

Table S1: Primers used in qRT PCR analysis

Gene	Sequence (5'-3')	Purpose
<i>GmActin11</i>	F: GCGGGAAATTGTAAGGGATGT R: TCGCCAATAGTGATGACCTG	Internal reference gene for <i>GmSNF1</i> expression analysis in soybean hairy roots and gene silenced plants
<i>GmSNF1</i>	F: TGAGCTCCAACATTGGTGTGG R: ACACGCACAGGGCTAAGGATTC	<i>GmSNF1</i> gene expression analysis
<i>GmABI1</i>	F: TGCCAGGGCTACTGATTTGG R: CCCCATAGCGGGGTACAATC	<i>GmABI1</i> gene expression analysis
<i>GmABI2</i>	F: AAACGGTCGCAGGTTCAGAT R: GCCACAGCAAGAGGATCAGT	<i>GmABI2</i> gene expression analysis
<i>GmCAT</i>	F: ATGAGATCCGCAGTGTCTGG R: GGCCTCGTGCTGAGATGAGA	<i>GmCAT</i> gene expression analysis
<i>GmSNF4</i>	F: GTGGAAGCTAATCCGAGGA R: GACTGGGGAAGCAACTCATGC	<i>GmSNF4</i> gene expression analysis
<i>GmERF7</i>	F: CTGCATTGGCGTCTTTGCTCAG R: TCATAGGGTTTCCAGCAGCATCC	<i>GmERF7</i> gene expression analysis
<i>GmPKS4</i>	F: GTTCGATTTGTGCGCCGTTGT R: CTTCCAATCTCGAAATCACGCT	<i>GmPKS4</i> gene expression analysis

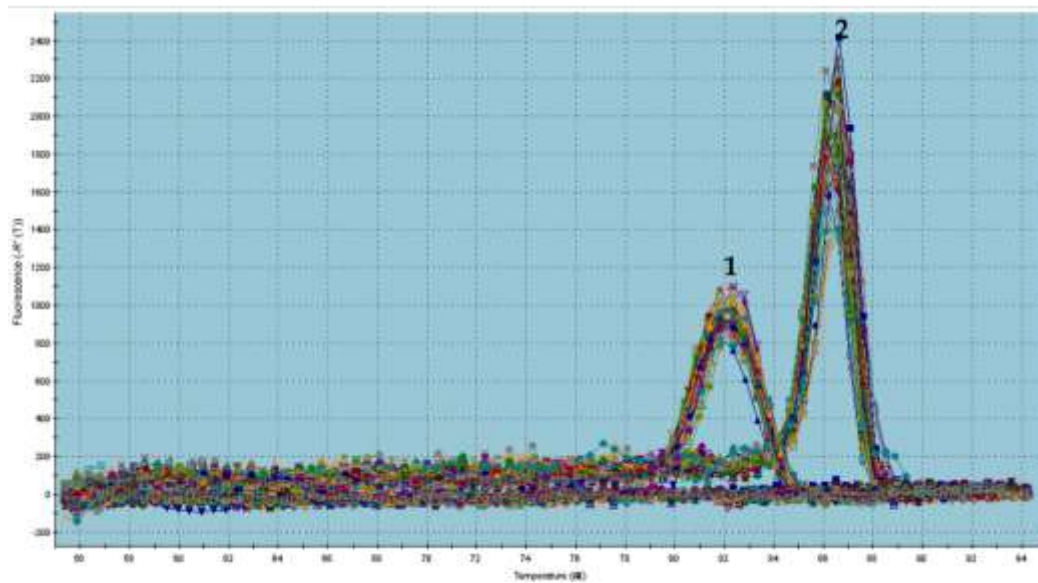


Figure S1 Melting curve analysis of *GmSNF1* gene in soybean roots under salt, salt-alkali, drought, and ABA stresses at 0 h, 1 h, 3 h, 6 h, 12 h, 24 h, 48 h. 1 represents for *GmActin11* gene; 2 represents for *GmSNF1* gene.

