**Virologica Sinica**

**Supplementary Data**

**Persistent inflammation and neuronal loss in the mouse brain induced by a modified form of attenuated herpes simplex virus type I**

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Figure S1. LMR-αΔpA infection activated greater levels of immune response. **A** Heatmap showing changes in the expression of immune response-associated genes in HSV-1 infected mice brains. Adjust *P*-value ≤ 0.05 and absolute log2 fold change ≥ 2 were used as thresholds. **B** MHC II (biolegend, clone M5/114.15.2) staining showed the activation of antigen presenting cells in 5dpi mouse brain. The yellow arrow indicates the positive staining signal. **C** RT-qPCR verified the transcription changes of selected genes in Fig. 2F. Data are displayed as mean ± sd. (\*\**P* < 0.01 using two-tailed *t*-tests).

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Figure S2. LMR-αΔpA has higher transcriptional activity in LAT region at 5 days post infection. **A** Coverage profiles of LAT region from each infection group. The arrows with red border were annotated the significant transcriptional differences. **B** LAT intron vs viral genome copies ratio among the three viruses across all time points. The dotted line shows a linear data fitting.



Figure S3. LMR-αΔpA infection had relatively stable transcriptional activities of *ICP22* and *ICP27* genes. Coverage profiles of ICP22 (**A**) and ICP27 **(B**) region from each infection group. The arrows with red border were annotated the significant transcriptional differences.

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Figure S4. LMR-αΔpA infection inhibited nervous system related genes and led to continuous activation of immune genes. RT-qPCR verified the transcription changes of selected genes in Fig. 6C. GO: BP terms were labeled at the top of each panel.

Table S1. List of PCR primers.

|  |  |
| --- | --- |
| **Target**  | **Primer sequence**  |
| LAT intron  | Fwd:  | CCCACGTACTCCAAGAAGGC  |
| Rev: | AGACCCAAGCATAGAGAGCCAG  |
| Probe | CCCACCCCGCCTGTGTTTTTGTG |
| ICP27 | Fwd:  | CGCCAAGAAAATTTCATCGAG  |
| Rev:  | ACATCTTGCACCACGCCAG  |
| Probe: | CTGGCCTCCGCCGACGAGACG |
| Cdk2 | Fwd: | ATGGAGAACTTCCAAAAGGTGG |
| Rev: | CAGTCTCAGTGTCGAGCCG |
| E2f2 | Fwd: | ACGGCGCAACCTACAAAGAG |
| Rev: | GTCTGCGTGTAAAGCGAAGTG |
| Pole | Fwd: | TCAGCACTCAAGCGTCTGG |
| Rev: | AAATACGGCATATAGGGCAAGG |
| Pabpc1  | Fwd:  | CCTCCTTCAGGTTACTTCATGGC  |
| Rev: | GGACTTGGTCTTAGTTGAGCAAT  |
| Eif4ebp1  | Fwd:  | GGGGACTACAGCACCACTC  |
| Rev: | GTTCCGACACTCCATCAGAAAT  |
| Eif2ak2  | Fwd:  | ATGCACGGAGTAGCCATTACG  |
| Rev: | TGACAATCCACCTTGTTTTCGT  |
| Casp8  | Fwd:  | TGCTTGGACTACATCCCACAC  |
| Rev: | GTTGCAGTCTAGGAAGTTGACC  |
| Tnfsf10  | Fwd:  | ATGGTGATTTGCATAGTGCTCC  |
| Rev: | GCAAGCAGGGTCTGTTCAAGA  |
| Fas  | Fwd:  | GCGGGTTCGTGAAACTGATAA  |
| Rev: | GCAAAATGGGCCTCCTTGATA  |
| Lrrc4b  | Fwd:  | ATCCCTGTCAACACCCGCTA  |
| Rev: | CCCACCTCGATCTTTCGCAC  |
| Nrg1  | Fwd:  | TTCCCATTCTGGCTTGTCTAGT  |
| Rev: | CCAGGGTCAAGGTGGGTAG  |
| Ripk1  | Fwd:  | GACAGACCTAGACAGCGGAG  |
| Rev: | CCAGTAGCTTCACCACTCGAC  |
| Adam17  | Fwd:  | ACCACTTTGGTGCCTTTCGT  |
| Rev: | GTCGCAGACTGTAGATCCCTT  |
| Cpne3  | Fwd:  | GCCCAGTGTGTCACGAAGG  |
| Rev: | AAGGGTCCGACTTTGATGTTAC  |
| Rock1  | Fwd:  | GACTGGGGACAGTTTTGAGAC  |
| Rev: | ATCCAAATCATAAACCAGGGCAT  |
| Tyrobp  | Fwd:  | CCCAAGATGCGACTGTTCTTC  |
| Rev: | GTCCCTTGACCTCGGGAGA  |
| Lyn  | Fwd:  | ATTGTGGTGGCCTTATACCCT  |
| Rev: | ACCATTCCCCATGCTCTTCTA  |
| Gtf2b  | Fwd:  | ACCAGCCGTTTGGATGCTC  |
| Rev: | AGATCATATCGCCAGCTCTGTA  |
| Zfp711  | Fwd:  | AAGTCTTGGATTGCACACTTCA  |
| Rev: | GGCCATGATCGAGAGTTATCCC  |
| Havcr2  | Fwd:  | TCAGGTCTTACCCTCAACTGTG  |
| Rev: | GGCATTCTTACCAACCTCAAACA  |
| Ifngr1  | Fwd:  | GTGGAGCTTTGACGAGCACT  |
| Rev: | ATTCCCAGCATACGACAGGGT  |