

Supplementary Material

Supplementary Figures and Tables

Supplementary Figures

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1      ATGGCGCTGGAATTGGTGGGTGGGGCTGTTTGGGGGCTGTCGTGGGGAGCTATTCAAAGCGATCTTGAATCTGGGTGAAAGGGCCATCAGTTTCAATCTGTTCTTAAGGATAICCGT
1      M A L E L V G G A V L G A V V G E L F K A I L N L G E R A I S E N P V L K D I R
121    TCCAAGCTTAATGCTATAATGCCTTTGGTGAAGCAAAATCGATGAGCTTAATGATTATCTCGATTACCCAAAAGAAAGACAGAGAAATGAGGGGCTGATGGATGAAGGAAGCAGTTG
41     S K L N A I M P L V K Q I D E L N D Y L D Y P K E E T E K L R G L M D E G K Q L
241    CTICTCCAGTCCGGCGATGTGAAATTGGGGGATCTTAATTATTTGAAGAGACCATCTTACACCCAAAAGCTTCGGGAATGGGATACTGCACCTCGAAGCTTCATGGATGTTTGAIGTTG
81     L L Q C G D V K L G D L N Y L K R P S Y T Q K L R E L D T A L R S F M D V L M L
361    CAGATGGCTAGAGATCAGAAGAACAATGAAGATGATGAACCAATGATGGAGATCATTGTAGACTTGATAATAGAGTGGTTCGAGTAAACCTATGGATTGTTGTTCACCATGT
121    Q M A R D A Q K K N M K M M N Q M M E I I C R L D N R G G S S K P M D L F V P P C
481    CTGGTTCCTCAACTCGAGAAGAACCCTTGGGTGGAGAAGCCAGTTAAGGAGTTGAAGGTGAACTTCTCAAAAATGGGTTCAAAATGTTGGTGGTGACAGCTCCTGGTGGCTGCGGA
161    L V P Q L R E E T V G L E K P V K E L K V K L L K N G V Q M L V V T A P G G C G
601    AAAACCACTGGCCCTAAATTTTCCACGACAAAGAGTCAAAGATATATCCAGGAGAAGATCTTGTCCAGTTTCAAGAAAACAGATTTGAAGCTTATATGAAAGATAATAAT
201    K T T L A L K I F C H D K E V K D I F Q E K I F V P V S R K P D L K L I L K D I I
721    GAAAGCCTTAGAGCAATCAATTGCCTGATTGCAAAAGTGAACCTGCATCTCTGCTATTAGAAATTCGGTGAAGCAGACAAAGTGAATCGTCTGTTTATTGTTGATGATGAT
241    E S L R G I Q L P D L Q S D E R A F C Y L E L W L K Q I S V N R P V L I V L D D
841    GTGTGGAGTGGGCAAGATCTGAAGTTCTTCTGATAAGCTGTTCAATTGCCTTGCCTGCAAGATCTTGGTCACTTCTAGGTTTATTTCCCAAGATTAGTGAGTCTTATTATTGGAA
281    V W S G D Q E S E V L L D K L F L Q E K I L V T S R F Y F P R F S E Y V L E
961    CCITTGAACATGACAATGACGTACAACCTTTTCGTCGTCAGCATCACIGGACAAAGAAATTTCTAAGCTCCCCGATGATGAACTGTAGAAAAGATAATGGGGGATCAAGAGACTA
321    P L N H E N A V Q L F R R A A S L D K G I S K L P D D E T V E K I I G G C K R L
1081   CCTCTGCACTGAAGTAACTGGGAGGTCTCTTCCCAACAAAGCATCTGTGTTGGAAGTAAAGGGAGGAATTTGGCTAGAAGTGGCTCCATATTGATCTGCAATGAACCTCTT
361    P L A L K V I G R S L S E K D T S I V W K V T G R N L A R S G S I F S Y L
1201   GAATGCCCTCAGAGCACTTTGGATGCTCTGGATGATAACATGCTAACTAAGAAGAGTTTCAATGGATTAGGCTCTTTTCATGAAGATCAAGAATTTCTGCTTCTACCTTCATTGACATG
401    E C L Q S S L D V L D D N M V T K K S F M D L G S F H E D Q R I S A S T F I D M
1321   TGCACAGTTTGTACACACTAGACGAAAGTGAAGCAATGGTTACCTTGAACCACTATCTCTCGAAGTCTAGTTAATTTTTCACAGCGAGAAATATGGATATGATGATGACTTTAT
441    C T V L Y T L D E S E A M V T L D E L S S R S L V N F V T A R K Y F S D D D F Y
1441   GAAGAGTACTCTTTTACTCAGCATGATATCTCAGAGATTTGGCTATTCACTTGATGAATATGGAGCCCATAGAACAAGGAAAGATTGATCTTAGACATTATGGAATGATCTTCCC
481    E E Y S F T Q H D I L R D L A I H L M N M E P I E Q R K R L I L D I N G N D L P
1561   AAATGGTGGTTGATCAAGAAAGCATATCTCTTAAGTTCGCTTATATCCATAACCAAGATGAAGAGATTCCTCAGCAAGTTGGCTGACATGGAAGCACCTGAAGTGGAGGTTCTGATT
521    K W W V D Q E K H T S Y A R L I S I T T D K R F S A S W P D M E A P E V E R S D C I H L
1681   CTIAATCTTCAGTCAAGAAGTACAACCTTGCCTGGGTTTCATCAAAAGAAATGAATAAGCTGAAAGTTTGTATAATCACATATTTGGTTCTTTCTAAGTGAAGTGAAGTGAAGTAAAT
561    L N L Q S R T Y N L P G F I K R M N K L K V L I I T Y F G S F L T E V T S E D N
1801   CAACCTACCTGACAGCCCAACAAAGTCTTGAACGAATCAGGTTTGAAGCGGATTCAGTTCCCTTAICTTTAGTAAATCCAAACCCGAAACCACTGATAAACTGCAGAAAAATATCTTTCTTATG
601    Q L L D S L T S L E R I R F E R I S V P I F S N P N P K P L I N L Q K I S F F M
1921   TGCAAATTTGGTCAAAACATTCAGGATCCCTCAACCCCAATTCAGATTTGTTGCCAAACCTGCTGGAGATTCCATAGACTTCTGCAACAATTTGAGTGAAGTCCCAATAGGTTGTGT
641    C K F G Q T F M D P S T P I S D L L P N L L E I S I D F C N N L S E V P N R L C
2041   GAAATTTGTCAGCTTGCAGAAAGTGAAGCAATCAAAATGGCAATGCTTCCCTGCGCAAGATGTAGGGAAGTTGATTAACTCAAAAAATCTAAGGCTAAGATCTTCGATTCAATTAA
681    E I V S L Q K L S I T N C H G L S L P E D V G K L I N L K N L R L R S D C I H L
2161   GAAGAGTTTCCAGAGTCGACAACGAAGCTTCGGGAATTAGTCTGCTGATATATCTAAGTGTATGGTCTTGCCAAGCTTCCCGAGAAGATTGGTGAATTTCAATTTAGAAAAGCTT
721    E E F P E S T T K L R E L V L L D I S N C I G L A K L F E K I G E F H N L E K L
2281   GACATGAGCACTGCTGGAGTTTGAAGCAAGCTGCCACTGTCGATTGGAAGCTGAAAAATGTGAAGTTTTCATGATAGAGAGGTTGGAGAGTGGTTGAGAAAGTTGCAACCTCGCCTT
761    D M R H C W S L S K L P L S I G K L K N V K F L C D R E V G E W L R K V A P R L
2401   GCCAACACAGTGAAGTGAAGAGGAAGCAACCTGGAGTGGCTTGGTTTTGA
801    A K Q V K V Q E E E A N L E W L G F *
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Figure S1. Nucleotide and deduced amino acid sequences of cucumber *CsRSF1* CDS encoding a protein. The deduced amino acid sequences are given below the nucleotide sequences. The transcriptional start site is shown in red and the termination codon is marked by an asterisk (*).

