Supplementary Material

Supplementary Figures

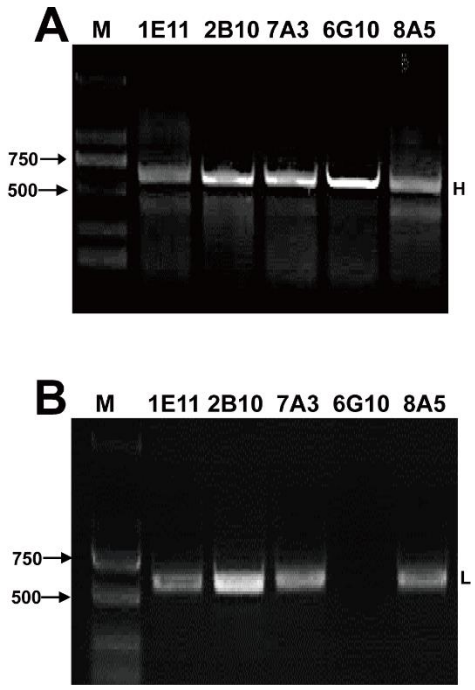

Figure S1. RACE-PCR for antibody variable sequences.

A-B: Variable region fragments obtained from six human-mouse chimeric antibodies via nested PCR.

A

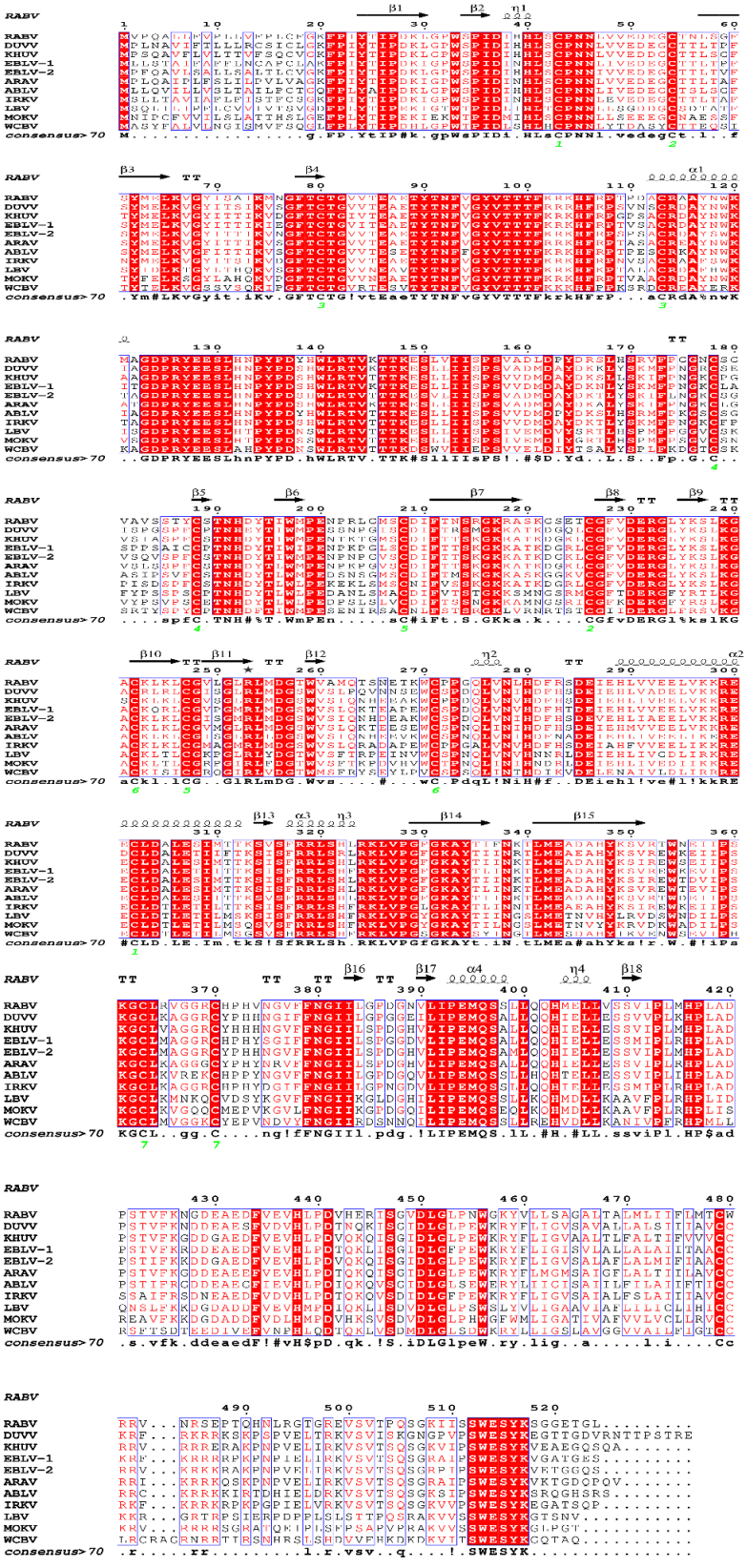

Figure S2. RABV-G homology analysis

A: Conservation analysis of RABV-G epitope region sequences of 11 species of the Lyssavirus genus.

