## **Description of Additional Supplementary Files**

**Supplementary Data 1.** List of Log2 2.0-fold change upregulated genes in mature endosperm and embryo (endosperm-preferred genes).

**Supplementary Data 2.** List of Log2 2.0-fold change downregulated genes in mature endosperm and embryo (embryo-preferred genes).

**Supplementary Data 3.** List of epigenetic genes and all published imprinted genes in rice.

Supplementary Data 4. List of all 23-24 nt sRNA loci in PB1 endosperm.

**Supplementary Data 5.** List of all 23-24 nt sRNA loci in osclsy3-kd endosperm.

**Supplementary Data 6.** List of CLSY3- dependent 23-24 nt sRNA loci.

Supplementary Data 7. List of CLSY3 dependent sRNA loci with CHH methylation status.

**Supplementary Data 8.** List of ChIP-seq peaks in CLSY3 tagged lines.

**Supplementary Data 9.** List of published rice siren loci with their normalized expression.

Supplementary Data 10. List of log21.5-fold change upregulated genes in osclsy3-kd endosperm.

**Supplementary Data 11.** List of log21.5-fold change downregulated genes in osclsy3-kd endosperm.

**Supplementary Data 12.** List of genes which overlapped with CLSY3-dependent 23-24 nt sRNA loci.

**Supplementary Data 13.** List of seed development-associated genes used in this study.

Supplementary Data 14. List of imprinted genes and their expression in osclsy3-kd endosperm.

**Supplementary Data 15.** Expression of maternally and paternally expressed imprinted sRNA loci in osclsy3-kd and osnrpd1-kd endosperm.

**Supplementary Data 16.** List of imprinted genes adjacent to imprinted sRNA loci and their expression in osclsy3-kd endosperm.