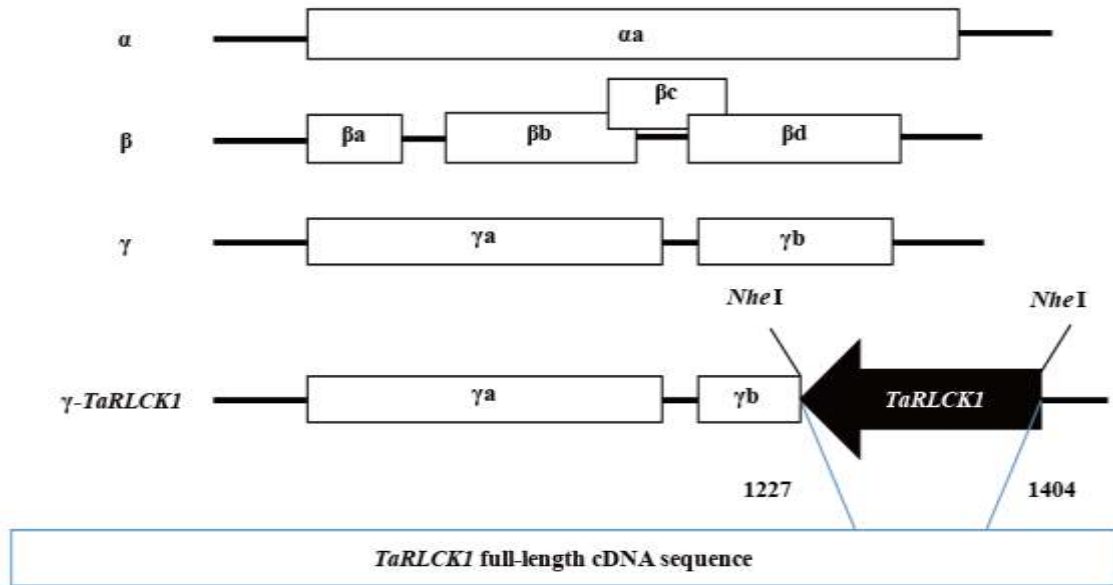
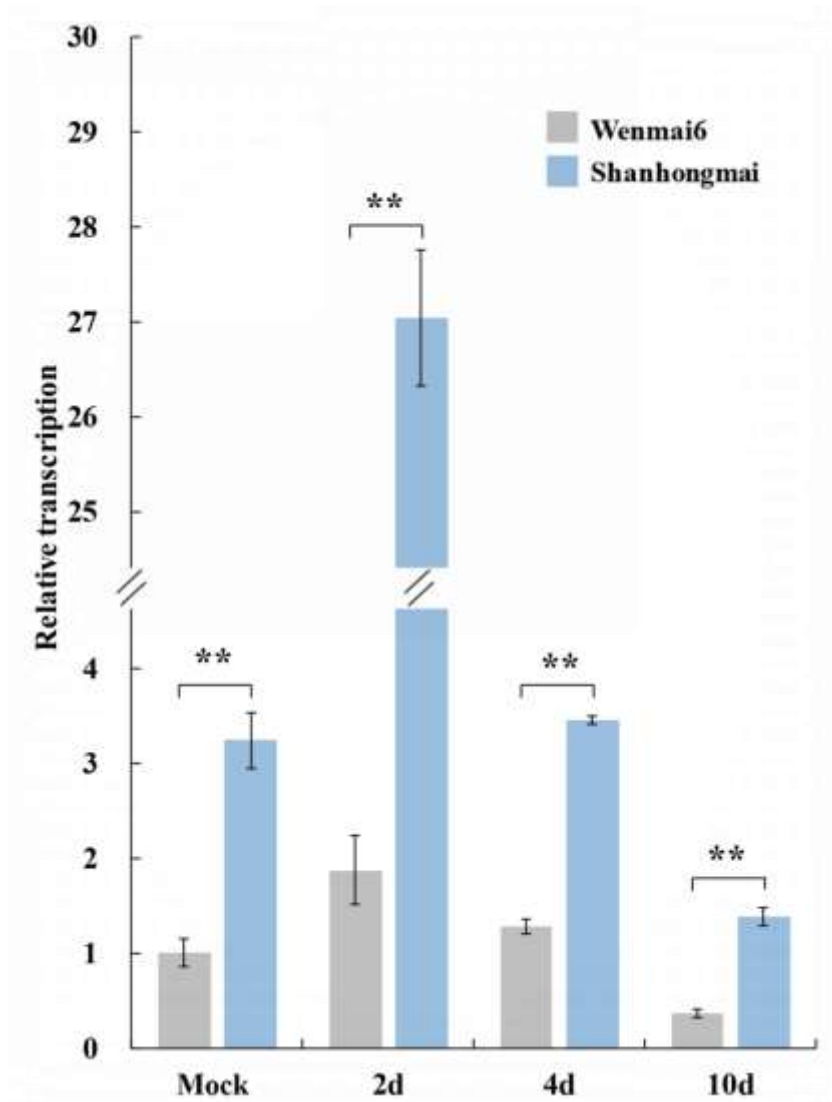


