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416 **Supplementary materials**

417 **Table S1. Percentage of VH family genes in the IgG<sup>+</sup> memory B cells.**

418 **Figure S1. Protein sequence alignments of macaques IGHV5-A and IGHV5-B and human**

419 **VH5-51 germline sequences.** According to Francica et al. (29) rhesus macaques use the three

420 VH5 family genes: IGHV5-A, -B, and -C, which together have eight alleles. Two of these genes,

421 IGHV5-A and IGHV5-B, which together have six alleles, have 94.79% to 95.83% identity when

422 aligned with human VH5-51 (IGHV5-51) using IMGT/V-QUEST.

423 **Figure S2. Vaccine-induced antibodies in mucosal secretions.** (A) Buccal and (B) rectal

424 secretions were diluted 1:3 and tested against HIV-1 SF162 gp140 trimeric protein by ELISA.

425 Secretions from macaque 27141 that were collected at week 0 prior to immunization provided a

426 negative control.

427 **Figure S3. Correlation between plasma neutralization and mucosal secretions binding to**

428 **gp140<sub>SF162</sub>.** (A) Buccal and (B) rectal secretions binding to recombinant gp140<sub>SF162</sub> (OD) were

429 compared with plasma neutralization of pseudovirus SF162 (ID<sub>50</sub>) for correlation using  
430 Spearman correlation coefficient (r ) with P values (two-tailed) and linear regression. (C)  
431 Correlation between buccal and rectal secretions binding to gp140<sub>SF162</sub>.

432 **Figure S4. Neutralization of tier 1 pseudoviruses SF162 (clade B) and Q481.e2.TAIV (clade**  
433 **A), at weeks 18, 34 and 70.**

434 **Figure S5. Neutralization of tier 1 pseudoviruses MW986 (clade C) and SS1188 (clade B) at**  
435 **weeks 18, 34 and 70.**

436 **Figure S6. Neutralization of tier 1 pseudoviruses 6535 (clade B) and DJ263.8 (clade AG at**  
437 **week 18, 34 and 70.**

438 **Figure S7. Neutralization of tier 2 pseudoviruses JRCSF, REJO and RHPA (clade B) at week**  
439 **18 and 34.**

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