAGGTCVigna radiata: ABA 8'-hydrolase.exp.fCAAGAGAAAGGAGCAGAGAGATGABA 8'-hydrolase.exp.fCAAGAGAAAGGAGCAGAGAGTGABA 8'-hydrolase.exp.rGTAGTATCCTGAGCTGCAAACVigna radiata: Annex D4Annexin.exp.rAnnexin.exp.rATCAATTCTCAATGCTGCAATGVigna radiata: GSTPeroxidaseA2.exp.fGT1 exp.fGCAAGTTCCCAACGACAAGGVigna radiata: SGT1SGT1.exp.fCAATCAGCTTCGTGGATGTGGVigna radiata: LOXLOX.exp.fCTCCCCGGATGGATCAAGGVigna radiata: LOXLOX.exp.fCTCCCAGGCACATCACAAGGVigna radiata: GH3GH3.exp.fAAAGGCAAGGGATGGAAGGGTATGTAGTTGVigna radiata: CEP5CEP5.exp.fAAGGCACGTGGATGGATGGATGGGATGGATGGVigna radiata: CEP5CEP5.exp.fCEP5.exp.fAGGAGCACGTGCGGAATGCAATGCHES axp.rAGGGGCACTTGCGCAAAGGCEP5.exp.fCAGGACCGTGGTGATGGTAGTTGCEP5.exp.fCAGGACCGTGCGTGATGGTAGTTGCEP5.exp.fCAGGACCTGCCGCGAAATCCEP5.exp.fCAGGACCCTGCGCGAAATCCEP5.exp.fCAGGACCCTGCGCGAATGCCCCCCGCGAAATCCEP5.exp.f </td <td>Vigna radiata: CHS</td> <td>Chalcone.exp.f</td> <td>ACCCCAACATAAGCACTTAC</td>	Vigna radiata: CHS	Chalcone.exp.f	ACCCCAACATAAGCACTTAC
Vigna radiata: PDFVr-defensin.exp.fGAGGCAAAGACTTGCGAGAACVigna radiata: GA2oxGA-2.exp.fCGTCAACCACGGTGTTCCATTGGA-2.exp.rCCAACCGACATCGCCGTTGVigna radiata: GA2oxGA-20.exp.fAGAAGTACTGCGATGGTATGGA-20.exp.rCTGTCCCAACGACGTAGTATGGA-20.exp.rCTGTCCCCAACGTAAGGTTCVigna radiata: ABA 8'-hydrolaseABA 8'-hydrolase.exp.rCTGTCCCAACGACGAGAGATGVigna radiata: ABA 8'-hydrolaseABA 8'-hydrolase.exp.rGTAGTATCCTGAGCTGCAAACVigna radiata: Annex D4Annexin.exp.fAGGCAGTTTACAAGCACTACAnnexin.exp.rATCAATTCTCAATGCTGCAATGVigna radiata: SGT1PeroxidaseA2.exp.fGTAGCTACTTCAGCTGCAATGVigna radiata: ThumatinThaumatin-exp.fCTCCCTGGTTGATGGTTGVigna radiata: SGT1SGT1.exp.fGCAAGTTCCCATCACACAAAGVigna radiata: ThumatinThaumatin-exp.rCGTCTTAAACACAGTGGTTGVigna radiata: CST1LOX.exp.fCTTCCCAAGGGATGAATCATTGVigna radiata: SGT1GGT1.exp.fCGTCTTAAACACAGTGCATGVigna radiata: SGT1GH3.exp.fCTTCCCAAGGGATGAATCATTGVigna radiata: CDXLOX.exp.fCTTCCCAAGGGATGAATCATTGVigna radiata: CDXLOX.exp.fCTTCCCAAGGGATAGAACAAGGVigna radiata: GH3GH3.exp.fAAAGGCAAGGGTATGTACTTCGH3.exp.fCAGGCACGTGATGGTGAGGTGGATGGTAGTTGVigna radiata: CEP5CEP5.exp.fAGGGACACGTGATGGTAGGTTGVigna radiata: CEP5CEP5.exp.fCAGGACACCGTGATGGAATGCH3.exp.rCAGGCACGTGGTAGTGGCTGGAATGCH3.exp.rCAGGACACCGTGATGGTAGT		Chalcone.exp.r	AGCCTGACAAGTTGGTAATC
