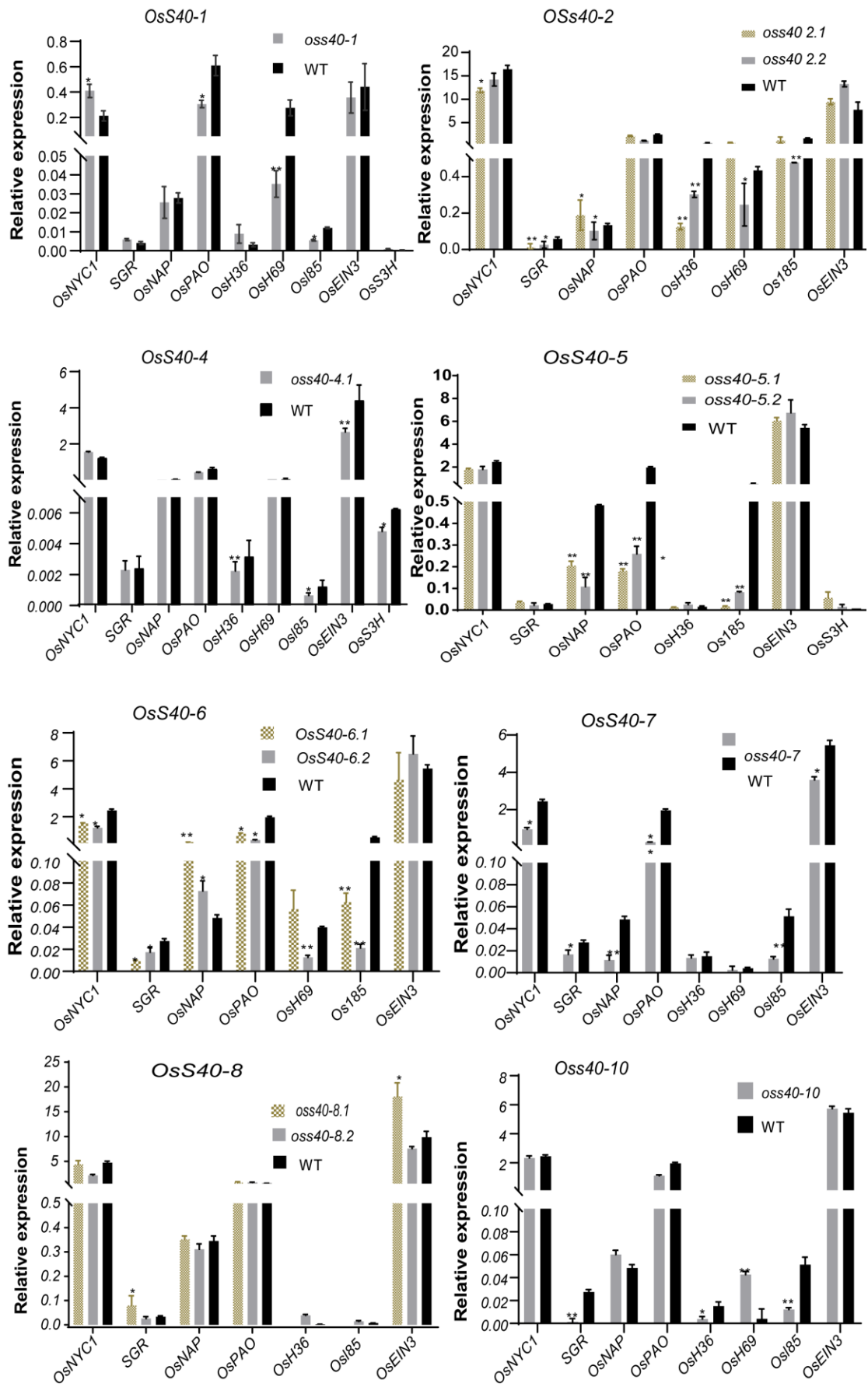
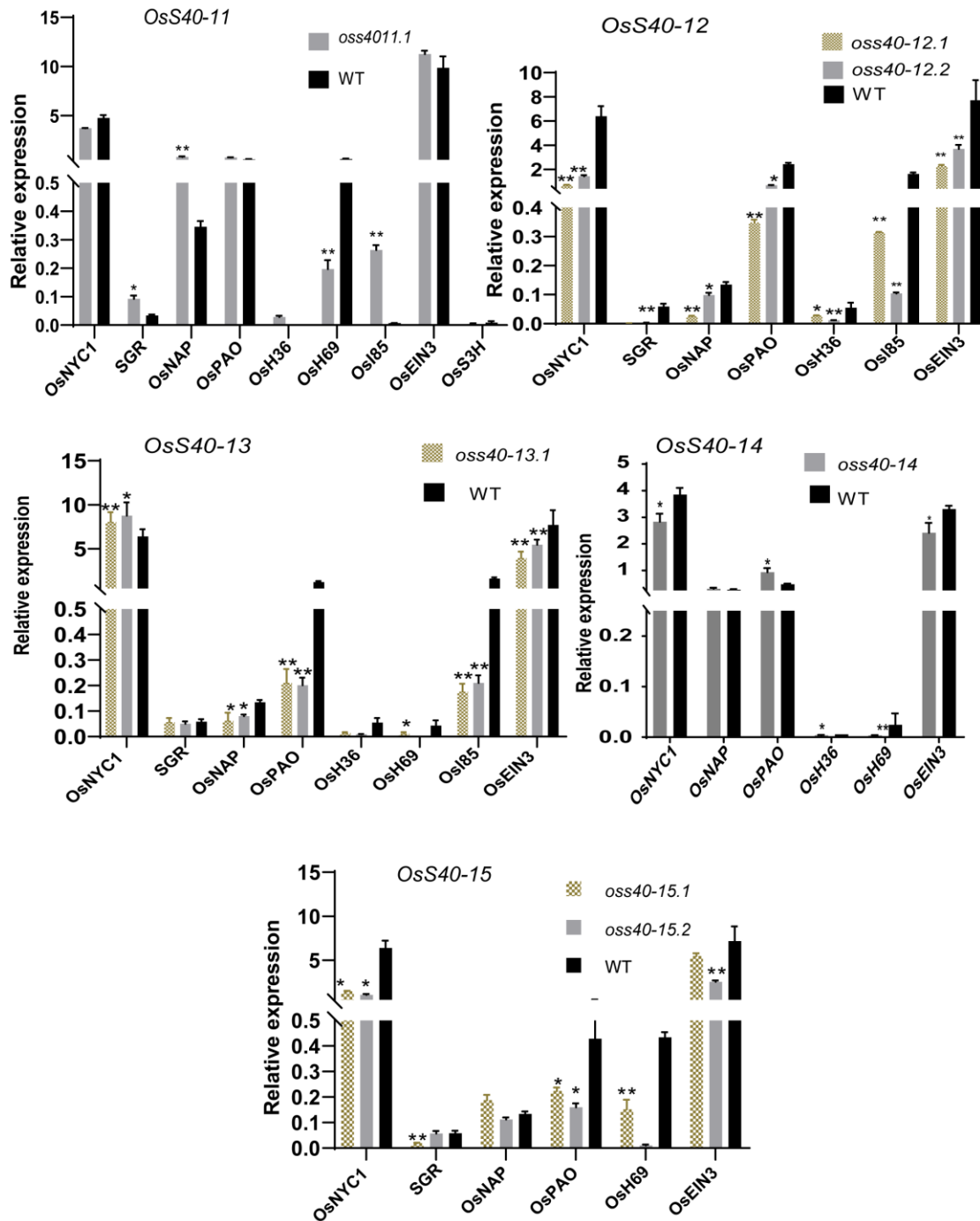


Supplementary Table S1 The list of primer sequences used in this study

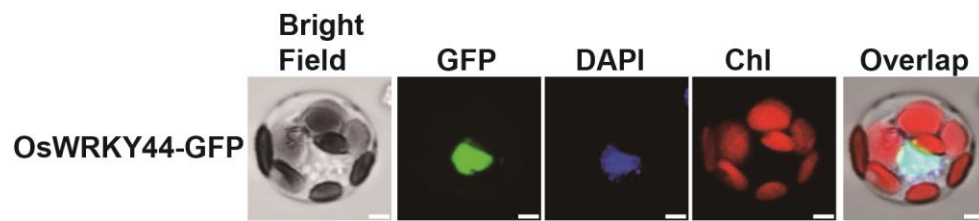
Name and purpose	Forward primer	Reverse Primer
<b>Primers used for qRT-PCR</b>		
<i>OsS40-1</i>	ACGACGCTGTGAAGAAGAAGATG	AGCCTCCTCCGATCAACAATG
<i>OsS40-2</i>	GAGGATCAGCCACGGGAGC	TCCCCACGCACACCGAGAA
<i>OsS40-3</i>	CCCAGGGTGAGGTTCCAC	GTCGTCTGATCCGTCGCC
<i>OsS40-4</i>	ACGAGGACGACGAGATGGTG	CAGAGGTCGAGGAATCCGGT
<i>OsS40-5</i>	AACCAATTCCTCGCCGTCC	GTCGTCATCGTCCTCCTCGTC
<i>OsS40-6</i>	TTGTCGCCAACCCAGTCC	CGTCCCACCTTGAACATCTCCT
<i>OsS40-7</i>	GCTGTGGCCGGATCACC	GATCTGCTGCTGGCCCG
<i>OsS40-8</i>	GTCGAAGGGCGGGAAGGGGA	CTCCAGATGGCGTTGCGG
<i>OsS40-9</i>	TAGGCGGTTATCGGTGGAGG	CGAGAAGGTGGTCATCGGTG
