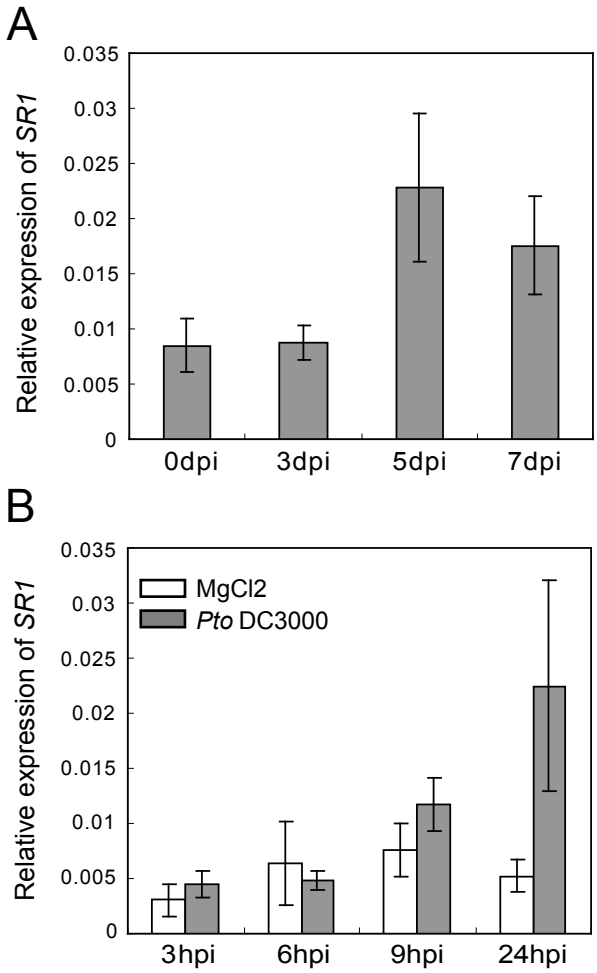
Figure S1 Nie *et al*



Supplemental Figure 1. *SR1* was induced by powdery mildew and *Pto* DC3000

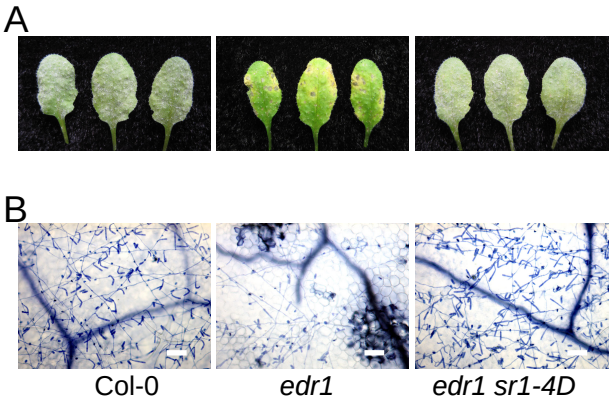
Four-week-old plants were inoculated with *G. cichoracearum* or *Pto* DC3000. The relative expression of *SR1* was examined at various time points.