## Appendix A Primers and their sequences in this study

| Primer name          | Sequence of gene-specific primer    | Usage   |
|----------------------|-------------------------------------|---|
| TaRLCK1-A-F1         | 5'-CAGGGGGTCCTGATTTGGG-3'           |   |
| TaRLCK1-A-F2         | 5'-GCTGATTTGGGAGGTCTGCT-3'          | Amplification of full-length cDNA of <i>TaRLCK1</i> |
| TaRLCK1-A-R1         | 5'-GGTCTTGGTTTAACAGGGTGC-3'         |   |
| TaRLCK2-A-R2         | 5'-CATTGATAAATGAAGTGACA-3'          |   |
| TaRLCK1- $\gamma$ -F | 5'-TACGCTAGCCTGCAGAGAAAGCCGAGCAG-3' | Construction of vector $\gamma$ - <i>TaRLCK1</i>    |
| TaRLCK1- $\gamma$ -R | 5'-GACGCTAGCTCTTCGCAGATCACCCTCAT-3' |   |
| TaRLCK1-Q-F          | 5'-GCGAGGGTGAGATTCTGGAG-3'          | RT-qPCR for <i>TaRLCK1</i> transcript               |
| TaRLCK1-Q-R          | 5'-CTGGCTTAGTTGGGGTGAGG-3'          |   |
| BSMV-CP-F            | 5'-TGA CTGCTAAGGGTGGAGGA-3'         | Detection of BSMV virus                             |
| BSMV-CP-R            | 5'-CGGTTGAACATCACGAAGAGT-3'         |   |
| RcActin-F            | 5'-GCATCCACGAGACCACTTAC-3'          | Detection of <i>R. cerealis</i>                     |
| RcActin-R            | 5'-GCGTCCCGCTGCTCAAGAT-3'           |   |
| TaActin-F            | 5'-GGAATCCATGAGACCACCTAC-3'         | Internal control for RT-qPCR                        |
| TaActin-R            | 5'-GACCCAGACA AACTCGCAAC-3'         |   |
| CAT1-QF              | 5'-CAAGGGCTTCTTCGAGGTCAC-3'         | RT-qPCR for <i>CAT1</i> transcript                  |
| CAT1-QR              | 5'-TG TAGAAGGTCCACTCCGGGTAG-3'      |   |
| RBOH-QF              | 5'-ATGTTGCGCAACTTGGTGACT-3'         | RT-qPCR for <i>RBOH</i> transcript                  |
| RBOH-QR              | 5'-CGTCTGCTCTAAGAAGACCACTTTT-3'     |   |



**Appendix B** Scheme of genomic RNAs of the barley stripe mosaic virus (BSMV) and the construct *BSMV:TaRLCK1* of the recombinant virus expressing the wheat (*Triticum aestivum*) gene *TaRLCK1*. The orientation of the *TaRLCK1* insert is indicated by dark boxes.



