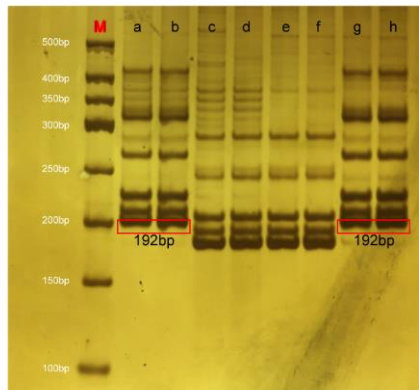


Supplementary material



FigS1. Molecular marker analysis of the *Rht8* gene in the parents used in this study; a, b indicate the samples from Nongda5181; c, d: *JE0124*; e, f: WT; and g, h indicate the positive control sample from wheat variety Jingdong8.

TableS1. The list of genes in the region between marker ph-3 and ph-4.

GeneID	nr_annotation
TraesCS2D01G405300	hypothetical protein F775_02234 [Aegilops tauschii]
TraesCS2D01G405400	PREDICTED: rop guanine nucleotide exchange factor 3-like [Brachypodium distachyon]
TraesCS2D01G405500	hypothetical protein ARALYDRAFT_490270 [Arabidopsis lyrata subsp. lyrata]
TraesCS2D01G405600	acyl-CoA thioesterase protein splice-form 1 [Hordeum vulgare subsp. vulgare]
TraesCS2D01G405700	hypothetical protein F775_32870 [Aegilops tauschii]
TraesCS2D01G405800	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G405900	hypothetical protein TRIUR3_23280 [Triticum urartu]
TraesCS2D01G406000	Subtilisin-like protease [Aegilops tauschii]
TraesCS2D01G406100	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G406200	PREDICTED: 7-deoxyloganic acid glucosyltransferase-like [Brachypodium distachyon]
TraesCS2D01G406300	PREDICTED: subtilisin-like protease [Brachypodium distachyon]
TraesCS2D01G406400	Subtilisin-like protease [Aegilops tauschii]
TraesCS2D01G406500	Subtilisin-like protease [Aegilops tauschii]
TraesCS2D01G406600	Subtilisin-like protease [Aegilops tauschii]
TraesCS2D01G406700	PREDICTED: cactin-like [Brachypodium distachyon]
TraesCS2D01G406800	Anthocyanin regulatory R-S protein [Aegilops tauschii]
TraesCS2D01G406900	Anthocyanin regulatory R-S protein [Aegilops tauschii]
TraesCS2D01G407000	Uncharacterized protein YhcW [Triticum urartu]
TraesCS2D01G407100	hypothetical protein F775_00760 [Aegilops tauschii]
TraesCS2D01G407200	cis-zeatin O-glucosyltransferase 1 [Triticum aestivum]
TraesCS2D01G407300	Putative cis-zeatin O-glucosyltransferase [Aegilops tauschii]
TraesCS2D01G407400	unnamed protein product [Triticum aestivum]
TraesCS2D01G407500	PREDICTED: cis-zeatin O-glucosyltransferase 1-like [Brachypodium distachyon]
TraesCS2D01G407600	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G407700	Putative phospholipid hydroperoxide glutathione peroxidase 6, mitochondrial [Aegilops tauschii]
TraesCS2D01G407800	Putative copper-transporting ATPase 3 [Aegilops tauschii]
TraesCS2D01G407900	Putative serine racemase [Aegilops tauschii]
TraesCS2D01G408000	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G408100	Actin-depolymerizing factor 6 [Aegilops tauschii]
TraesCS2D01G408200	hypothetical protein F775_10031 [Aegilops tauschii]
TraesCS2D01G408300	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G408400	hypothetical protein F775_12482 [Aegilops tauschii]
TraesCS2D01G408500	hypothetical protein F775_01097 [Aegilops tauschii]
TraesCS2D01G408600	hypothetical protein F775_13341 [Aegilops tauschii]
TraesCS2D01G408700	Sugar phosphate exchanger 2 [Aegilops tauschii]
TraesCS2D01G408800	hypothetical protein F775_17685 [Aegilops tauschii]
TraesCS2D01G408900	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G409000	14 kDa proline-rich protein [Aegilops tauschii]
TraesCS2D01G409100	hypothetical protein F775_00850 [Aegilops tauschii]
TraesCS2D01G409200	Vesicle-associated protein 1-3 [Triticum urartu]
TraesCS2D01G409300	Trehalose-phosphate phosphatase [Aegilops tauschii]
TraesCS2D01G409400	Glycogenin-2 [Aegilops tauschii]