A. *G. cichoracearum*

B. *Pto* DC3000

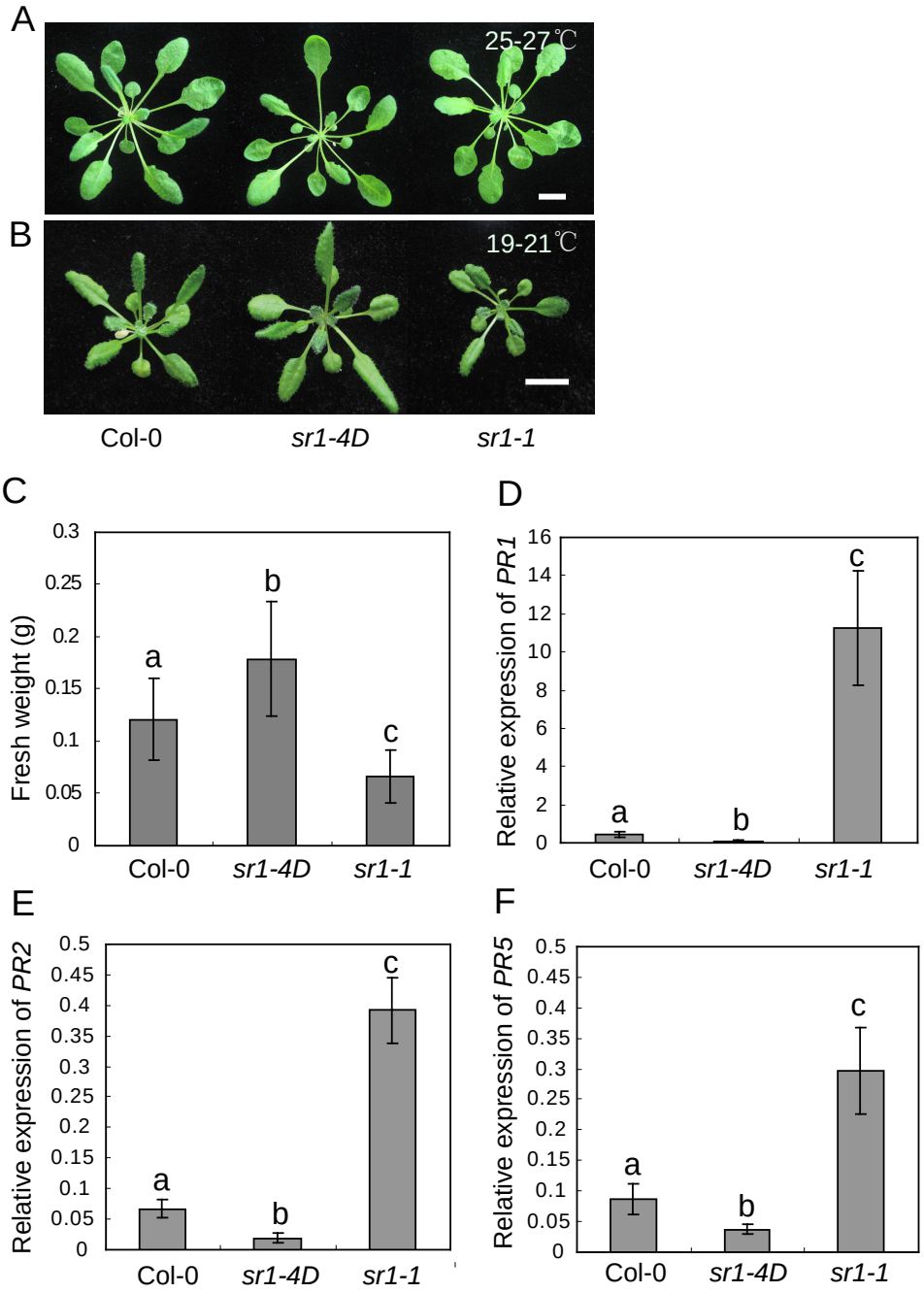
The bars represent the mean and standard deviation of values from three independent experiments.

Figure S2 Nie *et al*



Supplemental Figure 2. *sr1-4D* suppressed *edr1*-mediated powdery mildew resistance
Four-week-old plants were infected with *G. cichoracearum*.
A. The representative leaves were removed and photographed at 8 dpi.
B. Infected leaves were stained with trypan blue to visualize fungal growth and plant cell death. Bar = 100 μm.