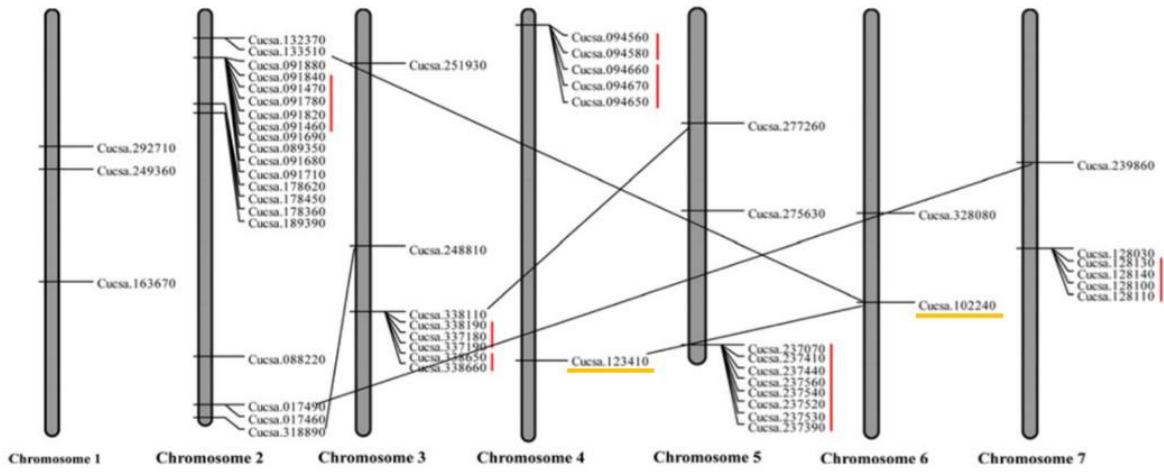


Figure S3. Chromosome location of NBS-LRR superfamily in the cucumber. The yellow lines represent *CsRSF1* (Cucsa.102240) and *CsRSF2* (Cucsa.123410).

