

1 **Description of Additional Supplementary files**

2 Supplementary Data 1 Transcriptome analysis of *OsHsf* genes upon HS and pathogen attack.

3 Supplementary Data 2 Annotation and characterization of peaks in OsHSFA4d DAP-seq analysis.

4 Supplementary Data 3 Identification of candidate target genes of OsHSFA4d in DAP-seq data via
5 functional annotation.

6 Supplementary Data 4 LC-MS/MS identification of candidate interacting proteins specifically
7 pulled down by GST-OsHSFA4d.

8 Supplementary Data 5 Comparative analysis of K76 and D171 residues in OsCDPK24 orthologues.

9 Supplementary Data 6 LC-MS/MS identification of phosphorylated residues in OsHSFA4d
10 targeted by OsCDPK24.

11 Supplementary Data 7 LC-MS/MS identification of phosphorylated residues in OsHSFA4d-S146A
12 mutant targeted by OsCDPK24.

13 Supplementary Data 8 ELISA-based determination of the specificity of anti-pS146 antibody.

14 Supplementary Data 9 Comparative analysis of S146 residues in OsHSFA4d orthologues.

15 Supplementary Data 10 Genomic diversity of natural variation in *OsHsfA4d* across 33 high-quality
16 rice genomes.

17 Supplementary Data 11 Oligonucleotides and vectors used in this study.

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