<i>OsS40-10</i>	ATGGGCACTTGGGCATTACACC	TCCAGGTCTTGTGCTGCATCTG
<i>OsS40-11</i>	CGACGACGAGGGGAGCAAGA	TCCGAGGGTATCCTCACGGG
<i>OsS40-12</i>	GACGTGCTCTGGCCTGCAT	CGCCTCCGACGGTATCCTC
<i>OsS40-13</i>	CGAGTTCGACGAGTCGGA	CCTGTACTCGACCCCAAGAA
<i>OsS40-14</i>	GTGGAGGAGCTCGACGAGTT	GTGTCTCGTATGGCTGCACC
<i>OsS40-15</i>	GTTCCAGTACCACCACCACC	CGTACCAGACATCAGCCTCC
<i>OsS40-16</i>	TCACGATCAGAGCAACGAAGCG	TCCTCGTGCTGCCTGTTATTCC
<i>Actin</i>	TCCATCTTGGCATCTCTCAG	GTACCCTCATCAGGCATCTG
<i>OSH36</i>	GCACGGAGGCGAACGA	TTGAGCGGTAGCACCCATT
<i>OsNAP</i>	CAAGAAGCCGAACGGTTC	GTTAGAGTGGAGCAGCAT
<i>SGR</i>	AGGGGTGGTACAACAAGCTG	GCTCCTTGCGGAAGATGTAG
<i>NYC1</i>	CATGCAACACCAACAAAAGG	GACCATTCCAGGAGAAGCAG
<i>OsI85</i>	GAGCAACGGCGTGGAGA	GCGGCGGTAGAGGAGATG
<i>OsEIN3</i>	ATCTTCCCGCAACCTACAA	CATGATCGTGGCATTGTCGT