Vielensin.exp.rTTCGGGTTGGGAGAATCCGGTTVigna radiata: GA20xGA-2.exp.fCGTCAACCACCGCGTGTCCATTGGA-2.exp.rCCAACCGACATCGCCGTTGVigna radiata: GA20xGA-20.exp.fAGAAGTACTGCGATGGTATGGA-20.exp.rCTGTCCCCAACGTAAGGTTCVigna radiata: ABA 8'-hydrolaseABA 8'-hydrolase.exp.fCAAGAGAAAGGAGCAGAGAGTGGABA 8'-hydrolase.exp.rGTAGTATCCTGAGCTGCAAACVigna radiata: Annex D4Annexin.exp.fAGGCAGTTTACAAGCACTACAnnexin.exp.rATCAATTCTCAATGCTGCAATGVigna radiata: GSTPeroxidaseA2.exp.fGTAGCATGGATCAGTTTGPeroxidaseA2.exp.fGCAAGTTCCCATCAGCTGCAATGVigna radiata: SGT1SGT1.exp.fCAATCAGCTTCCGTGGATGGTTGVigna radiata: ThumatinThaumatin-exp.fCTCCCCTGGTTGATGGTTGVigna radiata: GH3GT1.exp.fCAATCAGCTTCCAGTGGCATGVigna radiata: CEP5CCB2.exp.fGTCCACGCACAGGGATGGATGGATGVigna radiata: CEP5CEP5.exp.fCAGGACCGTGTGTGTGGCGATGVigna radiata: CEP5CEP5.exp.fCAGGACCGCCCTCGCGTAGGATGVigna radiata: CEP5CEP5.exp.fCAGGACCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	Vigna radiata: PDF	Vr-defensin.exp.f	GAGGCAAAGACTTGCGAGAAC
Vigna radiata: GA2oxGA-2.exp.fCGTCAACCACGGTGTTCCATTGVigna radiata: GA2oxGA-2.exp.rCCAACCGACATCGCCGTTTGVigna radiata: GA2oxGA-20.exp.fAGAAGTACTGCCGATGGTATGGA-20.exp.rCTGTCCCCAACGTAAGGTTCVigna radiata: ABA 8'-hydrolaseABA 8'-hydrolase.exp.fCAAGGAAAAGGAGCAGAGAGTTGVigna radiata: Annex D4Annexin.exp.fAGGCCAGTTTACAAGCACTACAnnexin.exp.rATCAATTCTCAATGCTGCAATCVigna radiata: GSTPeroxidaseA2.exp.fGTTGCGATGGATCAGTGTTGVigna radiata: SGT1SGT1.exp.rCAATCAGCTACCACAAAGVigna radiata: SGT1SGT1.exp.rCAATCAGCTTCGTGGATGTGVigna radiata: CDXLOX.exp.fCTTCCAAGGGATGAGATTGVigna radiata: GH3GH3.exp.fCTTCCAAGGCACGTGTTGGVigna radiata: CEP5CEP5.exp.fAGGGCACGTGATGGATGGGATGGVigna radiata: CEP5CEP5.exp.fCAGGACCAGGGATGGATGGATGGVigna radiata: CEP5CEP5.exp.fCAGGACCCGGATGGATGGATGGGATTGVigna radiata: CEP5CEP5.exp.fCAGGACCCGGATGGATGGATGGATGGVigna radiata: CEP5CEP5.exp.fCAGGACCCGGATGGATGGATGGATGGCEP5.exp.fCAGGACCCGGATGGATGGATGGATGGATGGCEP5.exp.fCCCCACCCCCGCAATCGATGGAATGATCGCEP5.exp.fCAGGACCGGATGGATGGATGGATGGATGGATGGATGGATG	3	Vr-defensin.exp.r	TTCGGGTTGGGGAGAATCCGGTT