TraesCS2D01G409500	Serine carboxypeptidase-like 19 [Triticum urartu]
TraesCS2D01G409600	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G409700	Serine carboxypeptidase-like 19 [Triticum urartu]
TraesCS2D01G409800	Serine carboxypeptidase-like 19 [Aegilops tauschii]
TraesCS2D01G409900	Putative pectinesterase 68 [Aegilops tauschii]
TraesCS2D01G410000	PREDICTED: uncharacterized protein LOC100824047 [Brachypodium distachyon]
TraesCS2D01G410100	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G410200	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G410300	PREDICTED: zinc finger protein ZAT1-like [Brachypodium distachyon]
TraesCS2D01G410400	hypothetical protein F775_11343 [Aegilops tauschii]
TraesCS2D01G410500	hypothetical protein F775_00853 [Aegilops tauschii]
TraesCS2D01G410600	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G410700	PREDICTED: squamosa promoter-binding-like protein 7 [Brachypodium distachyon]
TraesCS2D01G410800	hypothetical protein F775_02366 [Aegilops tauschii]
TraesCS2D01G410900	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G411000	hypothetical protein F775_28155 [Aegilops tauschii]
TraesCS2D01G411100	hypothetical protein F775_25495 [Aegilops tauschii]
TraesCS2D01G411200	unnamed protein product [Triticum aestivum]
TraesCS2D01G411300	unnamed protein product [Triticum aestivum]
TraesCS2D01G411400	Aquaporin TIP2-3 [Aegilops tauschii]
TraesCS2D01G411500	Putative aquaporin TIP5-1 [Aegilops tauschii]
TraesCS2D01G411600	hypothetical protein F775_19987 [Aegilops tauschii]
TraesCS2D01G411700	hypothetical protein F775_04212 [Aegilops tauschii]
TraesCS2D01G411800	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G411900	PREDICTED: carotenoid cleavage dioxygenase 7, chloroplastic [Brachypodium distachyon]
TraesCS2D01G412000	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G412100	Protein argonaute 7 [Aegilops tauschii]
TraesCS2D01G412200	OSIGBa0134H18.7 [Oryza sativa Indica Group]
TraesCS2D01G412300	PREDICTED: ethylene-responsive transcription factor ERF039-like [Brachypodium distachyon]
TraesCS2D01G412400	TmCBF7 [Triticum monococcum]
TraesCS2D01G412500	PREDICTED: myb-related protein 305 [Brachypodium distachyon]
TraesCS2D01G412600	putative isoaspartyl peptidase/L-asparaginase 3 [Triticum urartu]
TraesCS2D01G412600	putative isoaspartyl peptidase/L-asparaginase 3 [Triticum urartu]
TraesCS2D01G412700	hypothetical protein TRIUR3_09832 [Triticum urartu]
TraesCS2D01G412800	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G412900	Homeobox-leucine zipper protein HOX17 [Aegilops tauschii]
TraesCS2D01G413000	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G413100	hypothetical protein ZEAMMB73_313798 [Zea mays]
TraesCS2D01G413200	histone H4 [Zea mays]
TraesCS2D01G413300	hypothetical protein ZEAMMB73_313798 [Zea mays]
TraesCS2D01G413400	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G413500	PREDICTED: uncharacterized protein At3g06530 [Brachypodium distachyon]
TraesCS2D01G413600	NBS-LRR disease resistance protein homologue [Hordeum vulgare]
TraesCS2D01G413700	predicted protein [Hordeum vulgare subsp. vulgare]

