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Functional Plant Biology

Supplementary Material

Maize *STARCH SYNTHESIS REGULATING PROTEIN1* positively regulates starch biosynthesis in rice endosperm

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Fig. S1 Multiple sequence alignment of CBM48-containing sequences. Amino acid sequences were aligned using ClustalX, the conserved residues of the CBM48 domain are marked with stars. The protein sequence can be found by following accession numbers: AtPTST1(AED94476.1), OsGBP (NP001045821.1), HvPTST (F2EBQ8), MePTST (XP021605024.1), AtPTST2 (NP174027), OsFLO6 (Q10F03.1), ZmSSRP1 (DAA50700.1).

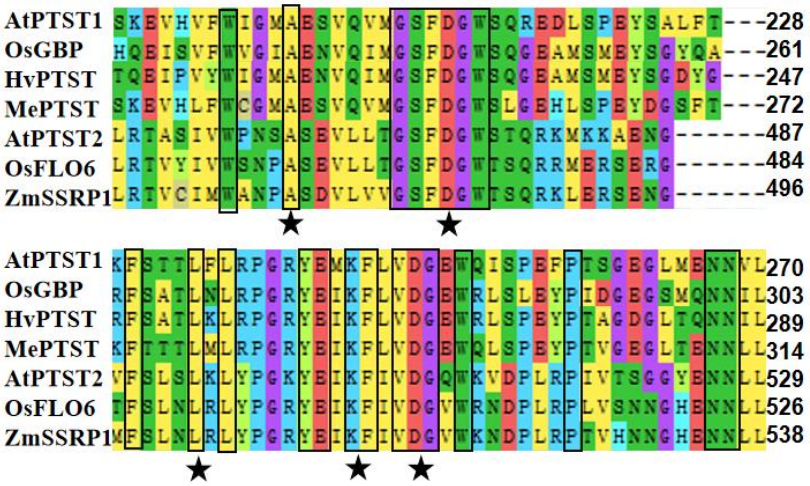

Fig. S2 Molecular identification of *ZmSSRP1* transgenic rice plants. A, B. RT-PCR and qRT-PCR analysis of *ZmSSRP1* expression patterns in the transgenic and wild-type (WT) rice seedlings. L1 and L2 represent the different transgenic lines. *OsActin1* was used as an internal control. **C.** Southern blot analysis of transgenic plants . Genomic DNA was digested with EcoRI. M, DNA marker;CK-, negative control; CK+, plasmid DNA (pCAMBIA1301-ZmSSRP1) positive control. L1, L2, L3, and L4 are four independent transgenic lines that overexpress *ZmSSRP1*.

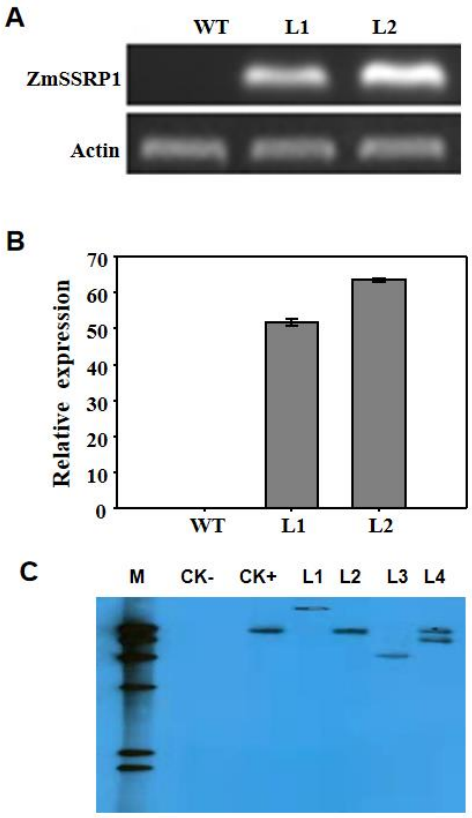

Fig. S3 Seed morphology of wild type and ZmSSRP1-overexpressing rice lines.

(A) Seed length. (B) Seed width. (C) Seed thickness. Bar=1mm.

