Supporting data

A gain-of-function mutation in the *Arabidopsis* disease resistance gene *RPP4* confers sensitivity to low temperature

Xiaozhen Huang, JianYong Li, Xiaoyan Zhang and ShuhuaYang

A

B

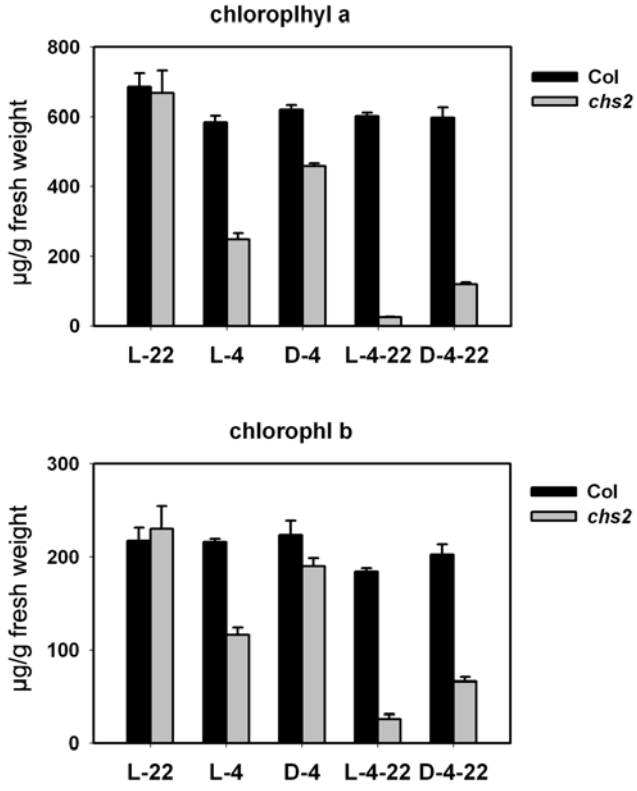

Fig. S1 The effect of light on *chs2* phenotype at cold stress. Plants were grown at

22ºC for 3 weeks (L-22) and then treated at 4ºC for 6 d under light (L-4) or dark (D-4), followed by transfer to 22ºC for 10 d under light (L-4-22) or dark (D-4-22).

A. *chs2* phenotypes at different light conditions.

B. Chlorophyll content in wild type and *chs2* plants at different light conditions. The data represent the means of three replicates ± SD.

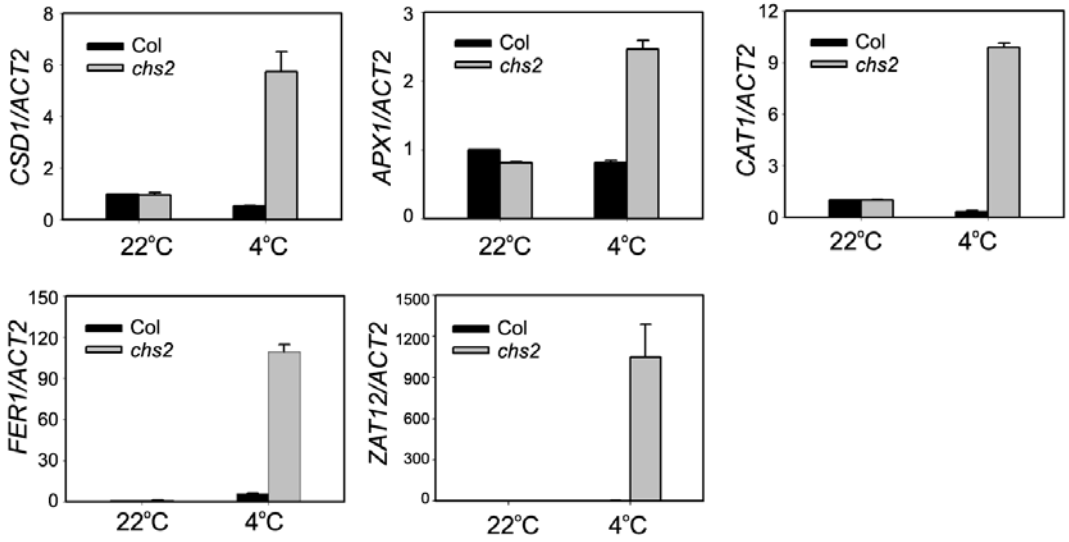

Fig. S2 Expression of ROS-associated genes in *chs2* plants under cold stress. Wild-type Col and *chs2* plants were grown at 22ºC for three weeks and then treated at 4ºC for 6 d. The data represent the means of three replicates ±SD. All experiments were repeated three times with similar results.