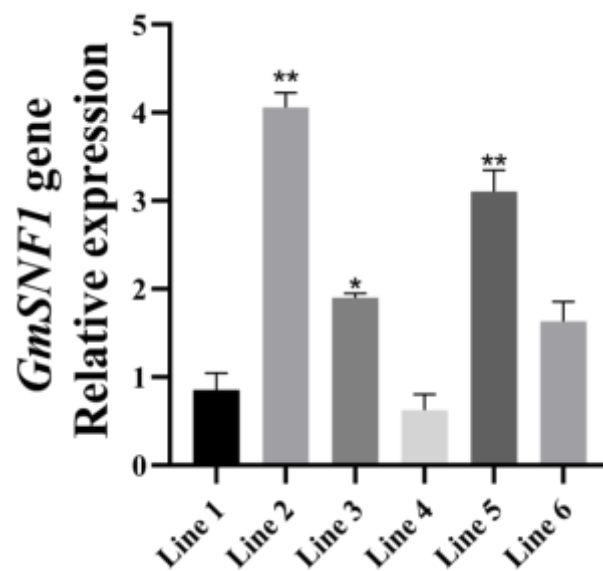


Figure S2 Checking for *GmSNF1* gene expression level in the six selected T3 homozygotes *Arabidopsis* lines. 25-day-old *Arabidopsis* samples were used. Data represent mean and standard deviation of three repeats ($n = 3$). Significant differences were determined by unpaired two-sided Student's *t*-tests (*, $P < 0.05$; **, $P < 0.01$).

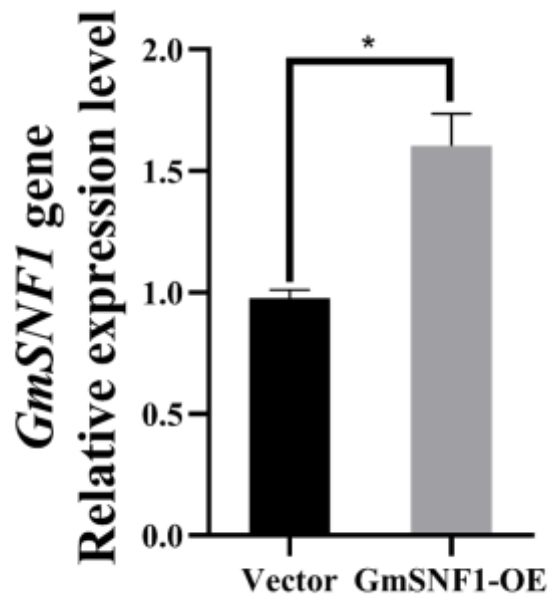


Figure S3 Expression of *GmSNF1* in vector controls and transgenic soybeans. Data represent mean and standard deviation of three repeats (n = 3). Significant differences were determined by unpaired two-sided Student's t-tests (*, $P < 0.05$).

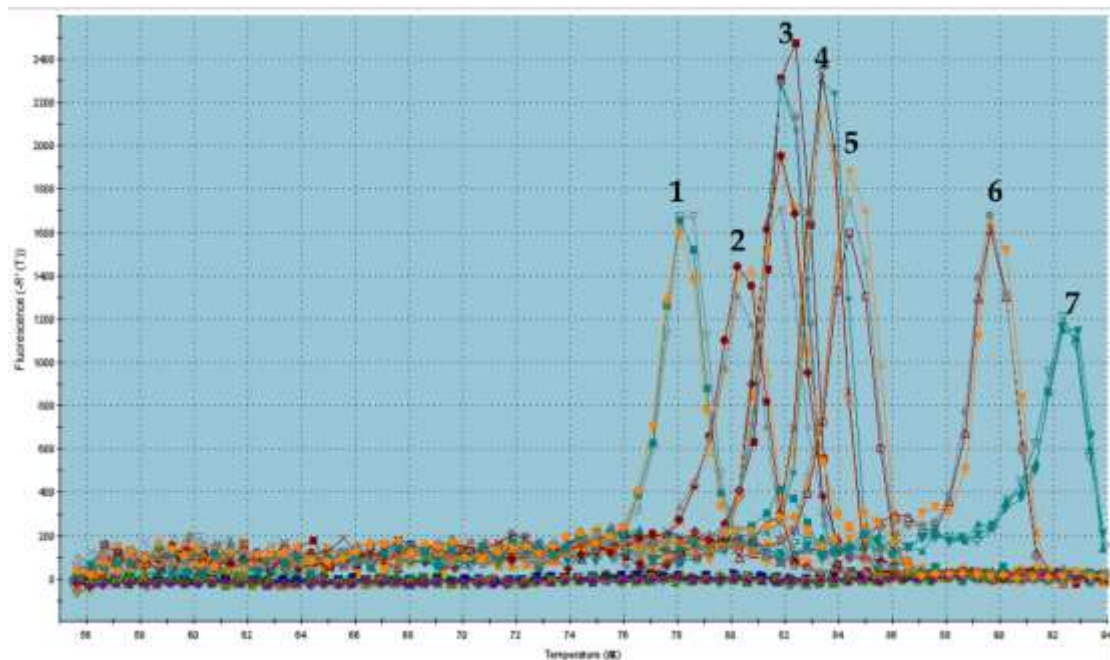


Figure S4 Melting curve analysis of some stress-related genes in *GmSNF1*-OE soybean plants under salt-alkali stress. 1 represents for *GmPKS4* gene; 2 represents for *GmActin11* gene; 3 represents for *GmABI1* gene; 4 represents for *GmABI2* gene; 5 represents for *GmSNF4* gene; 6 represents for *GmCAT* gene; and 7 represents for *GmERF7* gene.

