

**Table S4** Information of representative genes used in this study

Name	Accession NO.	Description	Forward primer (5'→3')	Reverse primer (5'→3')
OsGUN4	AP014967	Genome uncoupled 4	TTACCGGCAGGCCGACGAGA	TGCCCAGGAGCTGTGTCCCT
OsFBA	AP014962	Fructose-bisphosphate aldolase 5, cytosolic	CTCATCTGCCAGGAGAACGG	CAGGTCTTGATGTCGTGGGC
OsFBP1	AP014957	Fructose-1,6-bisphosphatase 1	GTTCTGCACGCTTGTTCTG	TGAACTCCCCGAGAGATGGA
OsFBP-L	AP014959	Fructose-1,6-bisphosphatase like	CAACTGCCTCAAATCGAGCG	CACGATGTAGTTGCCCGAGT
OsFBP2	AP014961	Fructose-1,6-bisphosphatase 2	CAAACAACGGGCCCTTGAAC	CGTCATCATAGCTCCCCAGG
OsFBP3	AP008212	Fructose-1,6-bisphosphatase 3	CCTTGATCCTTCCCTTGGGG	TTGCATTGTTGAATCACAGACCT
OsPGI2	AP014962	Glucose-6-phosphate isomerase, cytosolic	CCAATGGGCAACACAGCTTC	CAAGTAAACGGGTTGCTGGC
OspPGM	AP014966	Phosphoglucomutase, chloroplastic	TCAAGGGCTTGTTGTCTCGG	AGGATCCGCATATGCACCAG
OsSPS2	AP014958	Sucrose-phosphate synthase 2	CATTCACGCATCACGTTCCC	CGCCACTTTCACCAACAAGG
OsSPS5	AP014967	Sucrose-phosphate synthase 5	GCGTCCAAGGTGAAGAAGGT	GTGTAGACGAGGTTGCACCG
OsSPPL1	AP014957	Sucrose-phosphatase 1	CCCTGCTGGCTTCTTGATAA	CTTGAGGACTGCTCATCCG
OsSPPL2	AP014958	Sucrose-phosphatase 2-like	TGGAAGGTGATGTGTGGTCG	TGTGTTACCACGAAGCCCTC
OsFrK1	AP014964	Fructokinase-2-like	TGACCTTGAAAAGCAACGGC	GGATCAGGTCCAGGTTGAGC
OsHXK1	AP014963	Hexokinase-1-like	TCCCATTGACGGAGTTTCGAC	CTTCTCGTAGGTCTGCTCGC
OsHXK4	AP014963	Hexokinase-4, chloroplastic-like	GCGCTATGCAACAAGACACC	CAGCAGAGAAGCTTGGGACA
OsHXK7	AP014961	Cytosolic hexokinase	TGTGGCTGAAAACTTGCAGA	AGGGAATACAGTTCAATGCTGGA
OsSUS1	AP014959	Sucrose synthase 1-like	TGAACGGAGTGTCTGGCTTC	GGGTCTTCTGGCACTTCTC
OsSUS2	AP014962	Sucrose synthase 2-like	AGTCTTTGTCCAGCCTGCAT	CCATGGCATGTTGCGATTGT
OsSUS4	AP014959	Sucrose synthase 4-like	TTGGCTGGGGTTTATGGCTT	CAAGATAGCGCCTGGTCTCC
OsSUS5	AP014960	Sucrose synthase 5-like	GCTGGATCAAGGCACAGACT	TGCAGGCTGAACAAATGCAC
OsSUS6	AP014958	Sucrose synthase 6-like	CACAACCTACAGAGAGCGCA	AGAATGGGCACACTTGCCCTT
OsSUS7	AP014960	Sucrose synthase 7-like	GCTGGATCAAGGCACAGACT	TGCAGGCTGAACAAATGCAC
OsAGPL1	AK100910	ADP-glucose pyrophosphorylase large subunit 1	AACAGCCACCGAGATTCAGC	TGGCGGTAAGTTTCTCCGTG
OsAGPL2	AK071497	ADP-glucose pyrophosphorylase large subunit 2	GGAGCCGAGCTTCTGACTAT	CCAAATCAGCACCCCTCTGGT
OsAGPL3	AK069296	ADP-glucose pyrophosphorylase large subunit 3	AGCGAGGGTGTCCAAGAAAG	CCTTCCCGTCCTTGATGGTC

