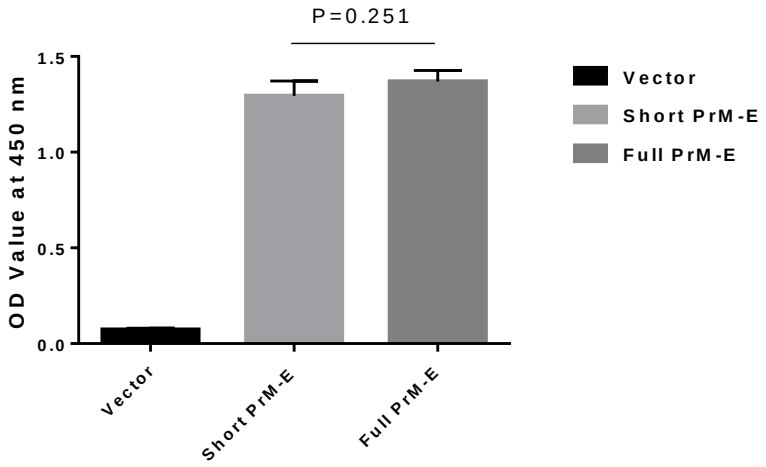
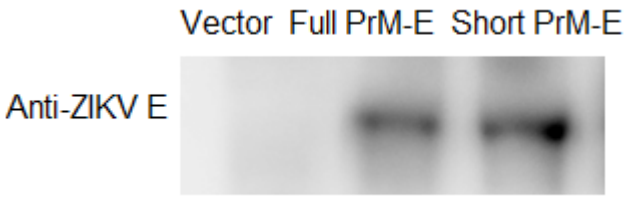
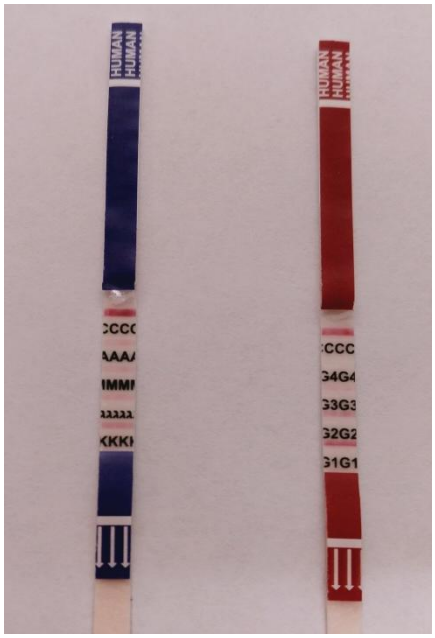
Supplementary figures:



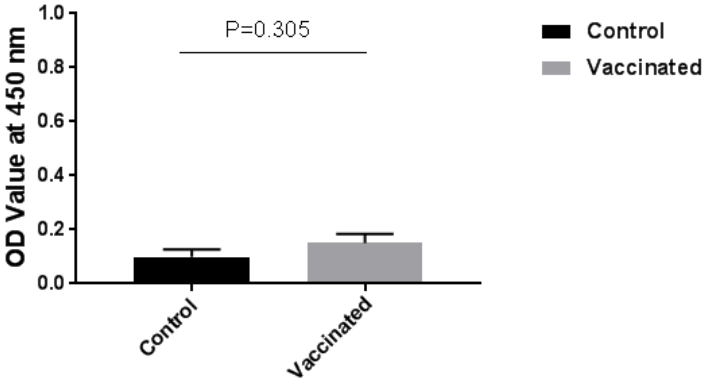
Supplementary figure 1: DNA vaccine constructs encoding either full-length or a short form of PrM-E gene were transfected into 293 T cells, empty vector was used as control. The supernatants obtained from 72 h cultures were used to perform an ELISA to determine the ZIKV E protein specificity. Bar graphs from left to right represent OD450 values of vector control, short version of PrM-E, and full length PrM-E respectively.



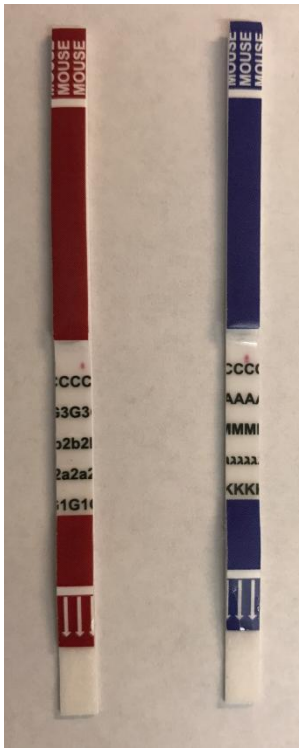
Supplementary figure 2: Western blot analysis. The cell lysates from full and short versions of PrM-E constructs-transfected 293 T cells were used to assess the protein expression and ZIKV E specificity. Empty vector was used as negative control.



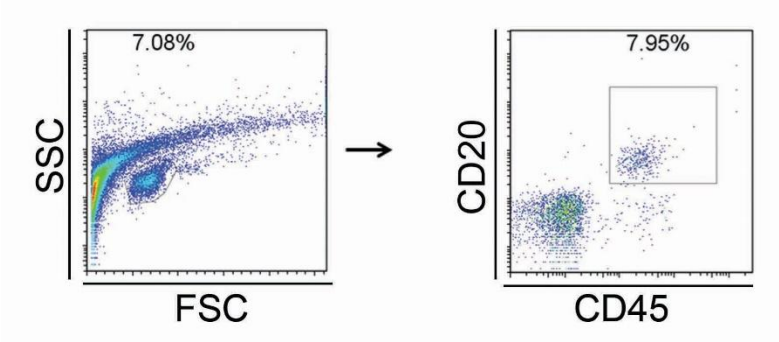
Supplementary figure 3: The vaccinated DRAG mice sera were pooled and then subjected to an antibody isotyping test. The red bars showed positive for each labeled antibody isotypes.



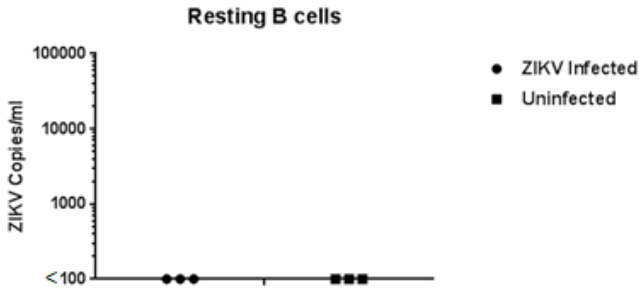
Supplementary figure 4: Four non-humanized DRAG mice (without HSC injection) were immunized with full-length ZIKV DNA vaccine. Four weeks later, the sera were used to perform ZIKV-specific ELISA using mouse ZIKV Envelope ELISA kit (purchased from Alpha Diagnostic International, TX, USA). Three unimmunized DRAG mice were served as negative control. The bar graphs represents the OD450 values in both groups.



Supplementary figure 5: The vaccinated non-humanized DRAG mice sera were pooled and then subjected to a mouse antibody isotyping test. The red bar represents positivity for each labeled antibody isotypes and here, no red bars could be detected.



Supplementary figure 6: gating strategy for staining ZIKV positive human B cells: alive cells – hu-CD45+CD20+ cells.



Supplementary figure 7: Human B cells were freshly isolated from human PBMCs using CD19 positive selection kit, then $1x10^6$ B cells were directly infected with ZIKV. After 3 days of infection, the cellular RNA were purified from the harvested B cells, and ZIKV-specific RT-PCR were performed to determine the viral load.