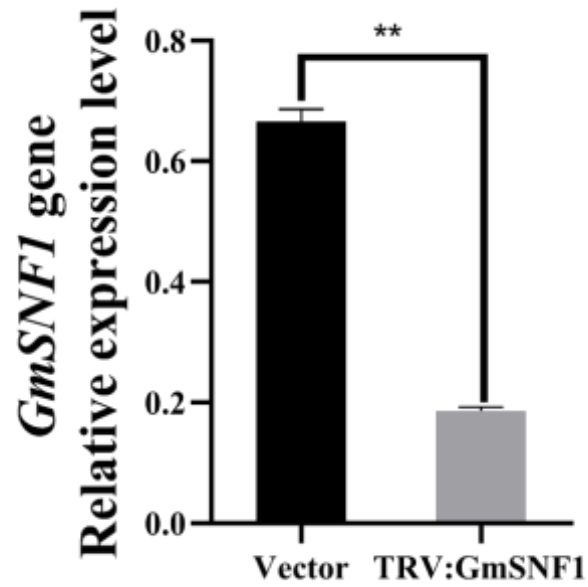


Figure S5 Expression of *GmSNF1* in vector controls and gene-silenced soybeans. Data represent mean and standard deviation of three repeats (n = 3). Significant differences were determined by unpaired two-sided Student's t-tests (**, $P < 0.01$).

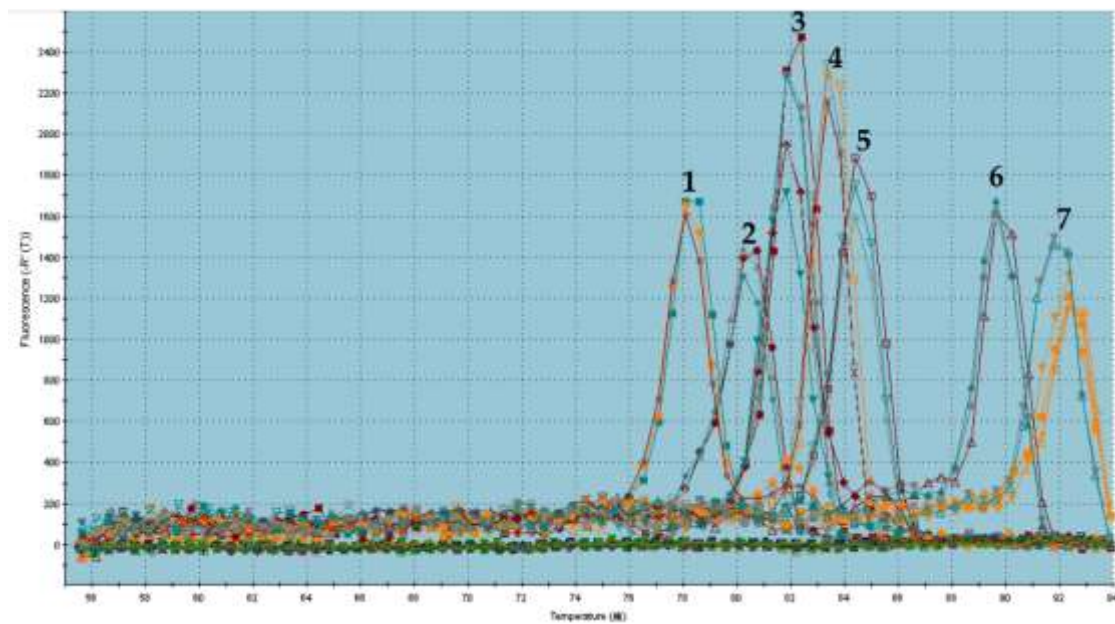


Figure S6 Melting curve analysis of some stress-related genes in *GmSNF1* gene-silenced soybean plants under salt-alkali stress. 1 represents for *GmPKS4* gene; 2 represents for *GmActin11* gene; 3 represents for *GmABI1* gene; 4 represents for *GmABI2* gene; 5 represents for *GmSNF4* gene; 6 represents for *GmCAT* gene; and 7 represents for *GmERF7* gene.

