

Figure S1. GO analysis of DEGs in the *upf* mutants. (a–c) Venn diagram showing the DEGs in *upf1*, *upf3*, and *upf1 upf3* plants at 16 °C (a), 23 °C (b), and 27 °C (c). Top 20 GO terms among upregulated (d) and downregulated (e) genes in *upf1 upf3* at 16, 23 and 27 °C. Y-axis represents GO terms; the primary X-axis represents log_2 enrichment, whereas the secondary X-axis shows the negative log of *p* values. GO terms related to defense are shown in red, whereas GO terms related to growth/development are shown in blue.

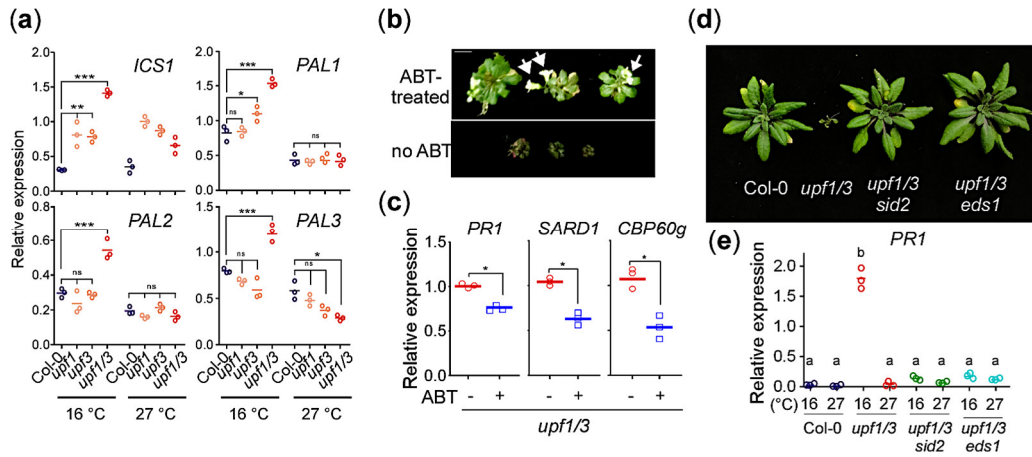


Figure S2. A strong immune response underlies the phenotype of *upf1 upf3* plants 16 °C. **(a)** mRNA levels of *ICS1* and *PAL1-3* in the *upf* mutants at different temperatures. **(b)** Phenotypic rescue of *upf1 upf3* grown at 16 °C by ABT treatment. Note that normal flowers (arrows) formed in ABT-treated *upf1 upf3* plants. Scale bar = 1 cm. **(c)** Decrease in *PR1*, *SARD1*, and *CBP60g* transcript levels in ABT-treated *upf1 upf3* plants. **(d)** Rescue of the growth arrest phenotype of *upf1/3* mutants by the introduction of *sid2* and *eds1* mutation at 16 °C. **(e)** Increase of *PR1* mRNA levels in *upf1/3* mutants and decrease of *PR1* mRNA levels in *upf1/3 sid2* and *upf1/3 eds1* mutants at 16 °C. Letters indicate significant difference from one-way ANOVA followed by Tukey's range tests, whereas the asterisk signs represents the p-value derived from Student's t-test i.e. ($p < 0.05$): *; $p < 0.01$; **; $p \leq 0.001$; ns: not significant.