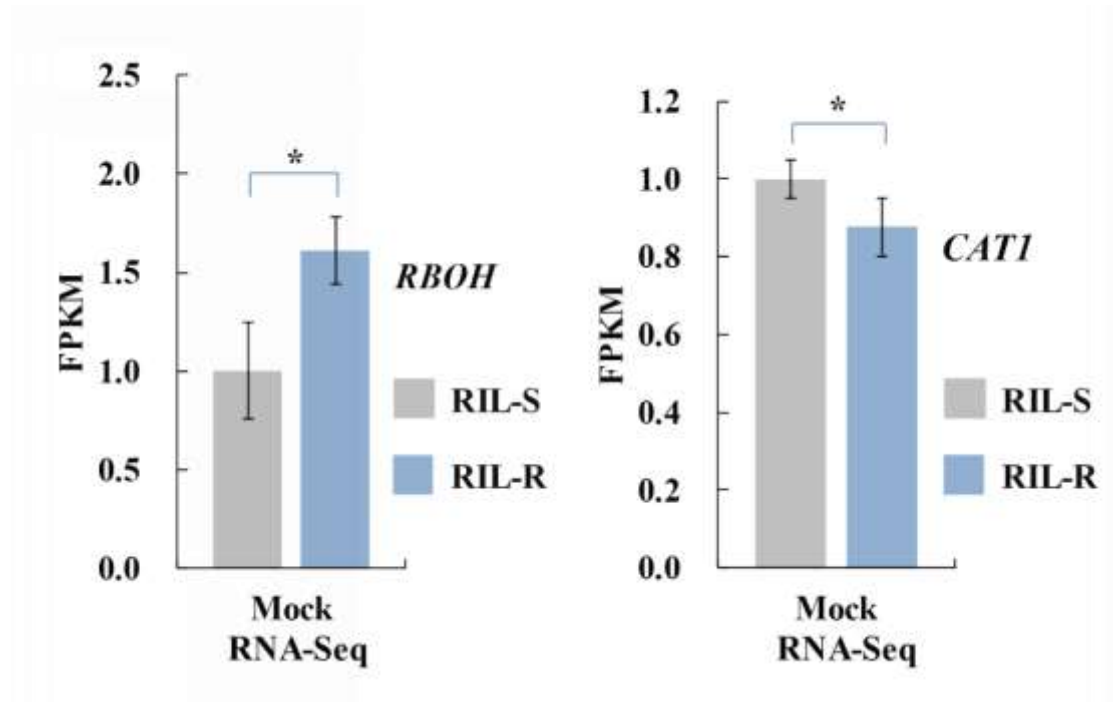
**Appendix C** RT-qPCR analysis of *TaRLCK1* transcription in the resistant wheat cv. Shanhongmai and susceptible wheat cv. Wenmai 6 at 0 (mock), 2 dpi, 4 dpi and 10 dpi with *R. cerealis* WK207. The transcriptional level of *TaRLCK1B* in susceptible wheat Wenmai 6 is set to 1. (*t*-test: \*\* $p < 0.01$ ).

