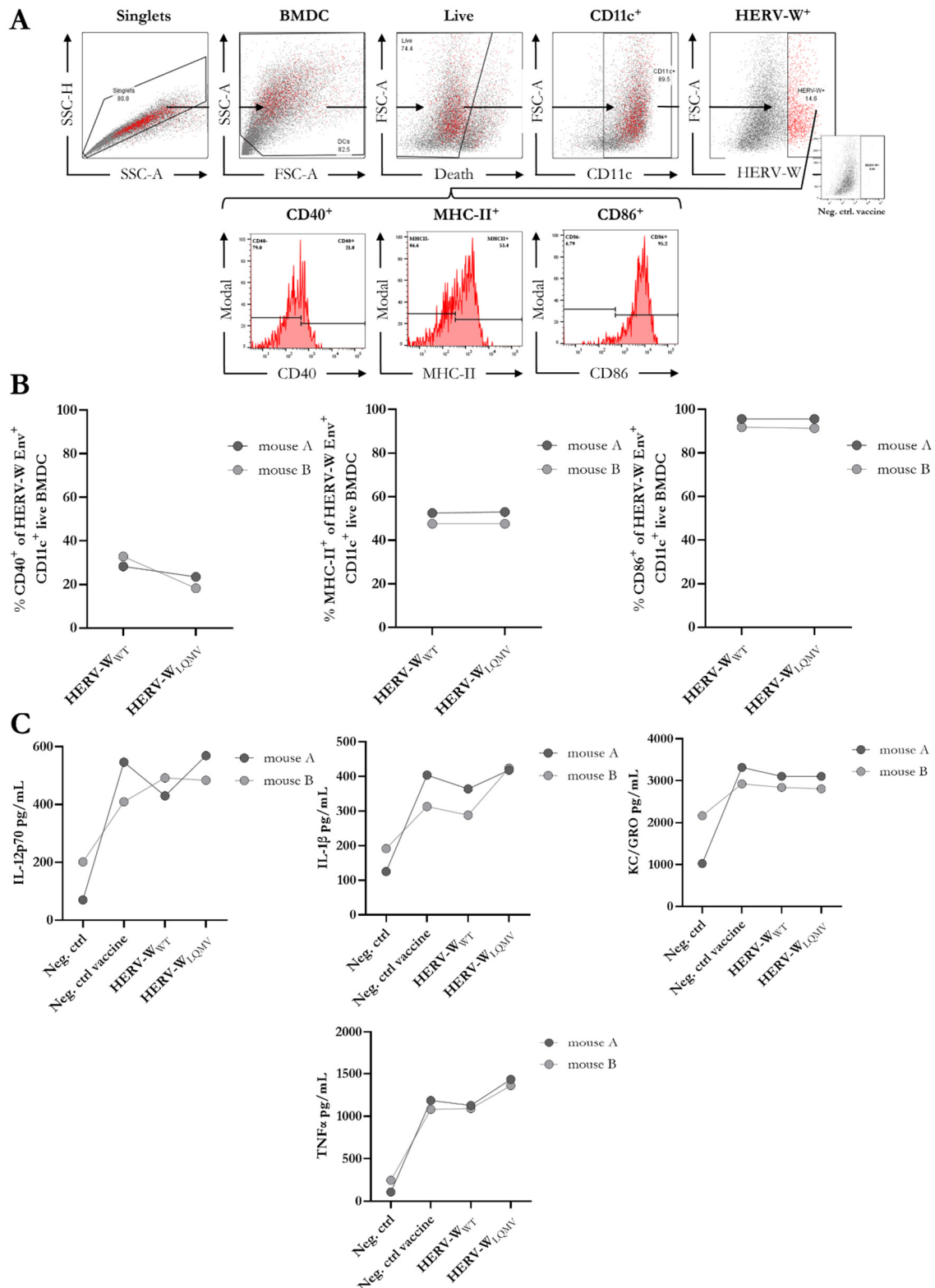
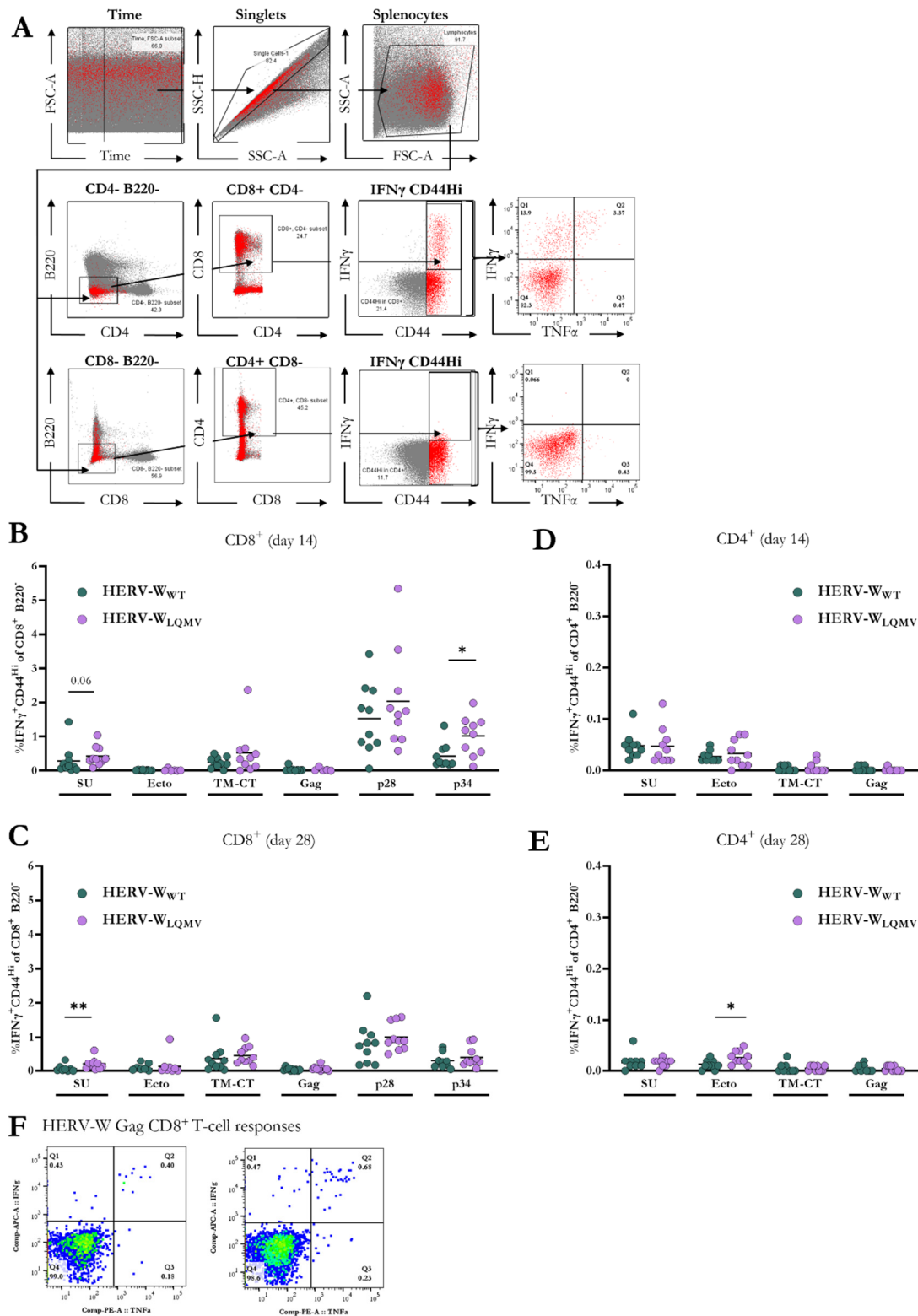


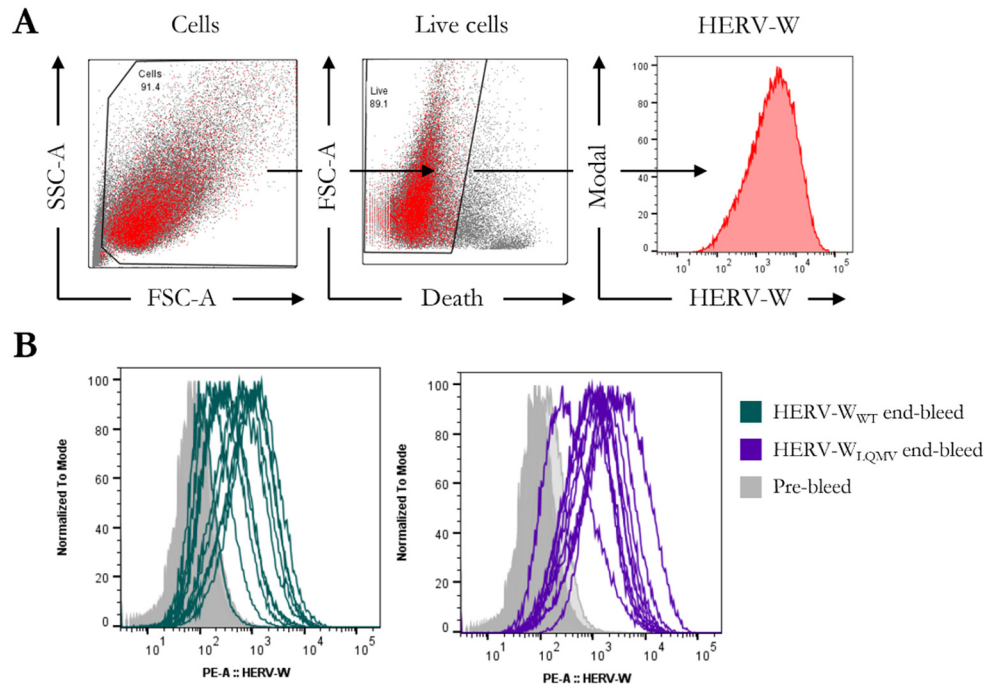
Supplementary Figure S1. (A) Transmission electron microscopy (TEM) pictures of a multinucleated T24 mega cell 24h after transfection with HERV-W_{WT} plasmid. Zoom-in to the right shows the advanced surface morphology of the mega cell, and the two bottom pictures show protrusions between the mega cell and the neighbouring cells. (B) Flow cytometry gating strategy for HERV-W Env surface expression of transduced A549 cells. (C) Histogram overlay of HERV-W Env surface expression of A549 cells transduced with either the two HERV-W vaccines or the empty control vaccine (Neg. ctrl vaccine). (D) Light microscopy pictures of A549 cells transduced with one of HERV-W vaccines or the Neg. ctrl vaccine. (E) TEM pictures of A549 cells transduced with the HERV-W vaccines. The bottom right picture illustrates a higher magnification of the cell membrane of the picture above.



