

## **Description of Additional Supplementary Files**

**Supplementary Data 1:** Experimental details for the mouse samples.

**Supplementary Data 2:** Annotation markers for the mouse brain regions.

**Supplementary Data 3:** JEV-positive rates (%) of different brain regions, based on Stereo-seq bin35 Table.

**Supplementary Data 4:** Cell types annotated in the mouse brain and their marker genes.

**Supplementary Data 5:** JEV-positive rates (%) of different cell types in infected mouse brains, based on Stereo-seq bin35 Table.

**Supplementary Data 6:** JEV-positive rates (%) of different cell types divided by the total number of brain bins in each infected mouse brain, based on Stereo-seq bin35 Table.

**Supplementary Data 7:** DEGs between control and infection groups.

**Supplementary Data 8:** Gene sets used for GSVA and gene signature score analysis.

**Supplementary Data 9:** Details of 588 host proteins predicted to interact with JEV proteins.

**Supplementary Data 10:** Enrichment pathway information for the 46 host proteins that are predicted to interact with all the virus proteins.

**Supplementary Data 11:** The host transcriptional factors that are predicted to interact with JEV proteins and their related target genes.

**Supplementary Data 12:** Primer sets for RT-qPCR detection of murine genes.