Figure S3 Nie *et al*



Supplemental Figure 3. Temperature dependent growth phenotype of *sr1-4D*

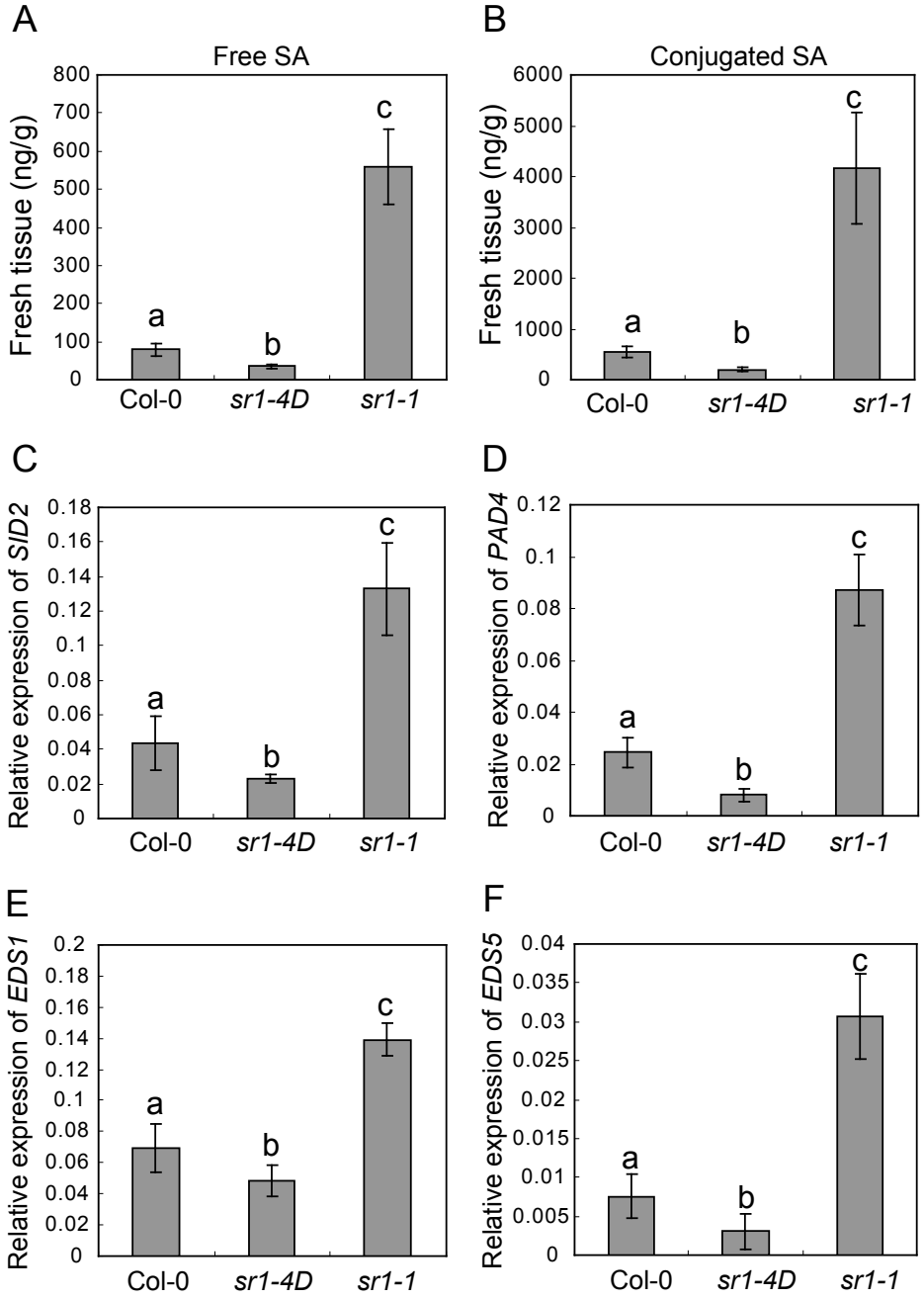
A-B. Wild type, *sr1-4D* and *sr1-1* plants were grown at 25-27℃ (A) or 19-21℃ (B) for 4-5 weeks. Bar=1cm

C. Fresh weight of five-week-old plants grown at 19-21℃. The bars represent mean and standard deviation of samples (n=12).

D-F. Relative expression of defense related genes *PR1* (D), *PR2* (E) and *PR5* (F) in 4-5 week old plants grown at 19-21℃. The bars represent the mean and standard deviation of values from three independent experiments.

In C-F, low-case letters indicate statistical significance ($p<0.01$, t-test).