OsAGPL4	AK121036	ADP-glucose pyrophosphorylase large subunit 4	AGTTTCCCATGGGTGCTTTCT	GCACCCCGGTTCTAATCTT
OsAGPS1	AK073146	ADP-glucose pyrophosphorylase small subunit 1	GAAGGCGCAGTGATAGAGGA	CCACCAGTCTCAGAAAGGGC
OsAGPS2a	AK071826	ADP-glucose pyrophosphorylase small subunit 2a	AGGATGCTTTGCTCCCTAGC	TTATAATGCCCGCCTGGTGC
OsAGPS2b	AK103906	ADP-glucose pyrophosphorylase small subunit 2b	TACTTGGCCTTGACGACGTG	CACGGAGGAGCTGAAGCATT
OsUGP2	AP014958	UDP-glucosepyrophosphorylase 2	TACATATCTGTTCAACAATCAGC	AGGTTTTAGTGACAAACGTTA
OsGBSSI	AK070431	Granule-bound starch synthase 1	TGCAGGGGATGAGATACGGA	AGTCTTGCCTTCGATGACCG
OsGBSSII	AK067654	Granule-bound starch synthase 2	GCTTCAACTGTCAAACGGGC	AGCCATGCAGTTCTGAACCA
OsSSI	AK109458	Soluble starch synthase I	TGGGCCTTCATGGATCAACC	GGTCCTCGGAGAAATTCGCT
OsSSIIa	AK101978	Soluble starch synthase IIa	GTGAAGAGACCATGTCCGCC	CCAAGCTTCTTCAGGGAGGC
OsSSIIb	AK066446	Soluble starch synthase IIb	TCGTCAAGGCCAAGTACCAG	CAGAGCCGCCCTAGAGAAAA
OsSSIIc	AK072339	Similar to Starch synthase II, chloroplast precursor	GTGGTCTTCGAGACACCGTT	TCAGTCTGTTTGCCTCTGCC
OsSSIIIa	AK061604	Soluble starch synthase IIIa	TTGTTCTATGGTTTTCTTTTGCCT	CTCTTGCAAGGCATACACAGC
OsSSIIIb	AK122098	Soluble starch synthase IIIb	TGACGGCCTGTGTAGCTTTT	GTTTGGTTCACGCTGCCAAT
OsSSIVa	AK103906	Similar to Starch synthase IVa	CTATACCTGTGGAGCTGCGG	GCTGAATGCCCTTTCCAAGC
OsSSIVb	AK067577	Soluble starch synthase IVb	AGGCTAGTTCCTCAAAGGGTG	CTGGACTTGAGCCAGAAGA
OsSSV	AP014958	Similar to Starch synthase V	TCCTGAGGAAAGCTGAAGCAGA	TATACTGCACCTGTCCATATTCT
OsBEI	AK119436	Starch branching enzyme I	GGAAGAAGGTTCACTCCCTGT	GTGAGTGCTCATCTCCGAGC
OsBEIIa	AB023498	Starch branching enzyme IIa	GCGTGCAGCTATTGACCAAC	GCGGGTGAATCCAAGCTTTT
OsBEIIb	D16201	starch branching enzyme IIb	AGCACTTCACTGCCGATTGT	TCCGCTGGAGCATAGACAAC
OsBEIII	AP014962	Similar to starch branching enzyme III	GGGAGCTGACGAGCAATCAA	CAATTCCAAGGAGTTGCGGC
OsISA1	AB093426	Starch-debranching enzyme, Isoamylase 1	CTGACTTGCAACGGTTCTGC	AACCGTTGAGCTGTTGGGAA
OsISA2	AC132483	Isoamylase 2	GGAATCTTGCCTACAGATGACT	TTGCAGAAGCAACTCCAAACT
OsISA3	AP005574	Isoamylase 3	CGACGATTTCTCGGTACGCA	ACCATCTCACCTTTTGCGA
PUL	AB012915	Pullulanase	TGGGGCTTGAATTGCATCCT	GAGACAACACTTCAACAACCTGG
Amy3E	AK064300	Alpha-amylase isozyme 3E	AGTAAGCGGAATGTACCCTGT	TGCAAGTCTTTCTTGAGGATCG
Amy3B	AK241191	Alpha-amylase isozyme 3B	CCAGTTGAACCCCTGGAAGA	GCATAGCCTCAATGAGCAGC