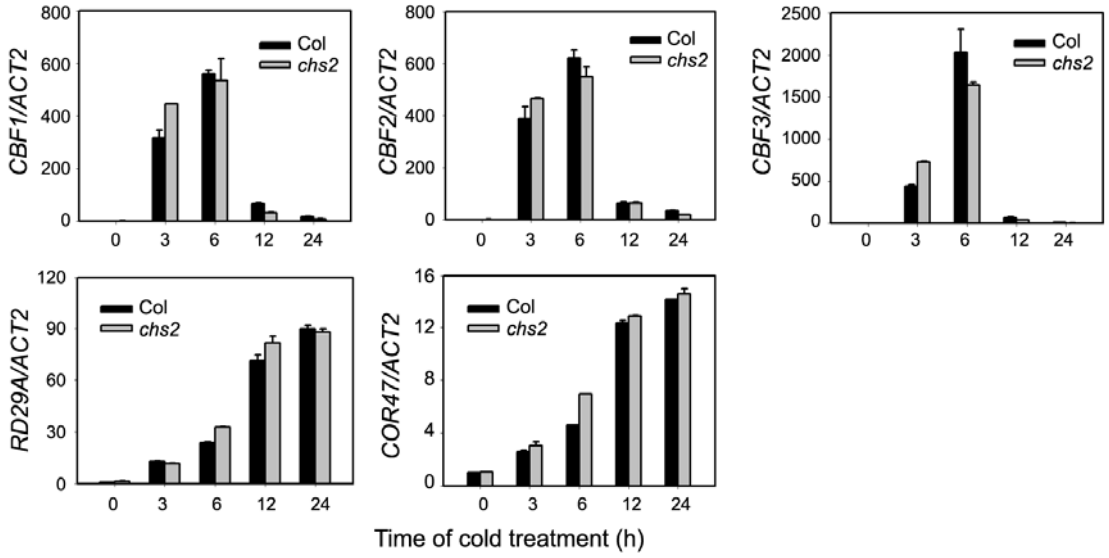

Fig. S3 Relative mRNA levels of cold responsive genes in *chs2*. Two-week-old seedlings grown at 22°C were treated at 4°C for the indicated times. Transcription levels were determined by quantitative real-time PCR. The data represent the means of three replicates ± SD. Similar results were observed in at least three independent experiments.

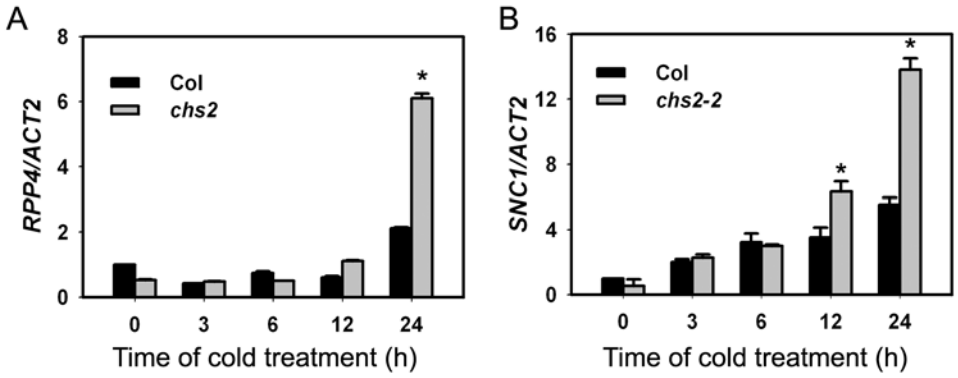

Fig S4. Expression of *RPP4* and *SNC1* in *chs2* at cold stress. Three-week-old 22ºC -grown plants were treated at 4ºC for the indicated times. The data represent the means of three replicates ± SD. **P*<0.01 (*t*-test), significant difference from Col. All experiments were repeated three times with similar results.