Figure S4 Nie *et al*



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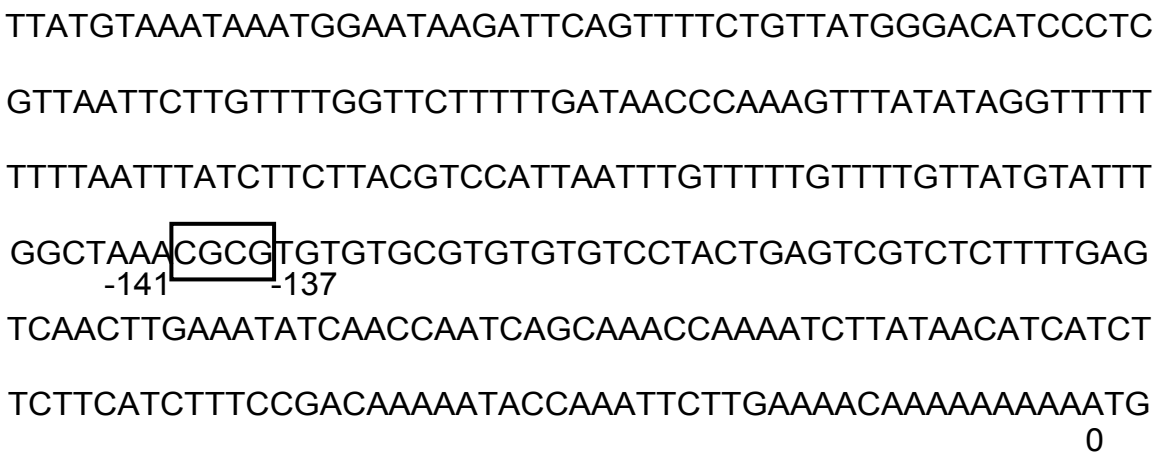
A-B. Accumulation of free (A) and Conjugated (B) SA in five-week-old plants grown at 19-21℃.

C-F. Relative expression of *SID2* (C), *PAD4* (D), *EDS1* (E) and *EDS5* (F) in 4-5 week old plants grown at 19-21 ℃.

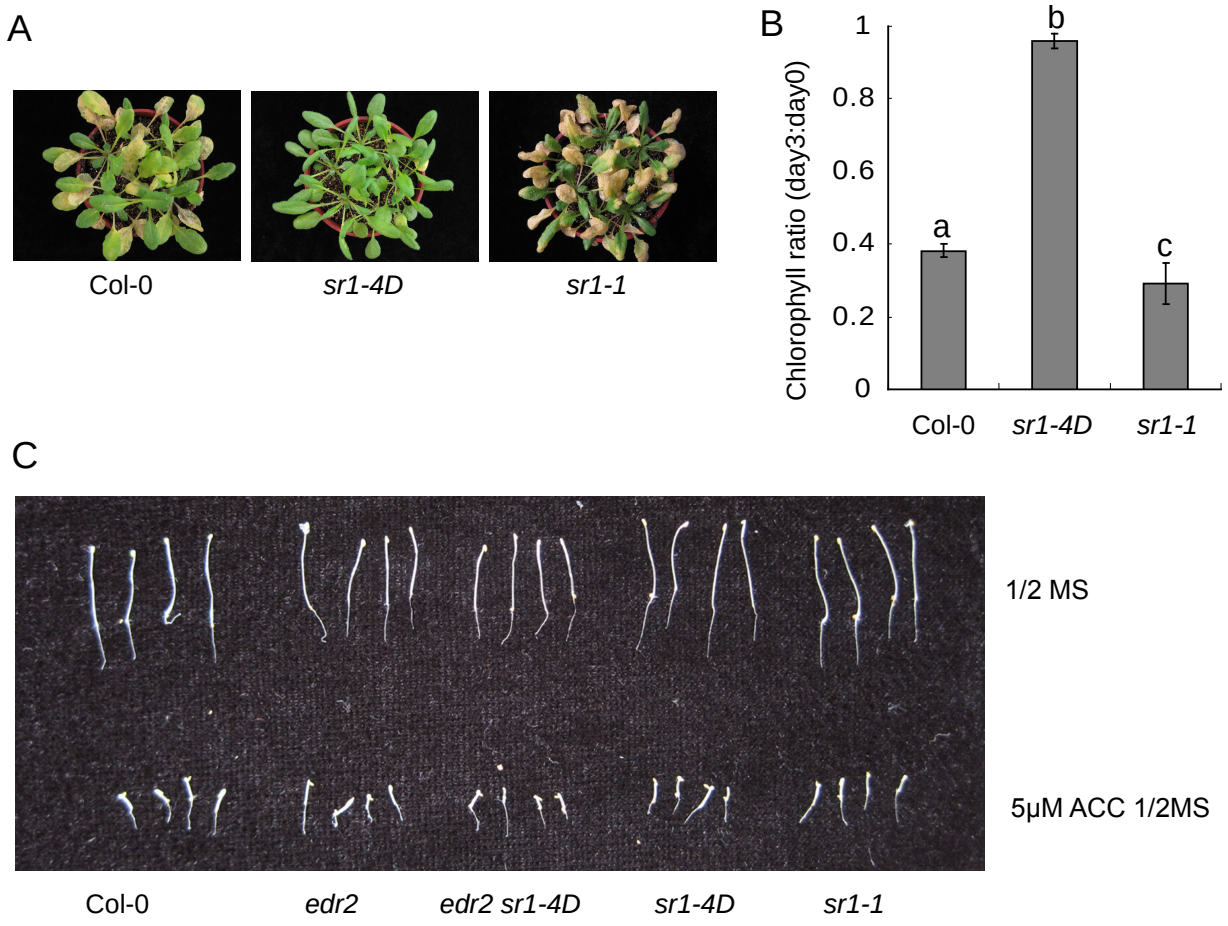
The bars represent mean and standard deviation of three independent biological samples. Low-case letters indicate statistical significance ($p<0.01$, t-test).