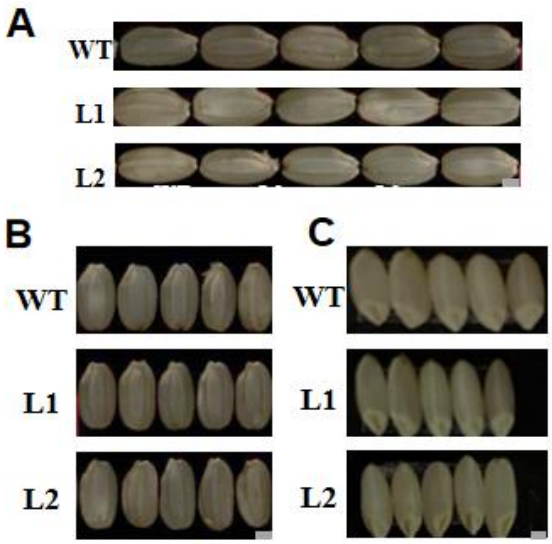

Fig. S4 Effect of overexpression of *ZmSSRP1* in rice on the protein content.

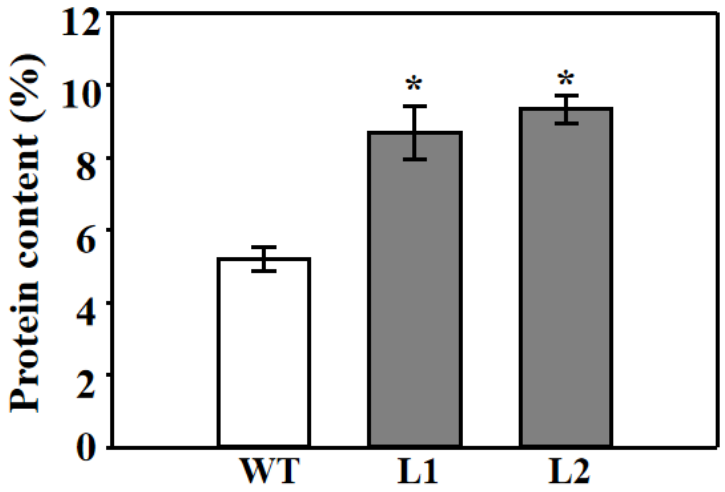

Table S1 Primers used in this research

Assay	Primer Name	Sequence (5'-3')
qRT-PCR analysis	ZmActin-F	CTGACGGAGCGTGGTTACTCAT
	ZmActin-R	TGGTCTTGGCAGTCTCCATTTC
	ZmSSRP1-F	CGTGTATTACCGTGGTGATCTA
	ZmSSRP1-R	GTGAGCATCCCCTCGATTC
	OsTublin-F	TACCGTGCCCTTACTGTTCC
	OsTublin-F	CGGTGGAATGTCACAGACAC
	OsAGPL1-F	GGAAGACGGATGATCGAGAAAG
	OsAGPL1-R	CACATGAGATGCACCAACGA
	OsAGPL2-F	AGTTCGATTCAAGACGGATAGC
	OsAGPL2-R	CGACTTCCACAGGCAGCTTATT
	OsAGPS1-F	GTGCCACTTAAAGGCACCATT
	OsAGPS1-R	CCCACATTTCAGACACGGTTT
	OsBEIIa-F	GCCAATGCCAGGAAGATGA
	OsBEIIa-R	GCGCAACATAGGATGGGTTT
	OsBEIIb-F	ATGCTAGAGTTTGACCGC
	OsBEIIb-R	AGTGTGATGGATCCTGCC
	OsGBSSI-F	AACGTGGCTGCTCCTTGAA
	OsGBSSI-R	TTGGCAATAAGCCACACACA
	OsSSIIa-F	GCTTCCGGTTTGTGTGTTCA
	OsSSIIa-R	CTTAATACTCCCTCAACTCCACCAT
	OsIAS1-F	TGCTCAGCTACTCCTCCATCATC
	OsIAS1-R	AGGACCGCACAACTTCAACATA
	OsPUL-F	ACCTTTCTTCCATGCTGG
	OsPUL-R	CAAAGGTCTGAAAGATGGG
Subcellular localization		
	ZmSSRP1-GFP-F	GCTCTAGA ATGCCCCCACTCGTCCCCTCGCT
	ZmSSRP1-GFP-R	CGGGATCCAGTGACAAGCAGAAG GTTGTTTTC
	ZmSSRP1N-GFP-R	CGGGATCCCTCCTCAAATTCCCAATCATCAGAGA
	ZmSSRP1C-GFP-F	GGACTAGTACAAAGGTAATGCAAGCTCAGGAGGA