

Supplementary tables

Table S1. Phenotypic values of germination percentage in CNDH population

Replicates	Temperature (°C)	Parents		CNDH Population		
		Cheongcheong	Nagdong	Max.	Min.	Mean
1	15	0.0 ± 0.0	70.0 ± 3.3	100.0	0.0	38.0 ± 31.9
2		0.0 ± 0.0	66.7 ± 1.7	100.0	0.0	37.6 ± 31.3
1	20	56.7 ± 1.7	100.0 ± 0.0	100.0	23.3	88.2 ± 17.6
2		55.0 ± 0.8	100.0 ± 0.0	100.0	25.0	88.9 ± 16.6

The data are presented as mean ± standard deviation. The GP was investigated under different temperature conditions.

Table S2. 25 genes related to seed germination were screened from the interval RM7197-RM15063 on chromosome 3.

Function	Locus	Description	No. of Genes
Cell function	LOC_Os03g25990	Similar to Expansin (Expansin2)	1
Embryo development	LOC_Os03g20910	Homeodomain-like containing protein	2
	LOC_Os03g24380	Similar to Glutathione peroxidase	
Hormone	LOC_Os03g19420	Nicotianamine synthase 2 (EC 2.5.1.43) (S-adenosyl-L-methionine:S-adenosyl-L-methionine:3-amino-3-carboxypropyl-transferase 2) (<i>OsNAS2</i>)	13
	LOC_Os03g19427	Nicotianamine synthase 1 (EC 2.5.1.43) (S-adenosyl-L-methionine:S-adenosyl-L-methionine:3-amino-3-carboxypropyl-transferase 1) (<i>OsNAS1</i>)	
	LOC_Os03g19480	SET domain-containing protein	
	LOC_Os03g19500	Ubiquitin-conjugating enzyme, E2 domain containing protein	
	LOC_Os03g20120	Similar to Galactinol synthase (Fragment)	
	LOC_Os03g20550	Similar to WRKY transcription factor 55	
	LOC_Os03g21040	Ricin B-related lectin domain containing protein	
	LOC_Os03g21400	Cytochrome P450 family protein	
	LOC_Os03g22590	Similar to Senescence-associated protein (SAG29)	
	LOC_Os03g24930	Similar to Phytosulfokine receptor-like protein	
	LOC_Os03g25480	Similar to Cytochrome P450	
	LOC_Os03g25490	Similar to Cytochrome P450	
	LOC_Os03g25500	Cytochrome P450 family protein	
Signaling	LOC_Os03g17980	<i>OSK3 (OSK5)</i>	4
	LOC_Os03g18150	Protein phosphatase 2C family protein	
	LOC_Os03g18600	Streptomyces cyclase/dehydrase family protein	
	LOC_Os03g22770	Similar to CONSTANS-like protein CO9 (Fragment)	

Seed germination	LOC_Os03g21710	Similar to WRKY1 (WRKY transcription factor 17)	5
	LOC_Os03g23960	IQ calmodulin-binding region domain containing protein	
	LOC_Os03g25030	Lipolytic enzyme, G-D-S-L family protein	
	LOC_Os03g25040	Lipolytic enzyme, G-D-S-L family protein	
	LOC_Os03g25350	Plant lipid transfer/seed storage/trypsin-alpha amylase inhibitor domain containing protein	

Table S3. 7 genes related to seed germination were screened from the interval RM528-RM20632 on chromosome 6.

Function	Locus	Description	No. of Genes
Embryo development	LOC_Os06g45640	Similar to Nuclear Y/CCAAT-box binding factor C subunit NF-YC	1
Hormone	LOC_Os06g45960	Cytochrome P450 family protein	3
	LOC_Os06g46680	Cytochrome P450 family protein	
	LOC_Os06g46740	Cupredoxin domain containing protein	
Signaling	LOC_Os06g44970	Similar to Auxin efflux carrier protein	2
	LOC_Os06g45300	Serine/threonine protein kinase-like protein	
Seed development	LOC_Os06g46330	Protein kinase-like domain containing protein	1

Table S4. 9 genes related to seed germination were screened from the interval RM23314-RM23178 on chromosome 8.