Figure S5 Nie *et al*



Supplemental Figure 5. The *NDR1* promoter sequence contains a CGCG box

Figure S6 Nie *et al*



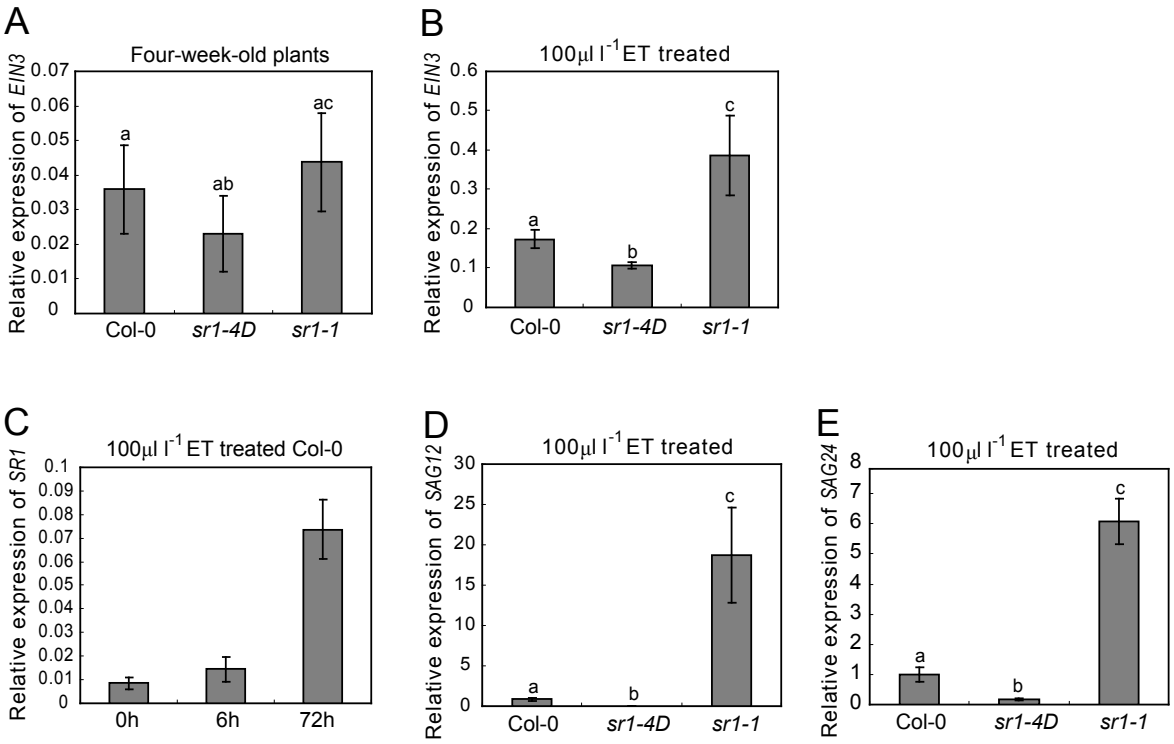
Supplemental Figure 6. SR1 is involved in ethylene induced senescence, but is not involved in ACC induced triple response.

