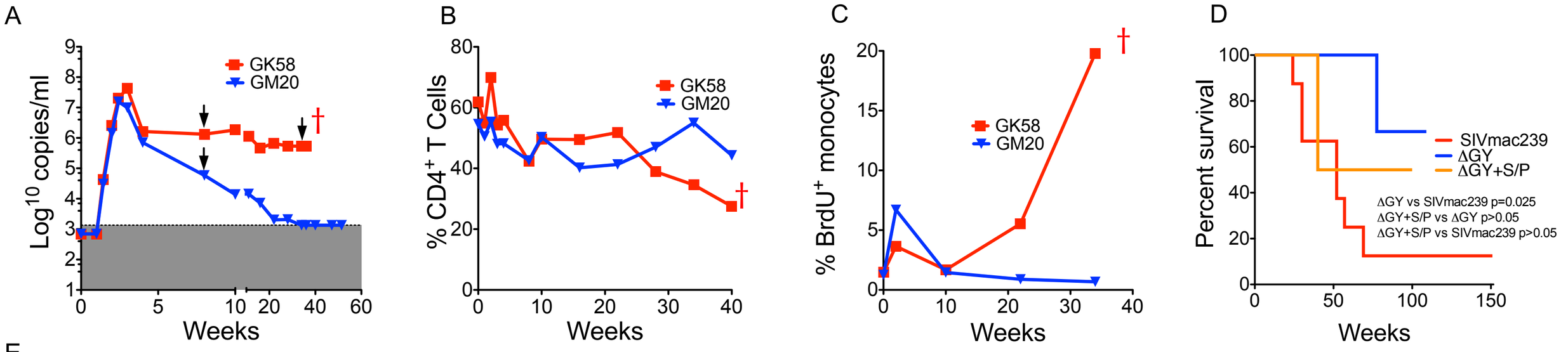

E

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SIVMAC239          VILLRIVIYI VQMLAKLRQG YRPVFSSPPS YFQQTHIQQD PALPTREGKE RDGGEGGGNS SWPWQIEYIH FLIRQLIRLL TWLFSNCRTL LSRVYQILQP ILQRLSATLQ RIREVLRTEL TYLQYGWSYF HEAVQAVWRS ATETLAGAWG DLWETLRRGG RWILAIPRRI RQGLELTLL*
GM20.WK8..P1A1     ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
GM20.WK8..P1C8     ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
GM20.WK8..P3A10    ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
GM20.WK8..P3A12    ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
GM20.WK8..P3A4     ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
GM20.WK8..P3A7     ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
GM20.WK8..P3A8     ---V------ ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
GM20.WK8..P3B12    ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
GM20.WK8..P3C4     ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
GM20.WK8..P3C6DP   ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
GM20.WK8.P1C12     ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
GM20.WK8..P3A6     ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------

GK58.WK8.P3E12     ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
GK58.WK8.P3F1      ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
GK58.WK8.P3F10     ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
GK58.WK8.P3F3      ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
GK58.WK8.P3F9      ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
GK58.WK8.P3G7      ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
GK58.WK8.P3H1      ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
GK58.WK8.P3H4      ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
GK58.WK34.P5G6     ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- --------I- ---------- ---------- ---------- ------F--- ---------- ---------- ---------- ----------
GK58.WK34.P5C2     ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- -L-------- ---------- ---------- ------A--- ---------- ---------- ---------- -----Y----
GK58.WK34.P5D10    ---------- ---------. .-S---P--- ---------- ---------- G--------- ---------- ---------- ---------- -L-------- -F-------- ---------- ------F--- ---------- ---------- ---------- -----Y----
GK58.WK34.P5D2     ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- -L-------- -F-------- ---------- ------G--- ---------- ---------- ---------- -----Y----
GK58.WK34.P5D6     ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- --------I- -L-------- -F-------- ---------- ------F--- ---------- ---------- ---------- -----Y----
GK58.WK34.P5E10    ---------- ---------. .-S-L-P--- ---------- ---------- G--------- ---------- ---------- ---------- -L-------- ---------- ---------- ---------A ---------- ---------- ---------- -----Y----
GK58.WK34.P5F5     ---------- ---------. .-----P--- ---------- ---------- G--------- ---------- ---------- ---------- --S------- -F-------- ---------- ---I--F--- ---------- ---------- ---------- -----Y----
GK58.WK34.P5G1     ---------- ---------. E-----P--- ---------- ---------- G--------- ---------- ---------- ---------- -L-------- ---------- ---------- ------F--- ---------R ---------- ---------- ----------
GK58.WK34.P5G3     ---------- ---------. .-S-L-P--- ---------- ---------- G--------- ---------- ---------- ---------- -L-------- -F-------- ---------- ---------A ---------- ---------- ---------- -----Y----880
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Supplemental Figure 1. Viral load, $CD4^+$ T cell dynamics, monocyte turnover, survival analysis and evolution of ΔGY+S/P during chronic infection. Plasma viral RNA (A), peripheral $CD4^+$ T-cell percentages (B), and percent monocyte turnover as an indicator of immune activation (3) (C) are shown for two ΔGY+S/P animals followed through chronic infection. Shaded area in Panel A indicates the limits of sensitivity of the viral RNA assay, and "†" indicates euthanasia due to AIDS. Kaplan Meyer survival plots are shown for rhesus macaques infected with SIVmac239 (red), ΔGY (blue) and ΔGY+S/P (orange) (D). No statistical difference was observed between the ΔGY+S/P group and the SIVmac239 group or ΔGY group; however the ΔGY group showed greater survival compared to SIVmac239 (p=0.025) (2). (E) Single genome amplification of plasma viral RNA was performed at the time points indicated by the arrows in panel A for ΔGY+S/P-infected animals. Amino acid sequences of amplicons for GK58 (weeks 8 and 34) and GM20 (week 8) are shown. Amplicons are grouped by sampling time with each clone designated by the animal name, the week of sampling, and a unique identifier. Amino acid sequences are shown relative to SIVmac239 with "**-**" indicating identity, "**.**" indicating a space introduced for alignment, and "*****" indicating the naturally occurring *env* stop codon. The positions of the ΔGY deletion mutation at amino acid positions 721-722 (blue bolded text) and the S/P point mutation at position 727 (orange bolded text) are indicated. All *env* clones maintained the ΔGY and S727P mutations. They also acquired an R751G mutation, as is typically seen during replication of SIVmac239 *in vivo* (1). Additional changes were acquired in GM58 at week 34 during its progression to AIDS including (in 7 of 9 amplicons) a L876Y at the C-terminus, which created a new YxxØ motif (YTLL).

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