Function	Locus	Description	No. of Genes
Embryo development	LOC_Os08g34380	Similar to SERK1 (Fragment)	3
	LOC_Os08g34640	Similar to Receptor-like protein kinase precursor (EC 2.7.1.37). Splice isoform INRPK1a	
	LOC_Os08g36440	TB2/DP1 and HVA22 related protein family protein	
Hormone	LOC_Os08g34210	Glyceraldehyde-3-phosphate dehydrogenase	3
	LOC_Os08g36310	Cytochrome P450 family protein	
	LOC_Os08g36860	Cytochrome P450 family protein	
Seed dormancy	LOC_Os08g36910	Alpha-amylase isozyme 3D precursor (EC 3.2.1.1) (1,4-alpha-D-glucan glucanohydrolase)	1
Seed germination	LOC_Os08g35110	Auxin responsive SAUR protein family protein	2
	LOC_Os08g36790	TRAB1 (BZIP transcription factor)	

Table S5. List of primers used for qRT-PCR experiments.

Name	Forward primers (5'-3')	Reverse primers (5'-3')
<i>Os03g0377100</i>	GCAAGTCCATCGTGGTGAC	AGTAGGAGTGCCCGTTGATG
<i>Os03g0325600</i>	ATTACCTGCAGCGACGATCA	TCGGAGTAGAGAGAGAGCGAT
<i>Os03g0358100</i>	GGGAAGGTGCTAATCGTCGT	CGCAAGAACTGATTGCAGGG
<i>Os03g0289100 (OSK3)</i>	GCATGGTTTCTGTGACACACC	TGACGCAAGATCCAAGCTGT
<i>Os03g0307200</i>	GTGTTCGACAACTACGACCG	CAGACGGATAGCCTCTTGG
<i>Os03g0307300</i>	CGTACTACGGCAACTACGTCA	AGACGGACAGCTCCTTGTTG
<i>Os03g0307800</i>	CCTCCGATTCTCTTCCCAAC	CCCATGGAGACGGCAATCAA
<i>Os03g0308000</i>	GATGAGCATGCACACAAGGC	AGTCCAAATGCAGCCAAGGT
<i>Os03g0316200</i>	GTACAAGCCGATCCCCTGA	AGCTGGACGTTCTCTGGATG
<i>Os03g0321700</i>	ACGGCATTCGGAAGCCTATT	AGATTGGAGCTCAGTGCAGG
<i>Os03g0327600</i>	CACCTTCAAGATCTTCTGCCG	TCGAAGTTGAGGCGGATGTT
<i>Os03g0332000</i>	TGGTCAGGGCTTTGCTATGG	CATCTTCCCTTGCACTCTCGT
<i>Os03g0347500</i>	ATTGGTCTTTGCTGTGGGGA	CCGATAAAACGTCGGCACTG
<i>Os03g0364400</i>	TCGTCTACGAGTTCATGCCG	TCCGAGTCGAGGAGGATGTT
<i>Os03g0370900</i>	CAATGATCGGCAAAGGGCTG	GTTGCTATGGCAATGGCCTG
<i>Os03g0371000</i>	AGGCTCTATGGTCCTGCTCT	CTCCTTGTCCCGGTGCATAA
<i>Os03g0371400</i>	CGTGGACCTGCCTACAAGTT	AGGTGCTATCCTTGGGAGGT
<i>Os03g0292100 (OsPP2C)</i>	GACAGTGGCGAGACTGAACA	TTAGACACAACGAGGCCACC
<i>Os03g0297600 (OsPYL)</i>	AGCACCGCCTCAAGAACTAC	GTCTTGGCGAGAGACTGGAG

<i>Os03g0351100</i>	CCATCTTCCCCCAAGATTCAGA	TAGAACTTGCATTGGCGTGC
<i>Os03g0335200</i>	CCGCAACACTAGAAGACGGT	TGTGCGTGCACCTGTAGTAG
<i>Os03g0355700</i>	GGAGAGGAAGAGGAGGGGAT	TTCACCTTCTTGTCCGGCTT
<i>Os03g0365800</i>	CGACTTCCTAGCGGATGATCT	GCCTCCAACCTCACCCATTA
<i>Os03g0365900</i>	AGAGCGCAAGGACATTACG	GAGAAACCTCGGAATGCAGC
<i>Os03g0369100</i>	TGCAAGAAGTACGAGGGGTG	AGACGACCTTCTCCATGCAC

Table S6. Accession number of genes mentioned in figure 6C.

Specie name	Gene name	Accession number
<i>Oryza sativa</i>	<i>OsGPq3</i>	NM_001402138 XM_015776763
<i>Seteria italica</i>	<i>OSK3</i>	XM_012843081
<i>Panicum hallii</i>	<i>OSK3</i>	XM_025940294
<i>Panicum virgatum</i>	<i>OSK3</i>	XM_039930633
<i>Sorghum bicolor</i>	<i>OSK4</i>	XM_021450779
<i>Zea mays</i>	<i>SNF1</i>	NM_001301590 XM_008671745
<i>Zea mays</i>	<i>OSK4</i>	PWZ55924