A. Four-week-old plants were treated with 100 μl l^{-1} ethylene for 3 days.

B. Chlorophyll ratio of day 3 over day 0, for the fourth to the sixth leaves treated with 100 μl l^{-1} ethylene. The bars represent mean and standard deviation of values from samples. Statistical differences are indicated with lower-case letters (n=4, P<0.01, one-way *ANOVA*). The experiment was repeated 3 times with similar results.

C. The wild type, *edr2*, *edr2 sr1-4D*, *sr1-4D* and *sr1-1* seeds were plated on 1/2 MS medium with 5μM ACC for 4 days in dark.

Figure S7 Nie *et al*



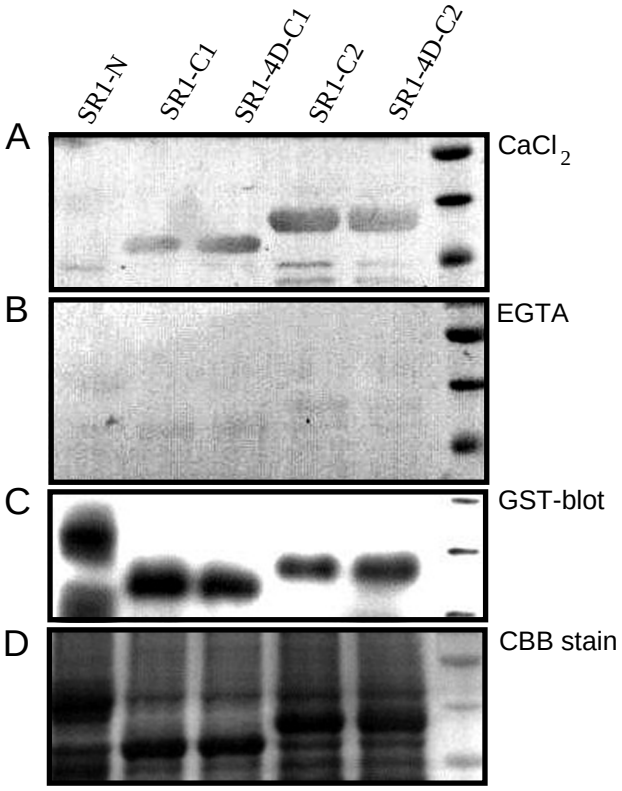
Supplemental Figure 7. Relative expression of several defense and senescence related genes.

A-B. Relative expression of *EIN3* in four-week-old plants. (A) Untreated plants (B) Plants treated with 100μl l^{-1} ethylene for 3 days. The bars represent mean and standard deviation from three biological replicates. Low-case letters indicate statistical significance ($p<0.01$, t-test).

C. Relative expression of *SR1* in wild type before and after ethylene treatment (at 0h 6h and 72h).

D-E. Relative expression of *SAG12* (D) and *SAG24* (E) in four-week-old plants treated with 100μl l^{-1} ethylene for 3 days. The bars represent mean and standard deviation from three biological replicates. Low-case letters indicate statistical significance ($p<0.01$, t-test).