GA-2.exp.rCCAACCGACATCGCCGTTTGVigna radiata: GA20oxGA-2.exp.rCCAACCGACATCGCCGTTGGGA-2.exp.rCTGTCCCCAACGTACTGCCGATGGTATGGA-20.exp.rCTGTCCCCAACGTACGGAGATTGVigna radiata: ABA 8'-hydrolaseABA 8'-hydrolase.exp.fCAAGAGAAAGGAGCAGAGATTGABA 8'-hydrolase.exp.rGTAGTATCCTGAGCTGCAAACVigna radiata: Annex D4Annexin.exp.fAGGCAGTTTACAAGCACTACAnnexin.exp.rATCAATTCTCAATGCTGCATTCVigna radiata: GSTPeroxidaseA2.exp.fGTTGCGATGGATCAGTTTTGPeroxidaseA2.exp.rAAGCTACTTCAGCTGCAATGVigna radiata: SGT1SGT1.exp.fGCAAGTTCCCATCACACAAAGSDT1.exp.rCAATCAGCTTCGTGGATGTTGVigna radiata: LOXLOX.exp.fCTTCCCAGGAGTGAATCATTTGLOX.exp.rGTCCACGCACATCATCAAAGVigna radiata: GH3GH3.exp.fAAAGGCAAGGGTATGTACTTTCVigna radiata: CEP5CEP5.exp.fAGGAGCCGTGGTGATGGCATGVigna radiata: CEP5CEP5.exp.fAGGAGCACGTGAATCGVigna radiata: CEP5CEP5.exp.fCACGATCGTTCGTGGAATGCEP5.exp.fCACGATCGTTCGTGGAATGCEP5.exp.fCACGATCGTTGGGGAATGCEP5.exp.fCACGATCGTTGGGGAATGCEP5.exp.fCACGATCGTTGCGTGGGAATGCEP5.exp.fCACGATCGTTGCGTGGAATCC	Vigna radiata: GA20x	GA-2.exp.f	CGTCAACCACGGTGTTCCATTG
Vigna radiata: GA20oxGA-20.exp.fAGAAGTACTGCGATGGGATGGVigna radiata: ABA 8'-hydrolaseABA 8'-hydrolase.exp.fCAAGAGAAAGGAGAGAGAGAGAGAGAGAGAGAGAGAGAG		GA-2.exp.r	CCAACCGACATCGCCGTTTG
GA-20.exp.rCTGTCCCCAACGTAAGGTTCVigna radiata: ABA 8'-hydrolaseABA 8'-hydrolase.exp.fCAAGAGAAAGGAGCAGAGAGATTGABA 8'-hydrolase.exp.rGTAGTATCCTGAGCTGCAAACVigna radiata: Annex D4Annexin.exp.fAGGCAGTTTACAAGCACTACAnnexin.exp.rATCAATTCTCAATGCTGCATTCVigna radiata: GSTPeroxidaseA2.exp.fGTTGCGATGGATCAGCTGCAATGVigna radiata: SGT1SGT1.exp.fGCAGTTCCCATCACACACAAAGSDT1.exp.rCAATCAGCTTCGTGGATGGTGTGVigna radiata: ThumatinThaumatin-exp.fTCTCCCTGGTTGATGGTTCVigna radiata: LOXLOX.exp.fCGTCTTAAACACAGTGCATGVigna radiata: GH3GH3.exp.fAAGGCAAGGGTATGTACTTTCVigna radiata: CEP5CEP5.exp.fAGGAGCACGTGATGGGATGVigna radiata: CEP5CEP5.exp.fAGGAGCACGTGGTGGCACGTGVigna radiata: CEP5CEP5.exp.fAGGAGCACGTGGGAATGCAGACTCCCTCGCTCGCACAATGCAATCGCTTCGTGGGAATGVigna radiata: CEP5CEP5.exp.fAGGAGCACGTGATGGGAATGCASCEP5.exp.fAGGAGCACGTGATGGGAATGCASCEP5.exp.fAGGAGCACGTGATGGGAATGCASCEP5.exp.fAGGAGCACGTGATGGGAATGCASCEP5.exp.fAGGAGCACGTGATGGGAATGCASCEP5.exp.fAGGAGCACGTGATGGGAATGCASCEP5.exp.fCAGAGCACGTGATCGCTCCGTGCGAAATCC	Vigna radiata: GA200x	GA-20.exp.f	AGAAGTACTGCGATGGTATG
Vigna radiata: ABA 8'-hydrolaseABA 8'-hydrolase.exp.fCAAGAGAAAGGAGCAGAGATTGVigna radiata: Annex D4Annexin.exp.fAGGCAGTTACAAGCACTAC Annexin.exp.rATCAATTCTCAATGCTGCATTCVigna radiata: GSTPeroxidaseA2.exp.fGTTGCGATGGATCAGTTTTG PeroxidaseA2.exp.rAAGCTACTTCAGCTGCAATGVigna radiata: SGT1SGT1.exp.fGCAAGTTCCCATCACACAAAG SDT1.exp.rCAATCAGCTTCGTGGATGTTGVigna radiata: LOXLOX.exp.fCGTCTTAAACACAGTGCATGVigna radiata: GH3GH3.exp.fCTTCCACGCACACAAAGVigna radiata: CEP5CEPS.exp.fAAGGCACGTGATGGATGTGGAATG		GA-20.exp.r	CTGTCCCCAACGTAAGGTTC
ABA 8'-hydrolase.exp.r GTAGTATCCTGAGCTGCAAAC Vigna radiata: Annex D4 Annexin.exp.f AGGCAGTTTACAAGGCACTAC Annexin.exp.r ATCAATTCTCAATGCTGCATTC Vigna radiata: GST PeroxidaseA2.exp.f GTTGCGATGGATCAGTTTTG PeroxidaseA2.exp.r AAGCTACTTCAGCTGCAATG Vigna radiata: SGT1 SGT1.exp.f GCAAGTTCCCATCACACAAAG SDT1.exp.r CAATCAGCTTCGTGGATGTTG Vigna radiata: Thumatin Thaumatin-exp.f TCTCCCTGGTTGATGGTTTC Vigna radiata: LOX LOX.exp.f CTTCCAAGGGATGAATCATTTG Vigna radiata: GH3 GH3.exp.f AAAGGCAAGGGTATGTAGTTTG Vigna radiata: CEP5 CEP5.exp.f AGGAGCACGTGATGGGAATG	Vigna radiata: ABA 8'-hydrolase	ABA 8'-hvdrolase.exp.f	CAAGAGAAAGGAGCAGAGATTG
Vigna radiata: Annex D4Annexin.exp.fAGGCAGTTTACAAGCACTAC AGGCAGTTTACAAGCACTAC Annexin.exp.rVigna radiata: GSTPeroxidaseA2.exp.fGTTGCGATGGATCAGTTTG PeroxidaseA2.exp.rVigna radiata: SGT1SGT1.exp.fGCAAGTTCCCATCACACAAAG SDT1.exp.rVigna radiata: ThumatinThaumatin-exp.fTCTCCCTGGTTGATGGTTGVigna radiata: LOXLOX.exp.fCTTCCAAGGGATGAATG CTTCCAAGGGATGAATCATTTG LOX.exp.rVigna radiata: GH3GH3.exp.fGTCCACGCACGTGATGGGAATG CEPS.exp.fVigna radiata: CEP5CEPS.exp.fAGGAGCACGTGATGGGAATG CEPS.exp.f	3 ··· ································	ABA 8'-hvdrolase.exp.r	GTAGTATCCTGAGCTGCAAAC