TraesCS2D01G413800	hypothetical protein F775_02094 [Aegilops tauschii]
TraesCS2D01G413900	Peptide transporter PTR5 [Aegilops tauschii]
TraesCS2D01G414000	Disease resistance protein RPM1 [Aegilops tauschii]
TraesCS2D01G414100	Disease resistance protein RPM1 [Aegilops tauschii]
TraesCS2D01G414200	Nudix hydrolase 8 [Aegilops tauschii]
TraesCS2D01G414300	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G414400	hypothetical protein F775_01388 [Aegilops tauschii]
TraesCS2D01G414500	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G414600	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G414700	hypothetical protein F775_19599 [Aegilops tauschii]
TraesCS2D01G414800	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G414900	hypothetical protein ZEAMMB73_313798 [Zea mays]
TraesCS2D01G415000	Histone H4 [Aegilops tauschii]
TraesCS2D01G415100	hypothetical protein F775_05090 [Aegilops tauschii]
TraesCS2D01G415200	Autophagy-related protein 7 [Aegilops tauschii]
TraesCS2D01G415300	Speckle-type POZ protein-like protein [Aegilops tauschii]
TraesCS2D01G415400	Speckle-type POZ protein [Aegilops tauschii]
TraesCS2D01G415500	hypothetical protein SORBIDRAFT_06g028640 [Sorghum bicolor]
TraesCS2D01G415600	LRR receptor-like protein kinase 1 [Triticum aestivum]
TraesCS2D01G415700	LRR receptor-like protein kinase 2 [Triticum aestivum]
TraesCS2D01G415800	PREDICTED: probable LRR receptor-like serine/threonine-protein kinase At1g56130 [Brachypodium distachyon]
TraesCS2D01G415900	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G416000	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G416100	Protein FAR-RED ELONGATED HYPOCOTYL 3 [Aegilops tauschii]
TraesCS2D01G416200	PREDICTED: uncharacterized protein At4g15545-like [Brachypodium distachyon]
TraesCS2D01G416300	hypothetical protein TRIUR3_07057 [Triticum urartu]
TraesCS2D01G416400	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G416500	Protein argonaute 2 [Triticum urartu]
TraesCS2D01G416600	hypothetical protein F775_43416 [Aegilops tauschii]
TraesCS2D01G416700	hypothetical protein F775_43416 [Aegilops tauschii]
TraesCS2D01G416800	hypothetical protein F775_10677 [Aegilops tauschii]
TraesCS2D01G416900	hypothetical protein F775_18174 [Aegilops tauschii]
TraesCS2D01G417000	Protein argonaute 2 [Aegilops tauschii]
TraesCS2D01G417100	hypothetical protein F775_09653 [Aegilops tauschii]
TraesCS2D01G417200	DNA-directed RNA polymerase III subunit RPC9 [Triticum urartu]
TraesCS2D01G417300	hypothetical protein F775_17967 [Aegilops tauschii]
TraesCS2D01G417400	PREDICTED: cysteine-rich and transmembrane domain-containing protein A-like [Brachypodium distachyon]
TraesCS2D01G417500	hypothetical protein F775_30470 [Aegilops tauschii]
TraesCS2D01G417800	Lecithine-cholesterol acyltransferase-like 4 [Triticum urartu]
TraesCS2D01G417900	hypothetical protein F775_09378 [Aegilops tauschii]
TraesCS2D01G418000	Disease resistance protein RPM1 [Aegilops tauschii]
TraesCS2D01G418100	hypothetical protein F775_44065 [Aegilops tauschii]
TraesCS2D01G418200	hypothetical protein F775_03448 [Aegilops tauschii]
TraesCS2D01G418200	hypothetical protein F775_03448 [Aegilops tauschii]

TraesCS2D01G418300	hypothetical protein TRIUR3_14546 [Triticum urartu]
TraesCS2D01G418400	aminotransferase [Triticum aestivum]
TraesCS2D01G418500	Fruit bromelain [Aegilops tauschii]
TraesCS2D01G418600	Fruit bromelain [Triticum urartu]
TraesCS2D01G418700	Cytochrome P450 89A2 [Aegilops tauschii]
TraesCS2D01G418800	MADS-box transcription factor 31 [Aegilops tauschii]
TraesCS2D01G418900	Peroxisomal 2,4-dienoyl-CoA reductase [Aegilops tauschii]
TraesCS2D01G419000	Putative potassium transporter 11 [Aegilops tauschii]
TraesCS2D01G419100	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G419200	hypothetical protein F775_12123 [Aegilops tauschii]
TraesCS2D01G419300	hypothetical protein F775_12123 [Aegilops tauschii]
TraesCS2D01G419400	hypothetical protein F775_05668 [Aegilops tauschii]
TraesCS2D01G419500	hypothetical protein F775_05669 [Aegilops tauschii]
TraesCS2D01G419600	PREDICTED: uncharacterized protein LOC102720900 [Oryza brachyantha]
TraesCS2D01G419700	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G419800	Zeamatin [Aegilops tauschii]
TraesCS2D01G419900	hypothetical protein TRIUR3_09431 [Triticum urartu]
TraesCS2D01G420000	hypothetical protein TRIUR3_29689 [Triticum urartu]
TraesCS2D01G420100	SKP1-like protein 1B [Aegilops tauschii]
TraesCS2D01G420200	hypothetical protein F775_06252 [Aegilops tauschii]
TraesCS2D01G420300	hypothetical protein F775_01688 [Aegilops tauschii]
TraesCS2D01G420400	ABC transporter C family member 3 [Aegilops tauschii]
TraesCS2D01G420500	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G420600	hypothetical protein TRIUR3_17933 [Triticum urartu]
TraesCS2D01G420700	hypothetical protein TRIUR3_21489 [Triticum urartu]
TraesCS2D01G420800	hypothetical protein F775_15573 [Aegilops tauschii]
TraesCS2D01G420900	Pathogenesis-related protein 1 [Aegilops tauschii]
TraesCS2D01G421000	unnamed protein product [Triticum aestivum]
TraesCS2D01G421100	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G421200	PREDICTED: UDP-N-acetylglucosamine diphosphorylase 2-like [Brachypodium distachyon]
TraesCS2D01G421300	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G421400	hypothetical protein F775_29476 [Aegilops tauschii]
TraesCS2D01G421500	predicted protein [Hordeum vulgare subsp. vulgare]
TraesCS2D01G421600	Putative LRR receptor-like serine/threonine-protein kinase [Aegilops tauschii]
TraesCS2D01G421700	hypothetical protein F775_01470 [Aegilops tauschii]
TraesCS2D01G421800	hypothetical protein F775_29140 [Aegilops tauschii]