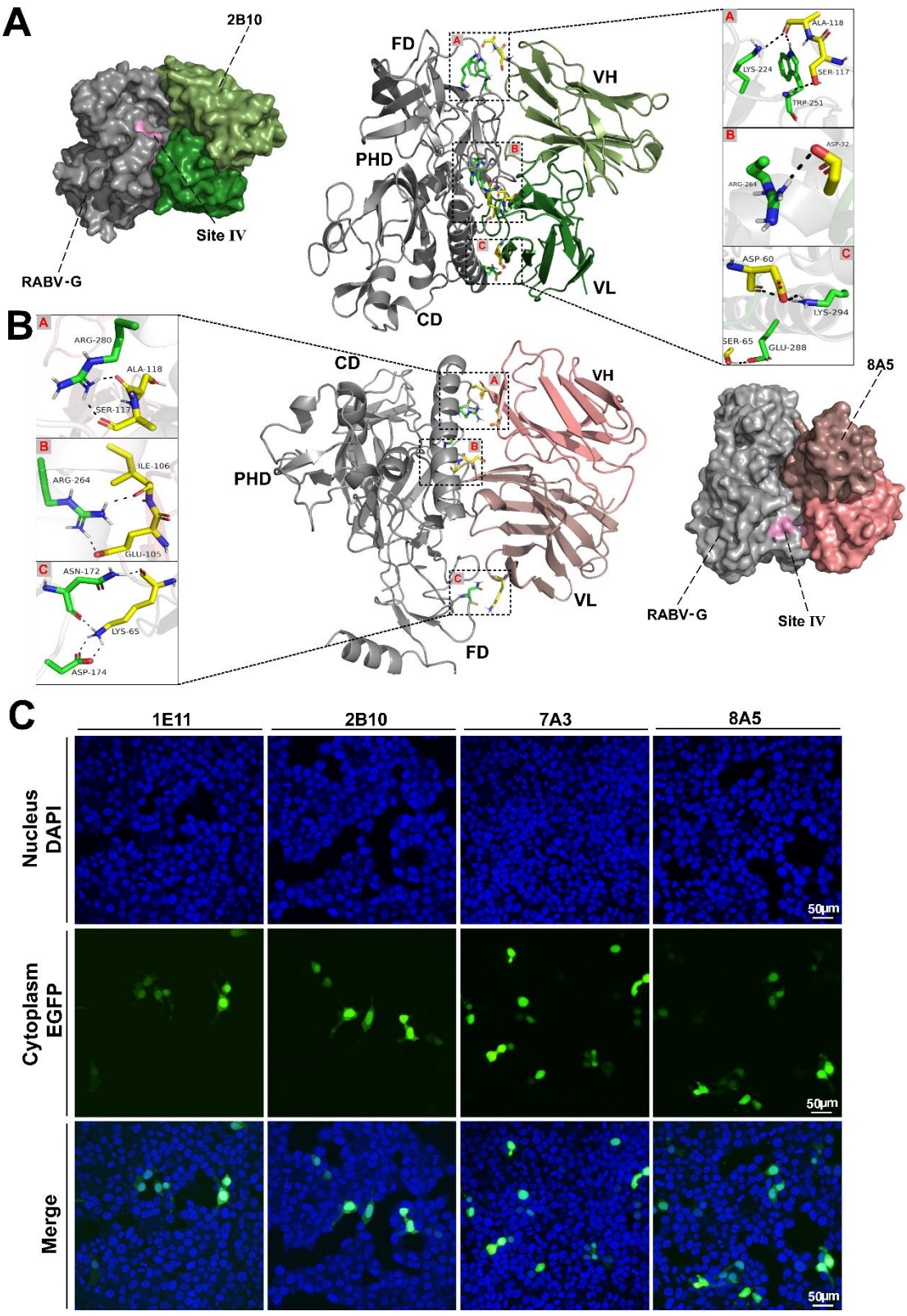

Figure S3. Structure basis of RABV-G neutralization by different antibodies

A: Binding footprint of antibody 2B10 heavy chain (light green) and light chain (dark green) with RABV-G (gray) epitope IV (pink). For clarity, it is represented with a band diagram, with the interacting areas outlined in black dashed lines. The right side shows an enlarged view of binding

regions A, B, and C, with black dashed lines indicating the formed hydrogen bonds.

B: Binding footprint of antibody 8A5 heavy chain (pink) and light chain (brown) with RABV-G (gray) epitope IV (pink). For clarity, it is represented with a band diagram, with the interacting areas outlined in black dashed lines. The left side shows an enlarged view of binding regions A, B, and C, with black dashed lines indicating the formed hydrogen bonds.

C: The ability of four antibodies to inhibit syncytium formation.