Vigna radiata: GSTAnnexin.exp.rATCAATTCTCAATGCTGCATTCVigna radiata: GSTPeroxidaseA2.exp.fGTTGCGATGGATCAGTTTTGPeroxidaseA2.exp.rAAGCTACTTCAGCTGCAATGVigna radiata: SGT1SGT1.exp.fGCAAGTTCCCATCACACAAAGSDT1.exp.rCAATCAGCTTCGTGGATGTTGVigna radiata: ThumatinThaumatin-exp.fTCTCCCTGGTTGATGGTTTCThaumatin-exp.fCTTCCAAGGGATGAACACAGTGCATGVigna radiata: LOXLOX.exp.fCTTCCAAGGGATGAATCATTTGLOX.exp.rGTCCACGCACATCATCAAAGVigna radiata: GH3GH3.exp.fAAAGGCAAGGGTATGTACTTTCVigna radiata: CEP5CEP5.exp.fAGGAGCACGTGATGGGAATGCEPS axp.rCACGATCCCTTCGCTCGCAAATC	Vigna radiata: Annex D4	Annexin.exp.f	AGGCAGTTTACAAGCACTAC
Vigna radiata: GSTPeroxidaseA2.exp.fGTTGCGATGGATCAGTTTGVigna radiata: SGT1SGT1.exp.fGCAAGTTCCCATCACACAAAGSDT1.exp.rCAATCAGCTTCGTGGATGTTGVigna radiata: ThumatinThaumatin-exp.fThaumatin-exp.fTCTCCCTGGTTGATGGTTTCVigna radiata: LOXLOX.exp.fLOX.exp.rGTCCACGCACACACAAGVigna radiata: GH3GH3.exp.fAAGGCACGTGATGGTAGTTTGVigna radiata: CEP5CEP5.exp.fAAGGCACGTGATGGGAATGCEPS axp.rCACGATCCCTTCGTCGCCAAATC		Annexin.exp.r	ATCAATTCTCAATGCTGCATTC
PeroxidaseA2.exp.rAAGCTACTTCAGCTGCAATGVigna radiata: SGT1SGT1.exp.fGCAAGTTCCCATCACACAAAGSDT1.exp.rCAATCAGCTTCGTGGATGTTGVigna radiata: ThumatinThaumatin-exp.fTCTCCCTGGTTGATGGTTTCThaumatin-exp.rCGTCTTAAACACAGTGCATGVigna radiata: LOXLOX.exp.fCTTCCAAGGGATGAATCATTTGVigna radiata: GH3GH3.exp.fAAAGGCAAGGGTATGTACTTTCVigna radiata: CEP5CEP5.exp.fAGGAGCACGTGATGGGAATGCEP5.exp.fCEP5.exp.fCCP5.exp.f	Vigna radiata: GST	PeroxidaseA2 exp f	GTTGCGATGGATCAGTTTTG
Vigna radiata: SGT1 SGT1.exp.f GCAAGTTCCCATCACACAAAG SDT1.exp.r CAATCAGCTTCGTGGATGTTG Vigna radiata: Thumatin Thaumatin-exp.f TCTCCCTGGTTGATGGTTTC Thaumatin-exp.r CGTCTTAAACACAGTGCATG Vigna radiata: LOX LOX.exp.f CTTCCAAGGGATGAATCATTTG Vigna radiata: GH3 GH3.exp.f AAAGGCAAGGGTATGTACTTTC Vigna radiata: CEP5 CEP5.exp.f AGGAGCACGTGATGGGAATG		PeroxidaseA2 exp.r	AAGCTACTTCAGCTGCAATG