Supplementary Tables

Table S1 The primers of PCR used in this study.

Analysis	Primer name	Sequence(5'-3')
PCR for <i>CsRSF1</i>	<i>CsRSF1</i> -F <i>CsRSF1</i> -R	TTGATACATATGCCCCGTCGACATGGCGCTGGAATTGGT G GCCCTTGCTCACCATGGATCCAAAACCAAGCCACTCC AGGTT
PCR for <i>CsRSF2</i>	<i>CsRSF2</i> -F <i>CsRSF2</i> -R	TTGATACATATGCCCCGTCGACATGGCGGTTACAGATTTC TTTGT GCCCTTGCTCACCATGGATCCCTCTTTGAGCCAATCTA AGTTGAAG
<i>CsRSF1</i> -silencing vector	TRV <i>CsRSF1</i> -F TRV <i>CsRSF1</i> -R	AAGGTTACCGAATTCTCTAGAGCTTCTTCCTCTTGAC TTTCA GGGACATGCCCCGGGCGCTCGAGGTCCTGCTTGATATAT CTAACTG
<i>CsRSF2</i> -silencing vector	TRV <i>CsRSF2</i> -F TRV <i>CsRSF2</i> -R	AAGGTTACCGAATTCTCTAGATCACTCTTTGAGCCAAT CTAAG GGGACATGCCCCGGGCGCTCGAGAAGCATTGTGTACT TTCTTGT
<i>CsRSF1</i> -overexpression vector	GFPC <i>CsRSF1</i> -F GFPC <i>CsRSF1</i> -R	TTGATACATATGCCCCGTCGACATGGCGCTGGAATTGGT G GCCCTTGCTCACCATGGATCCAAAACCAAGCCACTCC AGGTT
<i>CsRSF2</i> -overexpression vector	GFPC <i>CsRSF2</i> -F GFPC <i>CsRSF2</i> -R	TTGATACATATGCCCCGTCGACATGGCGGTTACAGATTTC TTTGT GCCCTTGCTCACCATGGATCCCTCTTTGAGCCAATCTA AGTTGAAG
Chimeric primer for <i>CsRSF1</i> -GFP	<i>CsRSF1</i> -GFP-F <i>CsRSF1</i> -GFP-R	CAAGCTGCCACTGTGCGATTG TGGTGCAGATGAACTTCAGGGT
Chimeric primer for <i>CsRSF2</i> -GFP	<i>CsRSF2</i> -GFP-F <i>CsRSF2</i> -GFP-R	TACCTAGATCAGTTGTGTCTTTGCA TGGTGCAGATGAACTTCAGGGT

Table S2 The primers of qRT-PCR used in this study.

Analysis	Primer name	Sequence(5'-3')
<i>CsActin</i> gene for qRT-PCR	Actin-F Actin-R	TCGTGCTGGATTCTGGTG GGCAGTGGTGGTGAACAT
qRT-PCR for <i>CsRSF1</i>	q- <i>CsRSF1</i> -F q- <i>CsRSF1</i> -R	CTACCTTCATTGACATGTGCAC TTCGAGAGGATAGTTCGTCAAG
qRT-PCR for <i>CsRSF2</i>	q- <i>CsRSF2</i> -F q- <i>CsRSF2</i> -R	CGGGGAAGACTACTTTAGCTAG GTTTTGCAACCAGTTACGTTTG
<i>Chitinase</i> for qRT-PCR in transgenic cucumber	<i>Chitinase</i> -F <i>Chitinase</i> -R	GCCGCACTGTCCAATACCAG TCAGGAGATTGTCCGCGTTA
<i>CuPil</i> for qRT-PCR in transgenic cucumber	<i>CuPil</i> -F <i>CuPil</i> -R	GCACCAAAACAACGAAAAGG GGCTATAAGGACCGCTACCAT
<i>PR-1a</i> for qRT-PCR in transgenic cucumber	<i>PR-1a</i> -F <i>PR-1a</i> -R	GAAGCTGGCGGACCTTA GCATCTCACTTTGGCACATC