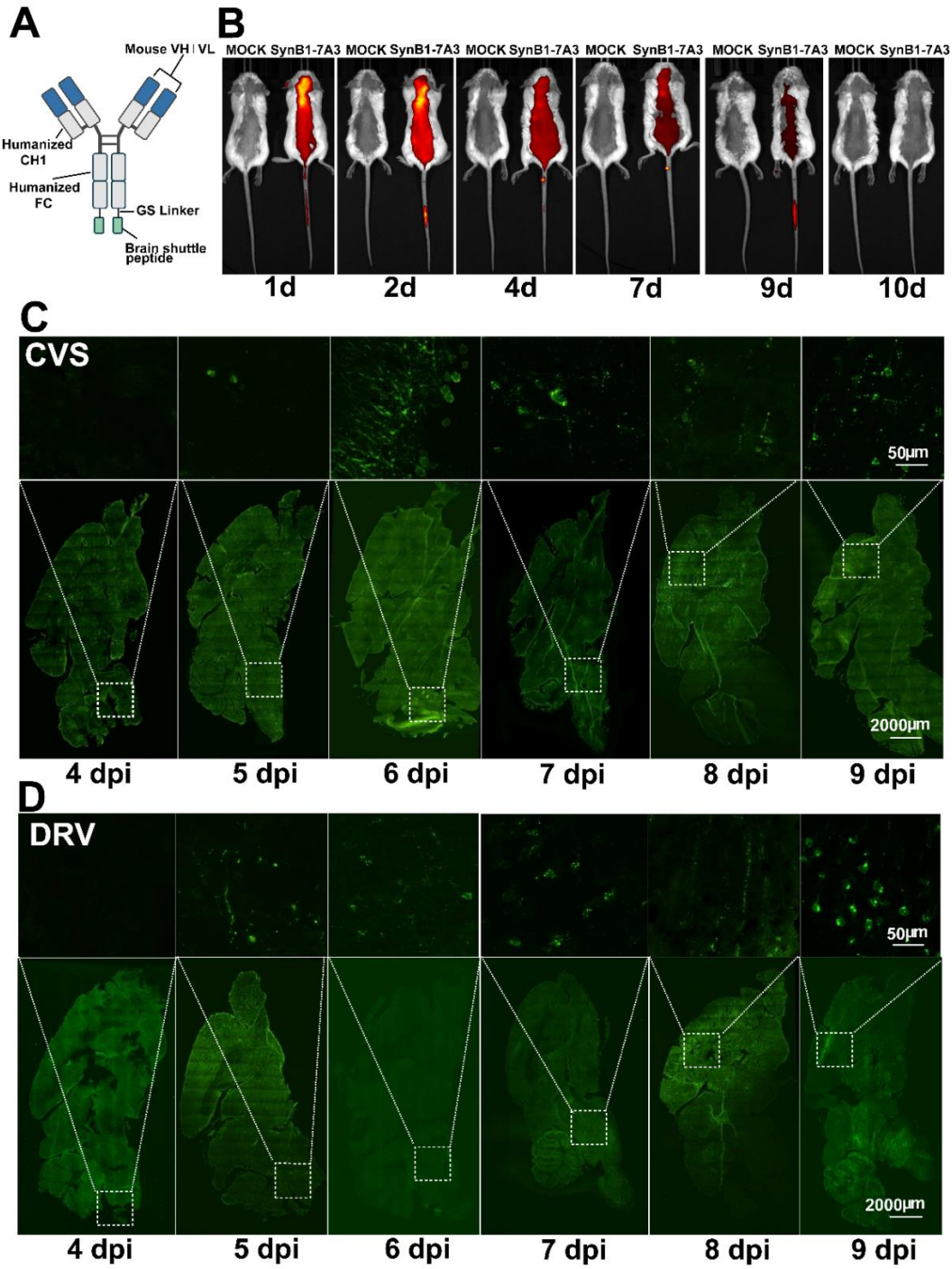

Figure S4. Antibody retention time and viral dynamics in the mice.

A: Mice were injected with Synb1-7A3-Cy7 and observed at 1d, 2d, 4d, 7d, 9d, and 10d; imaging results showed the residence time of the antibodies in the mice.

B-C: At 4-9 dpi, brain tissues from mice infected with CVS (B) and DRV (C) strains were collected. The brain cryosections were incubated with P-FITC antibody, and the images were taken with a Nikon super-resolution confocal microscope. Scale bars: 50 μm (top) and 2000 μm (bottom).