Vigna radiata: Thumatin SDT1.exp.r CAATCAGCTTCGTGGATGTTG Vigna radiata: Thumatin Thaumatin-exp.f TCTCCCTGGTTGATGGTTTC Thaumatin-exp.r CGTCTTAAACACAGTGCATG Vigna radiata: LOX LOX.exp.f CTTCCAAGGGATGAATCATTTG LOX.exp.r GTCCACGCACATCATCAAAG Vigna radiata: GH3 GH3.exp.r AAAGGCAAGGGTATGTACTTTC Vigna radiata: CEP5 CEP5.exp.f AGGAGCACGTGATGGGAATG	Vigna radiata: SGT1	SGT1.exp f	GCAAGTTCCCATCACACAAAG
Vigna radiata: Thumatin Thaumatin-exp.f TCTCCCTGGTTGATGGTTTC Vigna radiata: LOX LOX.exp.f CGTCTTAAACACAGTGCATG Vigna radiata: GH3 GH3.exp.f CTTCCAAGGGATGTACTTTC Vigna radiata: CEP5 CEP5.exp.f AGGAGCACGTGATGGGATG Vigna radiata: CEP5 CEP5.exp.f CGACGATGGGATGGAATG		SDT1 exp r	CAATCAGCTTCGTGGATGTTG
Vigna radiata: CEP5 CHIMANALAL CAPAR CGTCTTAAACACAGTGCATG Vigna radiata: CEP5 CDX.exp.f CTTCCAAGGGATGAATCATTTG Vigna radiata: CEP5 CEP5.exp.f AAGGCACGTGATGGGAATG	Vigna radiata: Thumatin	Thaumatin-exp f	TCTCCCTGGTTGATGGTTTC
Vigna radiata: LOX LOX.exp.f CTTCCAAGGGATGAATCATTTG LOX.exp.r GTCCACGCACATCATCAAAG Vigna radiata: GH3 GH3.exp.f AAAGGCAAGGGTATGTACTTTC GH3.exp.r AATGGGGCTGGTGTAGTTTG Vigna radiata: CEP5 CEP5.exp.f AGGAGCACGTGATGGGAATG CEPS axp.r CACGATCCGTCGCTCGCGCAAATC		Thaumatin-exp.r	CGTCTTAAACACAGTGCATG
Vigna radiata: CEP5 CEP5.exp.f CEP5.exp.f CEP5.exp.f CCACGACACGGTATGGAATG CEP5.exp.f CCACGACCGTGGTGGTGGGGAATG	Viona radiata: LOX	LOX exp f	CTTCCAAGGGATGAATCATTTG
Vigna radiata: GH3 GH3.exp.f AAAGGCAAGGGTATGTACTTTC Vigna radiata: CEP5 CEP5.exp.f AGGAGCACGTGATGGGAATG CEP5 axp.r CACGATCCCCTTCCCCCAAATC		LOX exp r	GTCCACGCACATCATCAAAG
Vigna radiata: CEP5 CEP5.exp.f AGGAGCACGGTGATGGGAATG CEP5.axp.r CAGGATCCGTTCGTCCGCAAATC	Viona radiata: GH3	GH3 exp f	AAAGGCAAGGGTATGTACTTTC
Vigna radiata: CEP5 CEP5.exp.f AGGAGCACGTGATGGGAATG CEP5 avp.r CACGATCCCTTCGTCGCAAATC	, ₁₈ nu ruumu. 0115	GH3 evp r	AATGGGGCTGGTGTAGTTTG
	Viana radiata: CEP5	CFP5 evn f	
	rignu ruuuuu. CEI 5	CEP5 exp r	CAGGATCCGTTGGTCGGAAATC

Table S4 Primers used in this study

Vigna radiata: PPO	PPO.exp.f	GATGGTGCATATCACCAAGTTG
	PPO.exp.r	GGAGCATCCCAGTTCCAAAATG
Vigna radiata: PIN1	PIN.exp.f	ACAGAGGCGCCAGAATGTTG
	PIN.exp.r	TGACGGTGACGTGGAGCTTTC

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