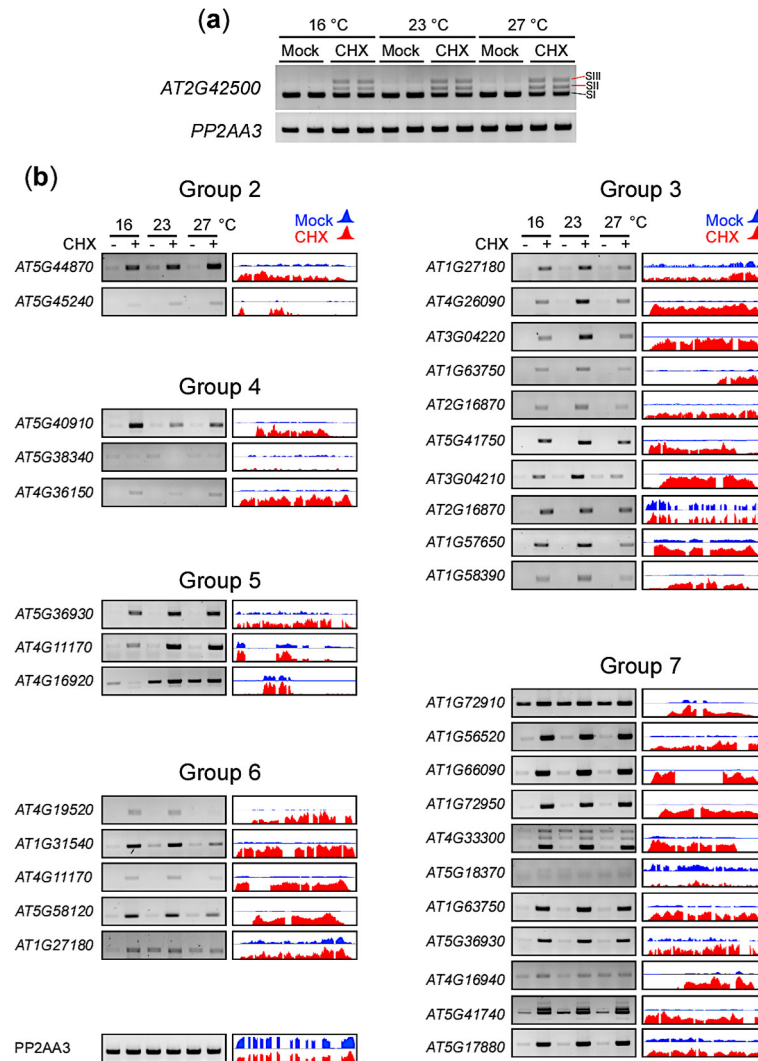


Figure S3. Temperature-dependent regulation of NLR genes in CHX-induced NMD-inhibited WT seedlings. **(a)** Gel picture showing the RT-PCR amplification of *AT2G42500*, a known NMD target, in WT plants under mock- and CHX-treatment conditions at different temperatures. **(b)** The expression levels of 34 NLR genes belonged to groups 2–7 determined by RT-PCR (left), whereas the read coverage graphs from the public transcriptome data (GSE41432) representing the expression of these NLR genes upon CHX-treatment (right). Classification of these NLR genes were based on their expression patterns (Figure 2b). *PP2AA3* was used as a loading control.

Table 1. List and Fold-Change of NLR Genes, Upregulated in Upf Mutants Compared to WT Plants, at 16 °C.

Temperature	16 °C		27 °C	
	Gene IDs	Col-0	<i>upf1/3</i>	Col-0
<i>AT5G58120</i>	2.9	5.3	0.9	2.3
<i>AT1G58390</i>	0.18	1.2	0.1	0.8
<i>AT4G26090</i>	3.7	6.3	1.7	2.1
<i>AT4G16940</i>	0.26	1.5	0.3	0.45
<i>AT5G04720</i>	13.8	24.9	4.3	7.4
<i>AT5G46520</i>	1.3	3.4	0.45	0.4
<i>AT1G66090</i>	1.9	5.8	1.1	1.3
<i>AT1G31540</i>	7.5	18.6	3.4	4.4
<i>AT4G33300</i>	18.9	40.3	12.4	15.8
<i>AT5G46270</i>	4.8	9.7	2.2	3.61
<i>AT3G44400</i>	2.8	5.8	1.1	1.7
<i>AT1G72940</i>	5.04	15.2	3.2	4.7
<i>AT5G45240</i>	0.6	1.4	0.3	0.47
<i>AT4G08450</i>	0.2	1.1	0.3	0.4
<i>AT3G04210</i>	7.1	39.2	3.4	6.3
<i>AT5G41740</i>	2.06	13.3	3.8	5.4
<i>AT1G56520</i>	4.2	8.19	1.2	1.9
<i>AT4G11170</i>	0.39	1.8	0.17	0.201
<i>AT4G36150</i>	2.8	5.6	1.2	1.1
<i>AT5G44870</i>	6.4	11.6	2.7	23.2
<i>AT5G40910</i>	14	30.3	9	14
<i>AT5G66900</i>	11.6	22.1	8.4	11.2
<i>AT5G17880</i>	4.9	11.3	1.1	1.8
<i>AT1G33560</i>	3.7	11.6	5.9	7.4
<i>AT3G04220</i>	0.3	1.2	0.2	0.35
<i>AT4G19520</i>	4.6	8.9	2.1	3
<i>AT2G16870</i>	0.8	2.3	1.1	1.6
<i>AT5G18370</i>	1.2	3.7	0.9	1.5
<i>AT5G36930</i>	6.1	12.4	4	3.5
<i>AT1G27180</i>	1.4	3.2	1	1.4
<i>AT3G46710</i>	2.9	5.2	1.2	1.8
<i>AT5G41550</i>	0.18	1.1	0.28	0.386
<i>AT1G72950</i>	0.7	2.5	0.3	0.76
<i>AT5G41750</i>	1.4	5.6	2.3	3.7
<i>AT5G38340</i>	1.7	3.8	0.985	1.4
<i>AT1G63750</i>	3.8	6.9	2.1	3.6
<i>AT1G57650</i>	0.1	1.3	0	0.3
<i>AT4G16920</i>	0.9	3.5	0.3	0.56