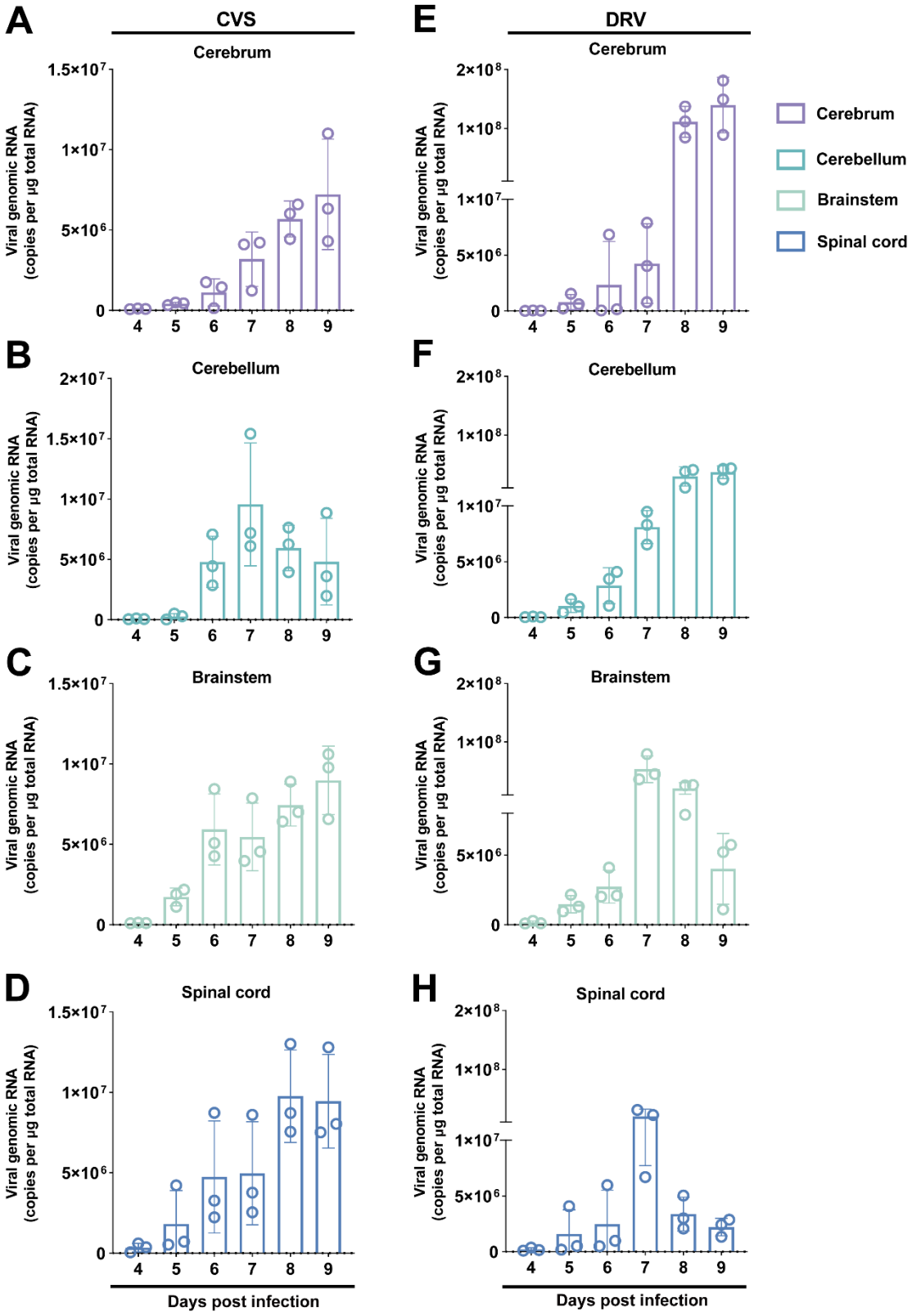

Figure S5. Virus load in RABV-infected mouse brains.

A-D: At 4-9 dpi (n = 3), qPCR was used to quantify the genomic RNA copy numbers of RABV-CVS in the spinal cord, cerebellum, brainstem, and brain of each group of mice.

E-H: At 4-9 dpi (n = 3), qPCR was used to quantify the genomic RNA copy numbers of RABV-DRV in the spinal cord, cerebellum, brainstem, and brain of each group of mice. Data information: Data in (A-H) are presented as mean ± SE.

