

## Description of Additional Supplementary Files

**File name:** Supplementary Data 1-11

**Description:**

**Supplementary Data 1:** Summary of the experimental conditions of the five scRNAseq datasets of mouse mammary glands.

**Supplementary Data 2:** Statistics and preprocessing parameters for scRNAseq datasets of mouse and human normal mammary glands obtained in 10X platforms.

**Supplementary Data 3:** Summary of the preprocessing of scRNAseq datasets of mouse and human normal mammary glands.

**Supplementary Data 4:** Marker genes for the clusters identified in the mouse integrated data.

**Supplementary Data 5:** Top gene signatures in mammary lineage differentiations.

**Supplementary Data 6:** Top correlated genes for the four distinct differentiation status in the mouse mammary epithelium.

**Supplementary Data 7:** Correlation of the RNA-based features with the four distinct differentiation status in the mouse mammary epithelium.

**Supplementary Data 8:** Top correlated genes for the three differentiated status in the human breast epithelium.

**Supplementary Data 9:** Correlation of the RNA-based features with the three differentiated status in the human breast epithelium.

**Supplementary data 10:** Common and specific lineage genes in mice and humans.

**Supplementary Data 11:** Results of GSVA analysis for common and species-specific lineage genes.