Table S2. List of Public Transcriptome Datasets That Were Used in This Study.

Accession No	Sample	Treatment	Reference
GSE51720	Col-0	flg22	[55]
GSE146189	Col-0	flg22	[56]
GSE99936	Col-0	flg22	[57]
SRP075162	Col-0	<i>Pst DC300</i>	-
GSE125378	Col-0	SA	-

SRP031882	Col-0	SA	[58]
GSE87851	Col-0, <i>upf1</i> , <i>upf3</i> , <i>upf1/3</i>	-	[26]
GSE41432	Col-0	CHX	[6]

Table S3. List of Primers Used in This Study.

Gene	Orientation	Sequence (5' to 3')
<i>ADR1-LIKE2</i>	Sense	GAATCGTTGCGTGAGGCGTT
	Antisense	AGCACCATCGGTTGTCACCA
<i>AT1G72910</i>	Sense	GGCCAGAGGATTTTCGTCGGA
	Antisense	TCCACGCCGTAGAAGATGGG
<i>AT1G72940</i>	Sense	CGCCGTCGTTGTTGTCTCTG
	Antisense	GCGACATCTCCGATCTGCTT
<i>AT5G41550</i>	Sense	TCTGCGACTTAGCACGGCTT
	Antisense	ATCGAGGTCAGGGTCATCGC
<i>CBP60g</i>	Sense	AATAACGAGGAGGATGAGAACG
	Antisense	TCAGACACGGTAAGAAACATCG
<i>EDS1</i>	Sense	CTGAGTTAGCCGGTGT
	Antisense	TTTCATGTACGGCCCTG
<i>ICS1</i>	Sense	AGTCCC GCATACATT
	Antisense	GATAACATGCCGGACTTCCT
<i>ICS2</i>	Sense	TGCAGTGTGAAGGACAAGAC
	Antisense	GAAGAGTCTCTCAGGCGTGT
<i>ICS2</i>	Sense	TGCAGTGTGAAGGACAAGAC
	Antisense	GAAGAGTCTCTCAGGCGTGT
<i>PAD4</i>	Sense	TTAGCCGTTGAAGCTCT
	Antisense	CTTCAAGCTCCACGGTGTAAG
<i>PAL1</i>	Sense	TTGGAGCTTTCGAGGAGGAG
	Antisense	TTCCGTTATCGTAGGCTGCT
<i>PAL2</i>	Sense	GAGCTTAAGGCTGTGCTTCC
	Antisense	TTCGTTCCAAGCTCTTCCCT
<i>PAL3</i>	Sense	GGACAGAGTACGAGAACGGT
	Antisense	CCGAACATCCTCTCCGGTTA
<i>PBS3</i>	Sense	CGTACCGATCGTGCATATGAAG
	Antisense	CTTCACATGCTTGGTTATAACTGC
<i>PP2AA3</i>	Sense	GCGGTTGTGGAGAACATGATACG
	Antisense	GAACCAAACACAATTCGTTGCTG
<i>PR1</i>	Sense	GCTCTTGTAGGTGCTCTTGTCTTCC
	Antisense	AGTCTGCAGTTGCCTCTTAGTTGTTT
<i>RING1</i>	Sense	TGAAGAAGACGAGTCGCTGA
	Antisense	GGCACGACATAAAGGACAG
<i>SAND family</i>	Sense	TTGATCCACTTGCAGACAAGGC
	Antisense	TACCCTTTGGCACACCTGATTG
<i>SARD1</i>	Sense	CCTCAACCAGCCCTACGTTA
	Antisense	TAGTGGCTCGCAGCATATTG
<i>WRKY15</i>	Sense	AAAGGATCTCCACATCCAAGAG
	Antisense	GCGGCGGAGAGAGAATGAT
<i>WRKY18</i>	Sense	CATACGAAGGGACGCATAAC
	Antisense	CCTTTCGTTTTCTCCAACG
<i>WRKY25</i>	Sense	ACCTCTCCGATTTCACA
	Antisense	GTTCCATTAAAGCCTT
<i>WRKY33</i>	Sense	TACGAAGGGAAACACAACCA