Amy3C	AK101358	Alpha-amylase isozyme 3C	CGGAGATGTCTACGTCGCAA	GCCCACATCATAACCGAGTC
Amy3D	AK119761	Alpha-amylase isozyme 3D precursor	CTCAACTGGCTCAAGTCCGA	TCTTAGCGATGTCCGTGGAG
OsPPDKB	AK103898	Pyruvate orthophosphate dikinase	GGCTGGGCTGGACTATGTTT	GGGCGTCATCATCAGAGGAG

PDI	AK068268	Protein disulfate isomerase	GAGAGGGCATGGATGCTTGT	TTGGCAAATCTGGCGTTGG
GluA1	AK242245	Glutelin type-A1 basic chain	GTAAGCAGCCAAGTGGCAAG	AAACTGAGCCCGTGTTCGAC
GluA2	AK107314	Glutelin type-A2 precursor	TTGTGTTCCCGTTCCAATGT	AGATAAGGGAGGGTTGTCCA
GluA3	AK107271	Glutelin type-A3 precursor	TTCCATCTTCCGCGCACTT	TGCTTGAGCCTCCTAGCTTC
CysR10	AP014959	10 kDa prolamin precursor	CCATGGATCCGTGTAGGCAG	CCATTGGCTGCGACATGAAC
OsAlaAT1	AP014966	Alanine aminotransferase 1	TCCCTCAGCTTAGTCTGCCA	CGAGGAGACGAAGGGCATAG
OsAlaAT4	AP008216	Alanine transaminase 4	CACAGAGCCGGATGTGTTCT	TGTCCAAACTGAGCCAGG
Globulin1	AK105347	Globulin1	GGCGGGGACGATCAATTACT	AGGGACGGAGATGGTATGGA
Globulin2	AK121667	Globulin2	GCAGCTGTGTGATCGAGAGG	CCCCTTGGCTACACGTACAC
11s-Globulin	AK121775	11s-Globulin	GAGAAGCTGTTCGGTCCAA	GACGCAATGGCAAAGGGAAG
10kD-Prolamin	AK108254	10kD-Prolamin	CCATGGATCCGTGTAGGCAG	CCATTGGCTGCGACATGAAC
13kD-Prolamin	AK242306	13kD-Prolamin	GGACATTAACGTTGTCCAGGC	TGAGCCAGATTCCGGTCAAT
17kD-Prolamin	AK242322	17kD-Prolamin	GCAACAGGTGCAATTAGATGCT	GACACCACACATGGAGGGTA
19kD-Globulin	AK287940	19kD-Globulin	ACGACCCATAATGCCTGGTG	AGATCCGCCAATTTTCAGGCT
RA16	AK242298	Species of rice allergenic proteins	CGTTCTGCAACGTGGACATC	GCTAGTAGCCAGTTCCCGGT
RA17	AK242340	Species of rice allergenic proteins	TGTTGATGCATGAAGAAGAAA	AGTAACATTACCATGCATAATC
RA5B	AK242333	Species of rice allergenic proteins	GAGGTGGTGTCTGCTACTGG	CACACCACATACATGCACAGC
RAG2	AK107328	Species of rice allergenic proteins	TGCTTTTCAATTTGTCAGGAAGCA	TGCTACCCAATTGGCAAGATG
RG21	AK243000	Species of rice allergenic proteins	TCGGTGCCTTCACTCCTAGA	CACTCTGAGGCCTCGTTCTC
OsbZIP58	AP014963	bZIP transcription factor 58	TGACCCAACAGATCCAGTGC	ATTCATTCGAAGTTGCGCCG
OsRSR1	AP014961	RICE STRACH REGULATOR 1	TAGAGGCTGCAAGGGCTTATG	CATCATATGTGCTGGGCTCG
FLO2	AP014960	FLOURY ENDOSPERM 2	AACTGTTGGCACCACAGACA	TCCTTTCCCTTTGCATGGGCT
OsWRKY90	AP014965	SUSIBA2-like (WRKY transcription factor 90)	GAGGGGAAGCACAACCATGA	AGCGTTTCCAGATCCAGAGC
OsSUT2	AP014968	Sucrose transporter 2	AACAACGCTACACAGGGACC	TATCCGAGTCCTCCTTGGGT
OsSUT4	AP014958	Sucrose transporter 4	CCGCTTTTCTGGTTGCAGTT	AGCTCTGCAGGCTGTTACAA