|             |  |     |
|-------------|--|-----|
| CI12633     | CCGTGCGAGTGGGATCACATAGCAGAAATCTACTAGAGAGATGCGTCAAGG  | 50  |
| Shanhongmai | CCGTGCGAGTGGGATCACATAGCAGAAATCTACTAGAGAGATGCGTCAAGG  | 50  |
| Yangmai 9   | CCGGCCGAGTGGGATCACATAGCATAAATCTACTAGAGAGATGCGTTGAGG  | 50  |
| Wenmai 6    | CCGGTTCGAGTGGGATCACATAGCATAAATCTACTAGAGAGATGCGTTGAGG | 50  |
| Consensus   | ccg cgagtgggatcacatagca aatctactagagagatgcggt agg    |     |
|             |  |     |
| CI12633     | TGTAATGTATGAGTGGT.....GATCTGCGAAG                    | 78  |
| Shanhongmai | TGTAATGTATGAGTGGT.....GATCTGCGAAG                    | 78  |
| Yangmai 9   | TGTAATGTATGATGGTATAATAGGGTTTTAGAGT..TGATCTGCGAAG     | 98  |
| Wenmai 6    | TGTAATGTATGATGGTATAATAGGG.TTTTAGAGTGGTATGATCTGCGAAG  | 99  |
| Consensus   | tgtaatgtatg tggt ..... gatctgccaag                   |     |
|             |  |     |
| CI12633     | AGGCAGCGGATTTGTGAATGTTTTGTGCCCGTGTGTAGGGATGTATCTT    | 128 |
| Shanhongmai | AGGCAGCGGATTTGTGAATGTTTTGTGCCCGTGTGTAGGGATGTATCTT    | 128 |
| Yangmai 9   | AGGCAGCGGATTTGTGAATGTTTTGTGCCGTGTGTGTAGGGCTGTACCTT   | 148 |
| Wenmai 6    | AGGCAGCGGATTTGTGAATGTTTTGTGCCGTGTGTGTAGGGCTGTACCTT   | 149 |
| Consensus   | aggcagcggatTTgtgaatgTTTTgtgcc gtgtttagagg tgta ctt   |     |
|             |  |     |
| CI12633     | TGCAGCTTCTAGTGTGGTATGTACAGCTTGTATCTATCCGGTTGTAGCT    | 178 |
| Shanhongmai | TGCAGCTTCTAGTGTGGTATGTACAGCTTGTATCTATCCGGTTGTAGCT    | 178 |
| Yangmai 9   | TGCAGCTTCTAGTGTGGTATGTACAGCTTGTATCTATCCGGTTGTAGCT    | 198 |
| Wenmai 6    | TGCAGCTTCTAGTGTGGTATGTACAGCTTGTATCTATCCGGTTGTAGCT    | 199 |
| Consensus   | tgcagcttctagtgttggatgtacagcttgtatctatccggttgtagct    |     |
|             |  |     |
| CI12633     | A.....GTCTGTATGTAGTCCCTTTT.GTGTATGCCTGATTGCTTTGGTTC  | 222 |
| Shanhongmai | A.....GTCTGTATGTAGTCCCTTTT.GTGTATGCCTGATTGCTTTGGTTC  | 222 |
| Yangmai 9   | A.....GTCTGTATGTAGTATTTTTGTCAATGCCTGGTTGCTTTGGTTC    | 243 |
| Wenmai 6    | TCTAGTGTCTGTATGTAGTCCCTTTTGTCAATGCCTGGTTGCTTTGGTTC   | 249 |
| Consensus   | gtctgtatgtagt tttt gt atgcctg ttgctttggttc           |     |
|             |  |     |
| CI12633     | TGACTTAAGGTCCAGAGG                                   | 240 |
| Shanhongmai | TGACTTAAGGTCCAGAGG                                   | 240 |
| Yangmai 9   | TGACTTAAGGTCCAGAGG                                   | 261 |
| Wenmai 6    | TGACTTAAGGTAAGGCC                                    | 267 |
| Consensus   | tgacttaaggt g  |     |

#### Appendix D Alignment of 3' UTR sequences of *TaRLCK1B* in resistant wheat cvs.

CI12633 and Shanhongmai, and *TaRLCK1A* in susceptible cvs. Yangmai 9 and

Wenmai 6. The software DANMAN was used to perform the sequence alignment.



**Appendix E** RNA-Seq data of *RBOH* and *CAT1* transcription in the resistant RILs than in susceptible RILs.