	Antisense	AAGGCCCGGTATTAGTGTTG
WRKY38	Sense	CACTTACTTTGGCCACCACAC
	Antisense	GGCTTTCCTTCTCCTGATCCT
WRKY46	Sense	GACATGAAACCGACCAAGTCC
	Antisense	CAGTTTCGGAATTCTCAACAGCA
WRKY51	Sense	ACAAGCATCGTTTCGTCGGA
	Antisense	CAACTCGATGACCCGCTCC
WRKY54	Sense	GCACTGCTCAGAACCATGTCAA
	Antisense	CAAGTCCTCACCTGTGGAAGA
WRKY60	Sense	ACACCAATCCGTTTCGACCTT
	Antisense	CGACTCTGCAACTCCTCCAT
WRKY70	Sense	CATGGATTCCGAAGATCACA
	Antisense	CTGGCCACACCAATGACAA

Primers for RT-PCR.

Gene	Orientation	Sequence (5' to 3')
AT1G27180	Sense	AGAGGACTCGGTGGCTTTTG
	Antisense	CACAGAAGTTGGTTCGCGTG
AT1G31540	Sense	AGGATCGCTGTGGTCGTTTT
	Antisense	GCGATGTGATCTTCGATGCC
AT1G57650	Sense	TGGTAAAGAAGTGCCTGCGT
	Antisense	GACAAGACACCAACCCTCGT
AT1G58390	Sense	AATGAGAGTGTGCGGGTACG
	Antisense	CTGCTGGTCTTCCCACGAT
AT1G63750	Sense	TCGTAGACAGGAGCCTTGGGA
	Antisense	AAGGTGTTGGGTTCCTTCCC
AT1G66090	Sense	AACCCTTGCCCCTACTCTCA
	Antisense	CTTGACGTGTACTCCGGTT
AT1G72910	Sense	ATGACTCGAAGCTGGTGGAC
	Antisense	GAGTGGCGACCCTGAGAAAT
AT1G72940	Sense	CAGGGTCGTCACCTATCGCA
	Antisense	AGGCGAATTGTCGGAAGAGT
AT1G72950	Sense	CGCCATTGAAGGGTCGAGAT
	Antisense	TGCCCTCTTGCCCAAATC
AT2G16870	Sense	TTGGGTCTACGTGTGGTTGG
	Antisense	AATGGCTTGTCTGCCACTT
AT3G04210	Sense	CCCGGTCGTAAACACCAAGT
	Antisense	CCCAAATCTCCGGTCTGCT
AT3G04220	Sense	GGGCGATTAGAGGGTCCAAG
	Antisense	CCCAGGAGGACCCCATATT
AT4G11170	Sense	TCAGAGGGGAAGATGTCCGT
	Antisense	CCCGCCTCCAGTTATGTTGT
AT4G16920	Sense	ACGAGGCTCCGTGTACTACT
	Antisense	ATGTCATCCCCATCCGCTTC
AT4G16940	Sense	CGTGGTTGCAAGTCGTTGAG
	Antisense	AGTTCTCGGCAGCTCTATC
AT4G33300	Sense	GGTTGACATGAGCCTCGACA
	Antisense	TGGACTTCATGGTCCCGTTG
AT4G36150	Sense	AACGGTTTCGTCAGCCATCT
	Antisense	AACGTGTAACCAAAAGCGCC
AT5G04720	Sense	CCAGGCTCAGTTGCGTATGT