Figure S8 Nie *et al*



Supplemental Figure 8. Calcium is needed for SR1-4D binding to the calmodulin *in vitro*. (An animal version of calmodulin was used in the experiments)

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SR1-C1-GST: Truncated SR1 protein (801aa-900aa)
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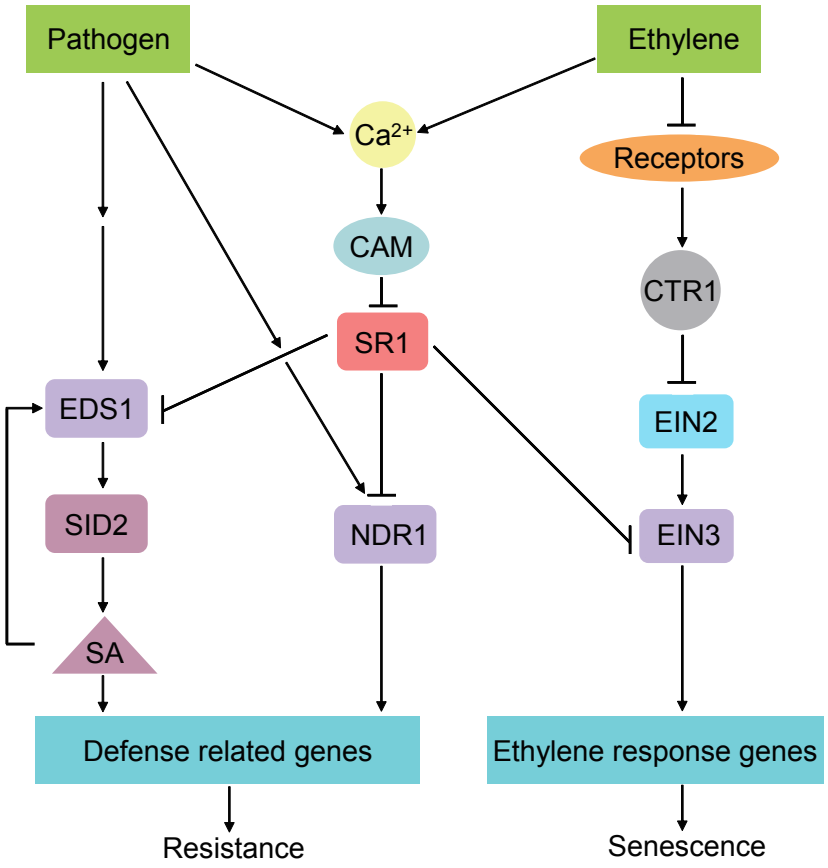
Figure S9 Nie *et al*



Supplemental Figure 9. A model illustrating the role of SR1 in defense responses and senescence SR1 negatively regulates defense responses and senescence by repressing the expression of *EDS1*, *NDR1* and *EIN3*. The SR1 protein functions at the critical point where plant immunity and ethylene signaling are fine-tuned to reach a well-balanced defense against pathogens.

Table 1 Primers used in this study.

