

File Name: Supplementary Data 1

Description: Marker genotypes of the recombinant inbred lines to construct the basic map of Rph3.

File Name: Supplementary Data 2

Description: The oligo sequences of markers used for constructing the high-resolution map of the gene.

File Name: Supplementary Data 3

Description: Marker genotypes for constructing the high-resolution map of the gene.

File Name: Supplementary Data 4

Description: The list of differentially expressed genes identified in the resistance material challenged with Rph3-avirulent pathotype of *Puccinia hordei*.

File Name: Supplementary Data 5

Description: PCR primers used for amplification and re-sequencing of 8.5kb, the Rph3 locus in resistant haplotype.

File Name: Supplementary Data 6

Description: The presence/absence of the Rph3 gene in the barley core collection determined by molecular markers and multi-pathotype test.

File Name: Supplementary Data 7

Description: List of barley accession of IPK database carrying Rph3 segment detected by GBS marker landing on the gene.

File Name: Supplementary Data 8

Description: List of Wild Barley Diversity Collection (WBDC) provided by University of Minnesota.