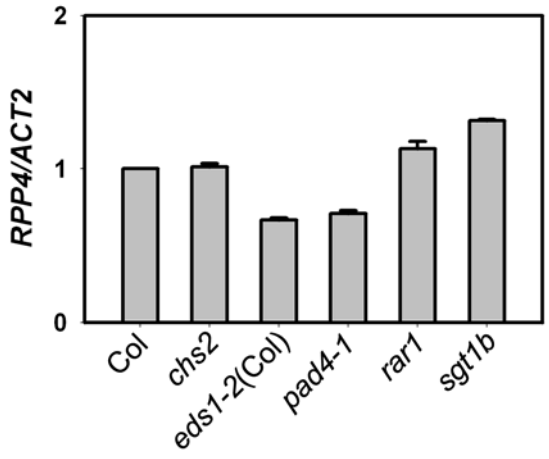

Fig. S5. Expression of *RPP4* in *eds1, pad4, rar1,* and *sgt1b* mutants. Total RNA was isolated from two-week-old seedlings grown at 22°C. Transcription levels were determined by quantitative real-time PCR. The data represent the means of three replicates ± SD. Similar results were observed in three independent experiments.

Table S1. Gene-specific primers used in this study.

Primer name	Primer sequence
For cloning and genotyping	
CHS2-1F	5’-GCCTACTGAAGCGTTTATGGT-3’
CHS2-1R	5’-AGTAAATGAGGCCTTGAGTGCC-3’
CHS2-2F	5’-GATTGACCTTGTATATGAGGTGG-3’
CHS2-2R	5’-CACTCATCTTTGTCCCTTCCTTTTGAA-3’
CHS2-p1F	5’-CTGGTTGAACTCATAATGGAGGA -3’
CHS2-p1R	5’-GGGAGACGATAGAGGGAACTCAG -3’
For quantitative PCR analysis	
CBF1-1	5’-GCATGTCTCAACTTCGCTGA-3’
CBF1-2	5’-ATCGTCTCCTCCATGTCCAG-3’
CBF2-1	5’-TGACGTGTCCTTATGGAGCTA-3’
CBF2-2	5’-CTGCACTCAAAAACATTTGCA-3’
CBF3-1	5’-GATGACGACGTATCGTTATGGA-3’
CBF3-2	5’-TACACTCGTTTCTCAGTTTTACAAAC-3’
RD29A-F	5’-GCCGAGAAACTTCAGATTGG-3’
RD29A-R	5’-CCATTCCTCCTCCTCCTTTC-3’
COR47-1	5’-CAGTGTCGGAGAGTGTGGTG-3’
COR47-2	5’-ACAGCTGGTGAATCCTCTGC-3’
ZAT12-F	5’-GGCGGCGAATTGTTTGATGCTTTT-3’
ZAT12-R	5’-CCCATCGGAAACTCCACTCCACAT-3’
APX1-F	5’-TCGCATGGCACTCTGCTGGAAC-3’
APX1-R	5’-CACCAGTAACTTCAACGGCCAC-3’
CAT1-F	5’-ACCTGTTGGTCGCTTGGTCTTGA-3’
CAT1-R	5’-GGTGAGCACATTTAGGGGCATTA-3’
FER1-F	5’-CACTACTCCCTCACGGCTCTGCTT-3’
FER1-R	5’-CGTTGTATTCCACATTGATTTGCTC-3’
CSD1-R	5’-GATGCTAATCGACATGCTGGTGATC-3’
CSD1-F	5’-CTGGAGACCAATGATGCCGCAAG-3’
PR1-F	5’-CACATCCGAGTCTCACTGAC-3’
PR1-R	5’-CAGACTCATACACTCTGGTG-3’
PR2-F	5’-AAGGAGCTTAGCCTCACCAC-3’
PR2-R	5’-CACAACGTCCGATGGACTTG-3’
q16860-1R	5’-GAAGGCACTCAAGGCCTCATTTAC-3’
q16860-1F	5’-GACAATAATCCCACCATAGCCTTT-3’
qSNC1-F	5’-ATGGAGATAGCTTCTTCTTCTG
qSNC1-R	5’-AAGCTCTTCAATCATGGCTGCT-3’
ACTIN2-F	5’-GGTAACATTGTGCTCAGTGGTGG-3’
ACTIN2-R	5’-AACGACCTTAATCTTCATGCTGC-3’