

Description of additional Supplementary Files

Supplementary Data 1: The SRA number of wild rice RNA-seqs and the expressed gene number of the wild rice assemblies.

Supplementary Data 2: Summary of the repeat sequence in 13 wild rice species genomes.

Supplementary Data 3: The size of each LTR subfamilies in *Oryza* species.

Supplementary Data 4: Summary of the gene number overlapped with LTR subfamily in rice super pangenome.

Supplementary Data 5: The sequence of repeat unit of centromere in rice super pangenome.

Supplementary Data 6: The number of gene effected by LTR in centromeres within the *Oryza* species.

Supplementary Data 7: The location of each centromere distribution on the chromosomes in *Oryza* super pangenome.

Supplementary Data 8: Summary of the structural variation number and size within wild rice species.

Supplementary Data 9: Summary of the distribution of SVs in the location of gene structure on the rice super pangenome.

Supplementary Data 10: List of 207 gene CNVs associated with important agronomic traits.

Supplementary Data 11: The cluster of R genes within rice super pangenome.