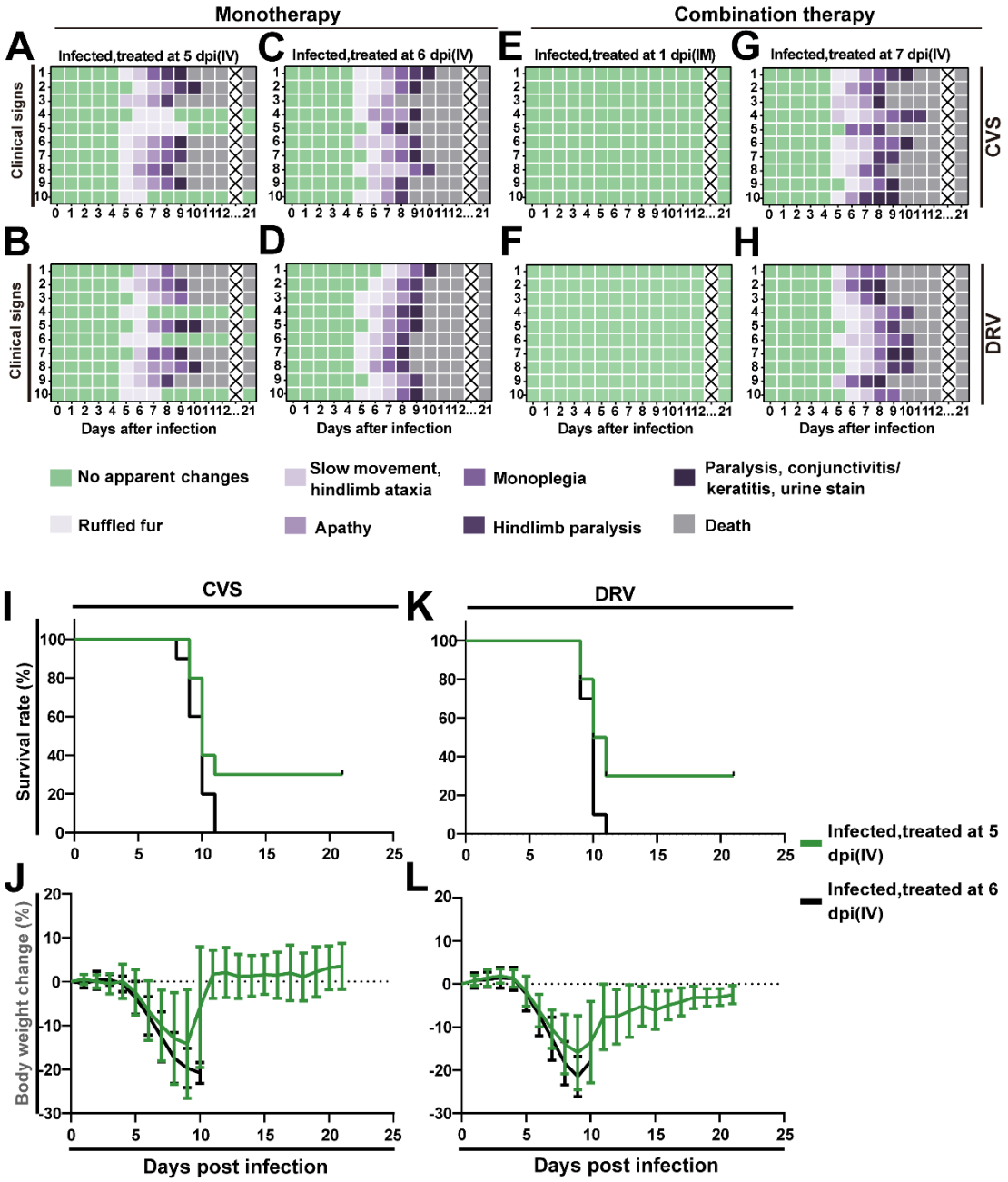

Figure S6. Treatment of symptomatic rabies with individual/mixed antibody-conjugated SynB1.

A-D: Treatment of RABV-infected mice (n=10) with SynB1-7A3 monoclonal antibody (iV), clinical symptoms of the mice at 5-6 dpi. (A, C are CVS strain; B, D are DRV strain.)

E-F: Treatment of RABV-infected mice (n=10) with a mixed antibody at 1 dpi (im), clinical symptoms. (E is CVS strain; F is DRV strain.)

G-H: Treatment of RABV-infected mice (n=10) with a mixed antibody at 7 dpi (iV), clinical symptoms. (G is CVS strain; H is DRV strain.)

I-K: Survival rates of mice treated with monoclonal antibodies at 5 and 6 dpi after RABV infection (F: CVS, G: DRV) (n = 10 per group).

J-L: Changes in body weight of mice treated with monoclonal antibodies at 5 and 6 dpi after RABV infection (D: CVS, E: DRV) (n = 10 per group). Data information: Data in (I-L) are presented as mean ± SD.