	Antisense	TCCCTGAACCACTCATCCCA
<i>AT5G17880</i>	Sense	CAGATAGAAAGGGGCGGCAT
	Antisense	ATCGCACCTCATTCAACGGT
<i>AT5G18370</i>	Sense	GCAGTTCAGGAGAGGCTCAG
	Antisense	CCTTAACCGTGGTAGTGCGT
<i>AT5G36930</i>	Sense	GGACTACGCATCATCGGCTT
	Antisense	GTACTGGCAGGGCAGTCTTT
<i>AT5G38340</i>	Sense	GAAGTGCCGTCGAGGATCAA
	Antisense	AGCACGGAACCTCCAGTTTT
<i>AT5G40910</i>	Sense	AGATTCGCGATGTCTTGCCA
	Antisense	CTCTCACAACCGGTAAGCGT
<i>AT5G41550</i>	Sense	TCTGCGACTTAGCACGGCTT
	Antisense	ATCGAGGTCAGGGTCATCGC
<i>AT5G41740</i>	Sense	GCTGAGGGTGACAGTAGCAG
	Antisense	CCCAAAGAATTCGCGACGAC
<i>AT5G41750</i>	Sense	TGTGTCGTGGGTGCATCTTT
	Antisense	AGCCCCCTTACCTACCGAAA
<i>AT5G44870</i>	Sense	TGGTGGTCGAGTTGAGATGC
	Antisense	ACCTTCGCCTTCCTTATGGC
<i>AT5G45240</i>	Sense	AGAAACCAAGCAACCCGACA
	Antisense	ATTGTTGCCTCACGTCCGAT
<i>AT5G46520</i>	Sense	CCGATGCTGTCTCCCACTTT
	Antisense	TCGCGGCAACCTTTCATAGT
<i>AT5G58120</i>	Sense	TAGGTCTCCGTGTCATGGGT
	Antisense	ATTCTCCGTTTCGTGGGCTC
<i>EDS1-PTC+</i>	Sense	ACTTTCGACCAAATGTGAATG
	Antisense	GTTGACTCTTTGGCTATTGGAGAC
<i>PP2AA3</i>	Sense	AGCCATTGTAGAACTTGCTG
	Antisense	CTATATGCTGCATTGCCAT
<i>SARD1-PTC+</i>	Sense	GGAAGATCGGAACCGTCCATTTG
	Antisense	ATCCAAAGAAGTCCGAAGTCTG
<i>WRKY38-PTC+</i>	Sense	AAATTCTGATCTCCCTATCCGTTT
	Antisense	ATTGGATGGTTGAGCCGCTCTTC

Primers for 35S::NLRs Cloning.

Gene	Orientation	Sequence (5' to 3')
<i>ADR1-LIKE2</i>	Sense	gacgataaaagatcttctaga ATGGCAGATATAATCGGCGGGCG
	Antisense	catattaatgtcgacggtacc CTAATCGTCGAGCCAATCCCTG
<i>AT1G72910</i>	Sense	gacgataaaagatcttctaga ATGTCTTCTCATACTGCAACTA
	Antisense	catattaatgtcgacggtacc TTAAACTAAATCTGTCACTTTC
<i>AT1G72940</i>	Sense	gacgataaaagatcttctaga ATGACTTCTCCTACTGCGACTAAG
	Antisense	catattaatgtcgacggtacc CTAACCAGATCTACCACTTAGA

Primers for 35S::amiR-NLRs Cloning.

Gene	Primer	Sequence (5' to 3')
<i>ADR1-LIKE2</i>	I miR-s	gaTAAATCCCCATATATGGGCTCtctctctttgtattcc
	II miR-a	gaGAGCCCATATATGGGGATTTAtcaaagagaatcaatga
	III miR*s	gaGAACCCATATATGCGGATTTTtcacaggtcgtgatatg
	IV miR*a	gaAAAATCCGCATATATGGGTTTctacatatattct
	I miR-s	gaTAACTCTTCGTGTAGATGCGTtctctctttgtattcc

<i>AT1G72910</i>	II miR-a	gaACGCATCTACACGAAGAGTTAtcaaagagaatcaatga
and	III miR*s	gaACACATCTACACGTAGAGTTTtcacaggtcgtgatatg
<i>AT1G72940</i>	IV miR*a	gaAAACTCTACGTGTAGATGTGTtctacatatatattcct

Uppercase letters = Coding sequences, lowercase letters = infusion/restriction enzyme sites.