Primer name	**Sequence(5’ to 3’)**	**Used for**
Salk_01152 LP	TGAAAACCTGATGAATCCGAG	*sr1-1*
Salk_01152 RP	GGTTGTGAAGTGGTGGTAAGC	*sr1-1*
Caps-F	AGTGATGATTCCGTGCAAGGCG	*sr1-4D*
Caps-R	GCACCATTGCCAGTTAAAAACCGTT	*sr1-4D*
SR1-C-F	GGATCCTCCAAATAGATAAATAGGGTTC	Complementation
SR1-C-R	GTCGACCAGTAAGCATCAATAACATTTCAGG	Complementation
NDR1-Gelshift F	ATTTGGCTAAACGCGTGTGTGCGTGTGTGT	EMSA
NDR1-Gelshift R	ACACACACGCACACACGCGTTTAGCCAAAT	EMSA
NDR1-Gelshift mF	ATTTGGCTAAACGATTGTGTGCGTGTGTGT	EMSA
NDR1-Gelshift mR	ACACACACGCACACAATCGTTTAGCCAAAT	EMSA
SR1-Gex F	CGCGGATCCATGGCGGAAGCAAGACGATT	EMSA
SR1n-Gex R	CCGCTCGAGCCGGTTAAAAGAAGTAGAAACTC	EMSA
SR1-RT-F	ATGGCGGAAGCAAGACGATTCAG	Real time PCR
SR1-RT-R	ATCAAACATAAAAACAGACCCACTTG	Real time PCR
NDR1-RT F	CTTTTCTTATGGCTTAGTCTCCGTG	Real time PCR
NDR1-RT R	ATCTTGGTCGTGTTGATGGTGG	Real time PCR
Actin8-RT-F	CGAGGCTCCTCTTAACCCAAA	Real time PCR
Actin8-RT-R	GGCACAGTGTGAGACACACCA	Real time PCR
PR1-RT-F	AAAGCTCAAGATAGCCCACA	Real time PCR
PR1-RT-R	AGCCTTCTCGCTAACCCACA	Real time PCR
PR2-RT-F	GAATCAAGGAGCTTAGCCTCACC	Real time PCR
PR2-RT-R	GTAGAGCCGCATTCGCTGGAT	Real time PCR
PR5-RT-F	GCACAGAGACACACACAAAA	Real time PCR
PR5-RT-R	TGTTCCTTAGAGTGAAGTCTG	Real time PCR
SID2-RT-F	CGCAAGAAGTATGAGTCATGTTCG	Real time PCR
SID2-RT-R	AACCTGTAACCGAACGACGC	Real time PCR
PAD4-RT-F	CGGCTTATCCTCCGATGAACCT	Real time PCR
PAD4-RT-R	CCAAAGGTGATACAAAAGACGC	Real time PCR
EDS1-RT-F	GTCTACGCTCAATGACCTTGGAGTG	Real time PCR
EDS1-RT-R	CATTTTTATGGGCTTGACACTTTGG	Real time PCR
EDS5-RT-F	GGAACAGATGAAAGAGATAGTGAAG	Real time PCR
EDS5-RT-R	GATGTAGCCACGGAGAGGAA	Real time PCR
EIN3-RT-F	GACAGAACCGTTTTCACCTGCGAGA	Real time PCR
EIN3-RT-R	CTGAGGAAATCCAACTACAGGCTTA	Real time PCR
SAG12-RT-F	CTGGTTTCAAAGGTGTCTCGG	Real time PCR
SAG12-RT-R	CTGAAAACGCCCAACAACATC	Real time PCR
SAG24-RT-F	AATCATGGAGTTCATGCTCAGG	Real time PCR
SAG24-RT-R	CAGGCACAATCCTCTTCATCG	Real time PCR
NDR1 ChIP-F	TTGGTTCTTTTTGATAACCCAAAGT	ChIP
NDR1 ChIP-R	TTTGGTTTGCTGATTGGTTGATATT	ChIP
EIN3-ChIP-F	TAGCACAACAATAAATAAAACTCCG	ChIP
EIN3-ChIP-R	TTACACATAAAATTTAAGACATCAT	ChIP

EDS1-ChIP-F	TGGTTATGCAATTTGGTTTAGCCAA	ChIP
EDS1-ChIP-R	ACCGAATTAACTAACTACACCTTCTT	ChIP
ACTIN2-ChIP-F	GATCCTAGTCTTTTAGTGTGCATTC	ChIP
ACTIN2-ChIP-R	ATTAAATGATTGATCGGTTTTCGTG	ChIP
SR1-AttB1	ACAAGTTTGTACAAAAAAGCAGGCTTCGAAGGAGATA GAACCATGGCGGAAGCAAGACGATTCAGCC	ChIP
SR1-AttB2	ACCACTTTGTACAAGAAAGCTGGGTCACTGGTC CACAAAGATGAGGACATAGGCAACATCAA	ChIP
SRcam-2401 F	CGCGGATCCGCTCGGATTCATCAGGTTTTCAGGGC	CAM binding
SRcam-2700 R	ACGCGTCGACCCAAATTATCTTTCTGTAGTTTTTCCTA	CAM binding
SRcam-2880 R	ACGCGTCGACTGCAAGAGCTTTTTGTAGCCTATCCTCT	CAM binding

Supplemental Figures

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SR1-C1-GST: Truncated SR1 protein (801-900aa)

SR1-C2-GST: Truncated SR1 protein (801-930aa)

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