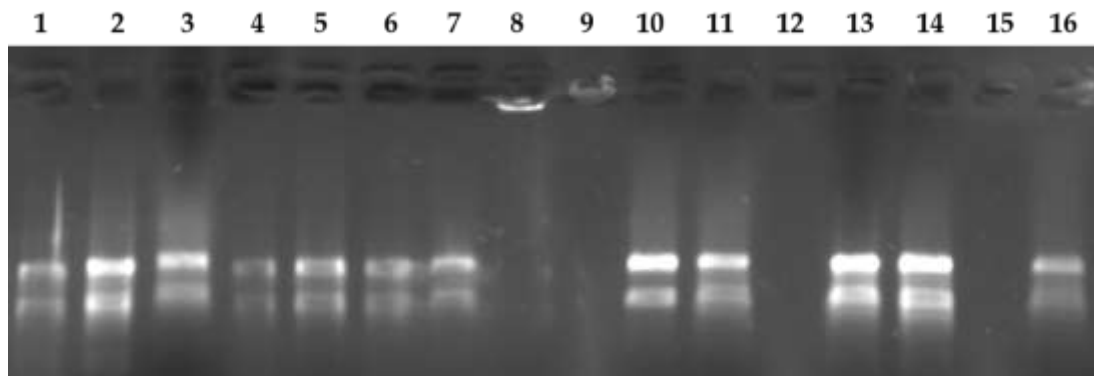


Figure S7 Extraction of RNA from soybean roots under salt and salt-alkali stress. 1, 2, 3, 4, 5, 6, 7 are salt treated at 0 h, 1 h, 3 h, 6 h, 12 h, 24 h, 48 h; 10, 11, 13, 14, 16 are salt-alkali treated at 1 h, 3 h, 6 h, 12 h, 24 h, respectively (The degraded RNA of some samples had been re-extracted.).

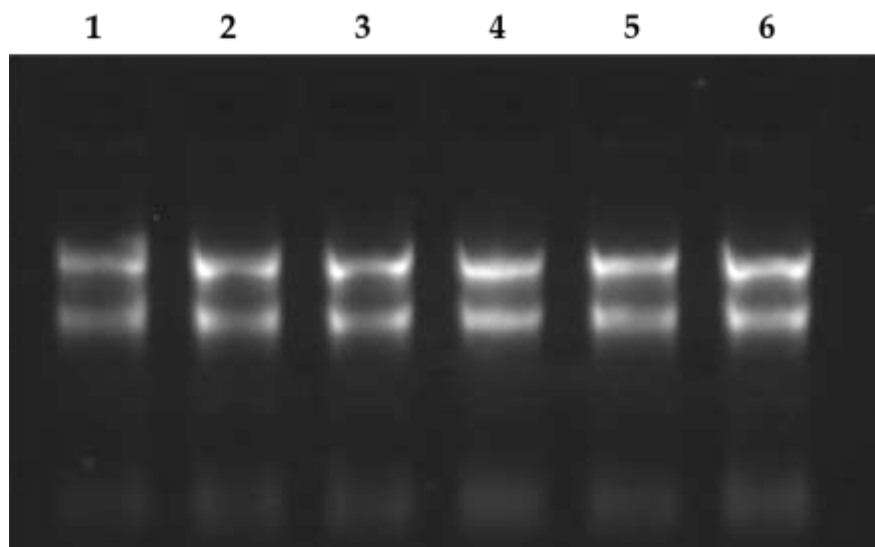


Figure S8 Extraction of RNA from soybean leaves under salt stress. 1, 2, 3, 4, 5, 6 represent for leaves treated under salt stress at 1 h, 3 h, 6 h, 12 h, 24 h, 48 h, respectively.