<i>OsS3H</i>	GCAACGACCGGTATAAGAGC	ATTCGTCGTAGTAGGCCTGG
<b>Target site Sequences for CRISPR/Cas9</b>		

<i>OsS40-1</i>	TGGCAGCCGACGATAAGG	GAAGCCCACGACCGAGAC
<i>OsS40-2</i>	TCCTCGTCTCTTCTCCTCCTC	GATCAGGTCTCGAGGAAGCC
<i>OsS40-4</i>	GGGGAGATCAGAGCCAAAGG	CTCGTCGTCCTCGTTGTCTG
<i>OsS40-5</i>	CTGGTCAGTAGCCACCACAC	CGACTGGTGGTACGGCTG
<i>OsS40-6</i>	CCATAAAAGCCAAACCCCC	CTCTTGTCCCCCTCGTGCAA
<i>OsS40-7</i>	GTGCCGGGTCATCCTTCAAT	CAAGGCCCAAACGTCCAAAC
<i>OsS40-8</i>	TCCCCCTGCCGCCGTACTION	CCGTTGCTTTGCTTCTCCC
<i>OsS40-10</i>	CTCGATGAAGCCGGTCATGC	ATCTGTTCCGCTCCTGCTC
<i>OsS40-11</i>	GACCGCCTCCTGCTCTTTC	TCTCAGTCGAGGAATCCGGT
<i>OsS40-12</i>	CGTCCACCCCAACCTCCCCT	CCGCCCACATCACCCCCCTA
<i>OsS40-13</i>	TGCCAGTCCGGTATGTTTAC	GACAACCAAACGTCCAAGGC
<i>OsS40-14</i>	ATGGCGATGGTGGTGG	TCCTTCGATGAACCCG
<i>OsS40-15</i>	CGGCGCTTCTCCTCCTCC	CCGGCTTTCCTCTCCGAC