Supplementary Figure S2. (A) Flow cytometry gating strategy for transduced BMDCs. Samples transduced with the empty control vaccine (Neg. ctrl vaccine) and fluorescent-minus-one samples were used to set gates for the activation markers CD40, MHC-II, and CD86 as well as the gate for HERV-W Env-expression. (B) Percentage of CD40 (left), MHC-II (middle), and CD86 (right) expressing BMDCs out of the live, CD11c⁺, HERV-W Env⁺ cells. (C) Concentrations of the proinflammatory biomarkers IL-12p70, IL-1 β , KC/GRO, and TNF α in the supernatant of BMDCs 24h after transduction. All bullets depict the mean of two technical repeats from each of the two mice.



Supplementary Figure S3. (A) Flow cytometry gating strategy of intracellular staining of CD8⁺ and CD4⁺ T-cell responses to the HERV-W vaccines. Percentage of IFN γ -responding CD8⁺ T-cells on day 14 (B) and day 28 (C) after vaccination, or CD4⁺ T-cells on day 14 (D) and day 28 (E) after vaccination. Each bullet represents one mouse, and the mean is indicated with a line in bold. Statistical significance between the two vaccine groups is calculated using the non-parametric two-tailed Mann-Whitney test and significance levels are defined as * = $p < 0.05$, ** = $p < 0.01$. (F) The two dot-plots illustrate IFN γ ⁺ CD8⁺ T-cells from the two mice, one from each group, responding to the HERV-W Gag peptide pool 14 days after immunisation.



Supplementary Figure S4. (A) Gating strategy for flow cytometry of serum IgG binding to HERV-W Env⁺ RenCa cells. (B) Histograms illustrating response differences of serum IgG to HERV-W Env⁺ RenCa cells between pre-bleed and end-bleed of all the mice vaccinated with