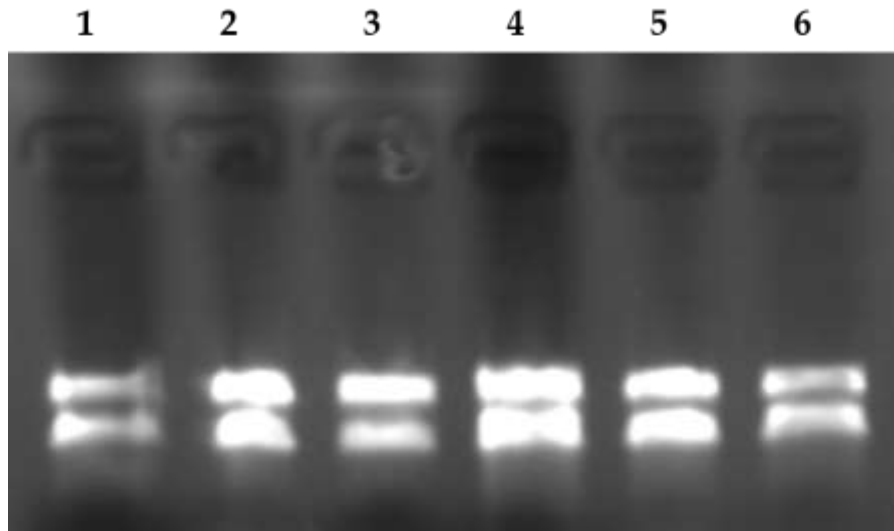


Figure S9 Extraction of RNA from GmSNF1-OE soybean plants under salt and salt-alkali stresses. 1, 3, and 5 represent for control plants under no treatment, salt treatment, and salt-alkali treatment, respectively; 2, 4, and 6 represent for GmSNF1-OE plants under no treatment, salt treatment, and salt-alkali treatment, respectively.

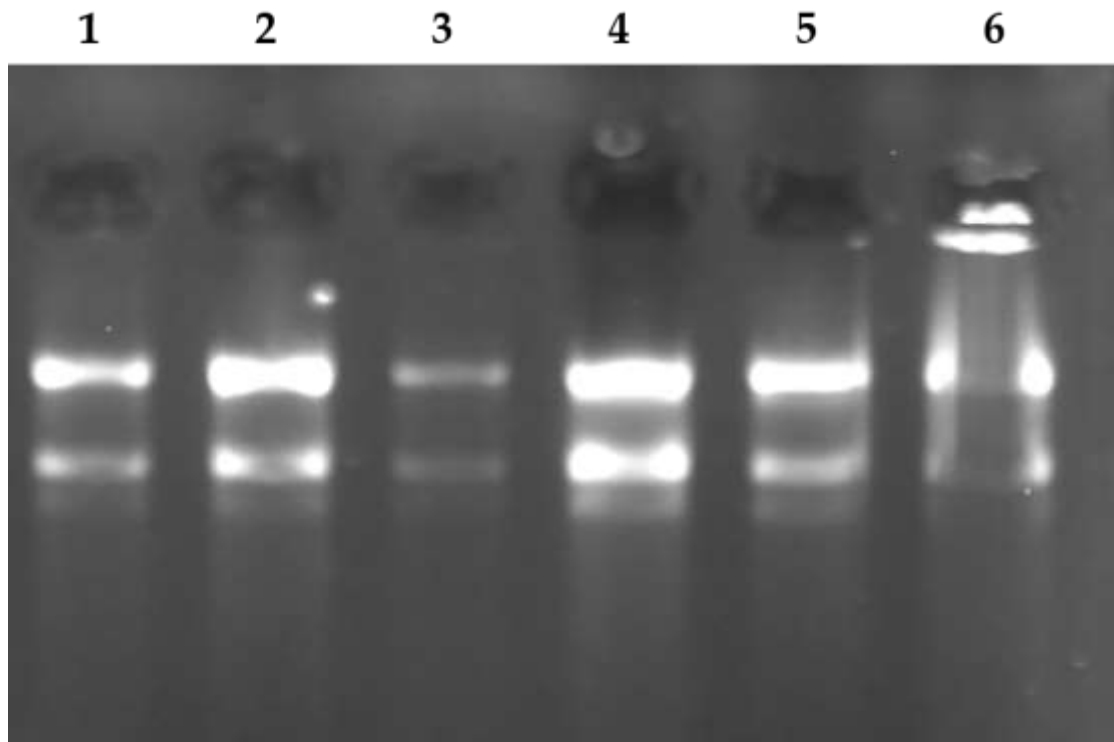


Figure S10 Extraction of RNA from soybean *GmSNF1* gene-silenced plants under salt and salt-alkali stress. 1, 3, and 5 represent for control plants under no treatment, salt treatment, and salt-alkali treatment, respectively; 2, 4, and 6 represent *GmSNF1* gene-silenced plants under no treatment, salt treatment, and salt-alkali treatment, respectively (The degraded RNA of some samples, such as 3 and 6, had been re-extracted for the experiment.).