<i>OsS40-16</i>	CCTCCCCTTGCTCCTCCT	TGTGAGTCTGTTGGTCGGTG
<b>Primer used for Transcription Activity</b>		
<i>OsS40-1</i>	CTCGAGGGGGGGCCCATGGAGGAA TTCCAAGAGGC	AGTACCCGGGTACCCATTTCTCGATGA ATCCGGTCA
<i>OsS40-7</i>	CTCGAGGGGGGGGCC ATGGCGACGATGGGAGAG	AGTACCCGGGTACCCA TCCTTCAATGAACCCGGTCA
<i>OsS40-12</i>	CTCGAGGGGGGGGCC ATGGAGCGCCTCCTGCA	AGTACCCGGGTACCCA GTCGAGGAAGCCGGTGC
<i>OsS40-13</i>	CTCGAGGGGGGGGCC ATGGCTGGGAGCGCGA	AGTACCCGGGTACCCA GTCCTCGAAGCCGGTCTTC
<i>OsS40-14</i>	CTCGAGGGGGGGGCC ATGGCGATGGTGGTGG	AGTACCCGGGTACCCA TCCTTCGATGAACCCG
<i>OsS40-15</i>	CTCGAGGGGGGGGCC ATGGCGAAGGCGCGGAA	AGTACCCGGGTACCCA GCCGTCGAAGCCGGTTCG

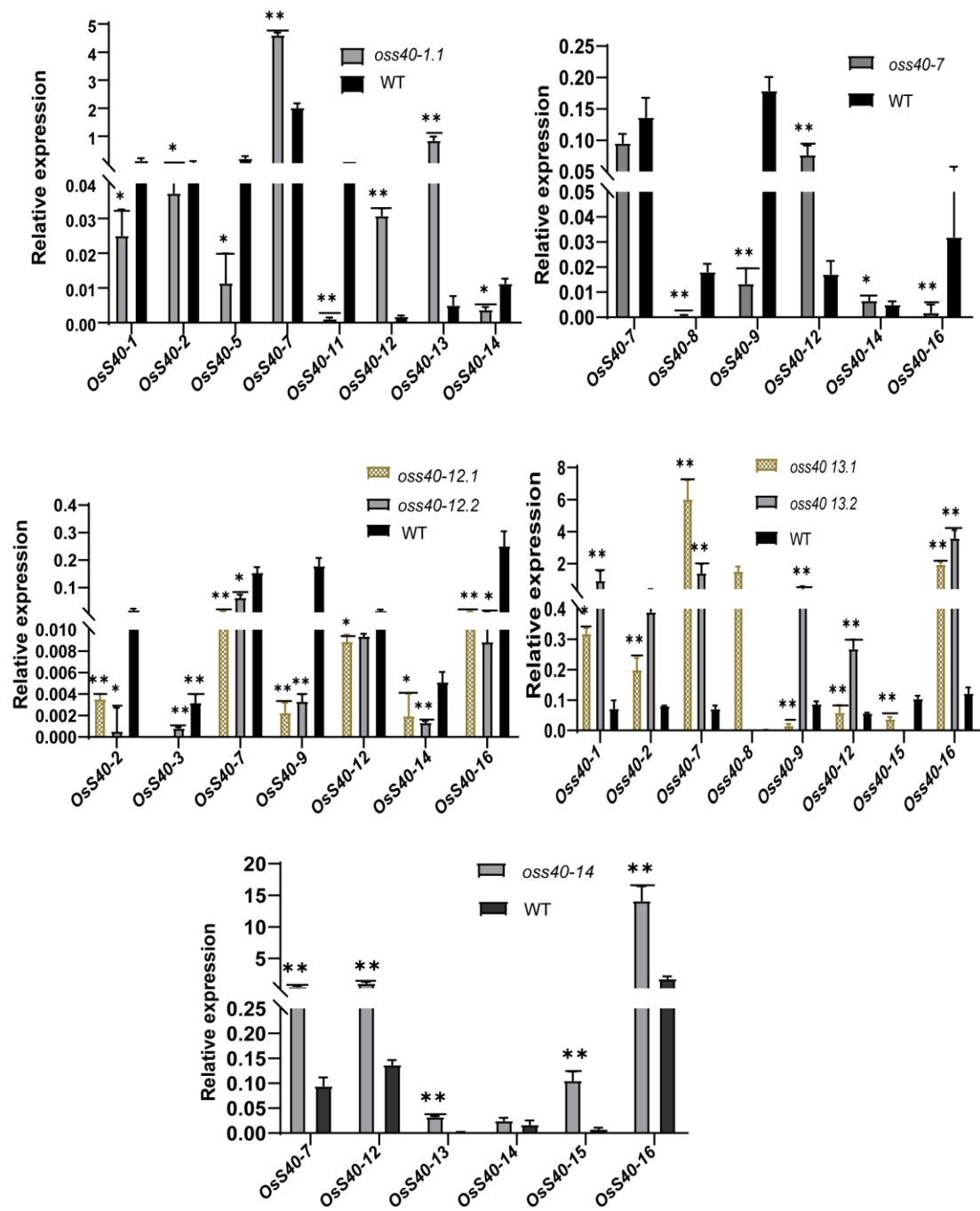




Supplementary Figure S1 Expression profiles of senescence related genes are detected in various oss40s mutants by RT-qPCR. The values are mean  $\pm$  S.D. Mean and SD values were obtained from three biological replicates and three technical replicates. Significant differences of the expression levels normalized to WT were evaluated using Student's t-test (\*,  $P < 0.05$ ; \*\*,  $P < 0.01$ ).



Supplementary Figure S2 Subcellular localization of OsWRKY44 in rice protoplast. Chl, Chlorophyll fluorescence.



Supplementary Figure S3 Expression profiles of OsS40 genes are detected in various *oss40*s mutants by RT-qPCR. The values are mean  $\pm$  S.D. Mean and SD values were obtained from three biological replicates and three technical replicates. Significant differences of the expression levels normalized to WT were evaluated using Student's t-test (\*,  $P < 0.05$ ; \*\*,  $P < 0.01$ ).