

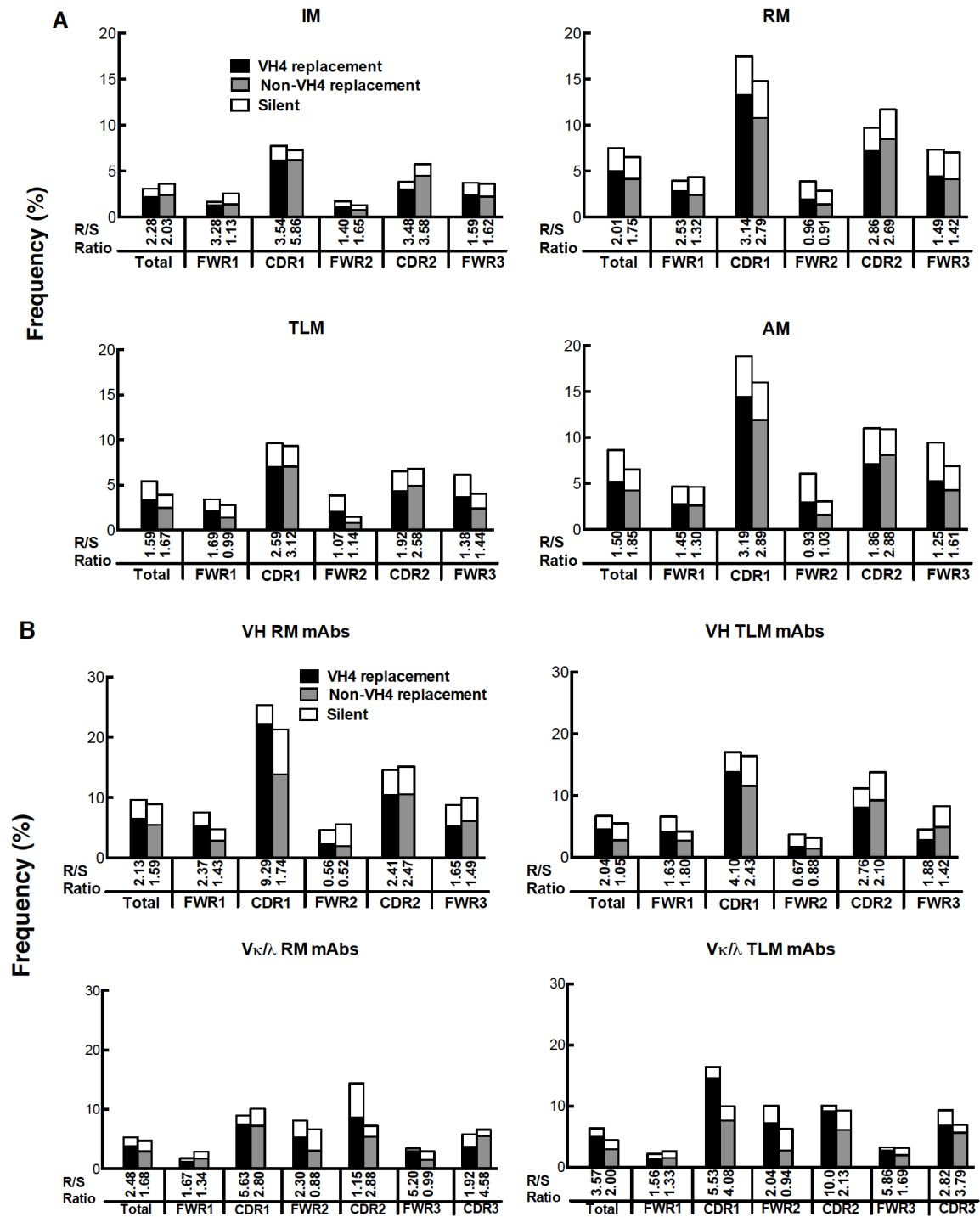
Supplemental Table 1. Serum neutralization of HIV pseudotypes

Subject	Clade C	Clade B	Clade A	Clade A/E	Clade C			
	MGRM-C-026	92BR020	94UG103	92TH021	93IN905	JRCSE	NL43	aMLV
CD4BS-01	38	93	50	25	107	57	851	19
CD4BS-02	16	174	33	80	234	1190	4834	20
CD4BS-03	186	96	15	12	248	109	372	15

Numbers refer to reciprocal dilution of IC₅₀; green color refers to values considered positive, per details in reference 72

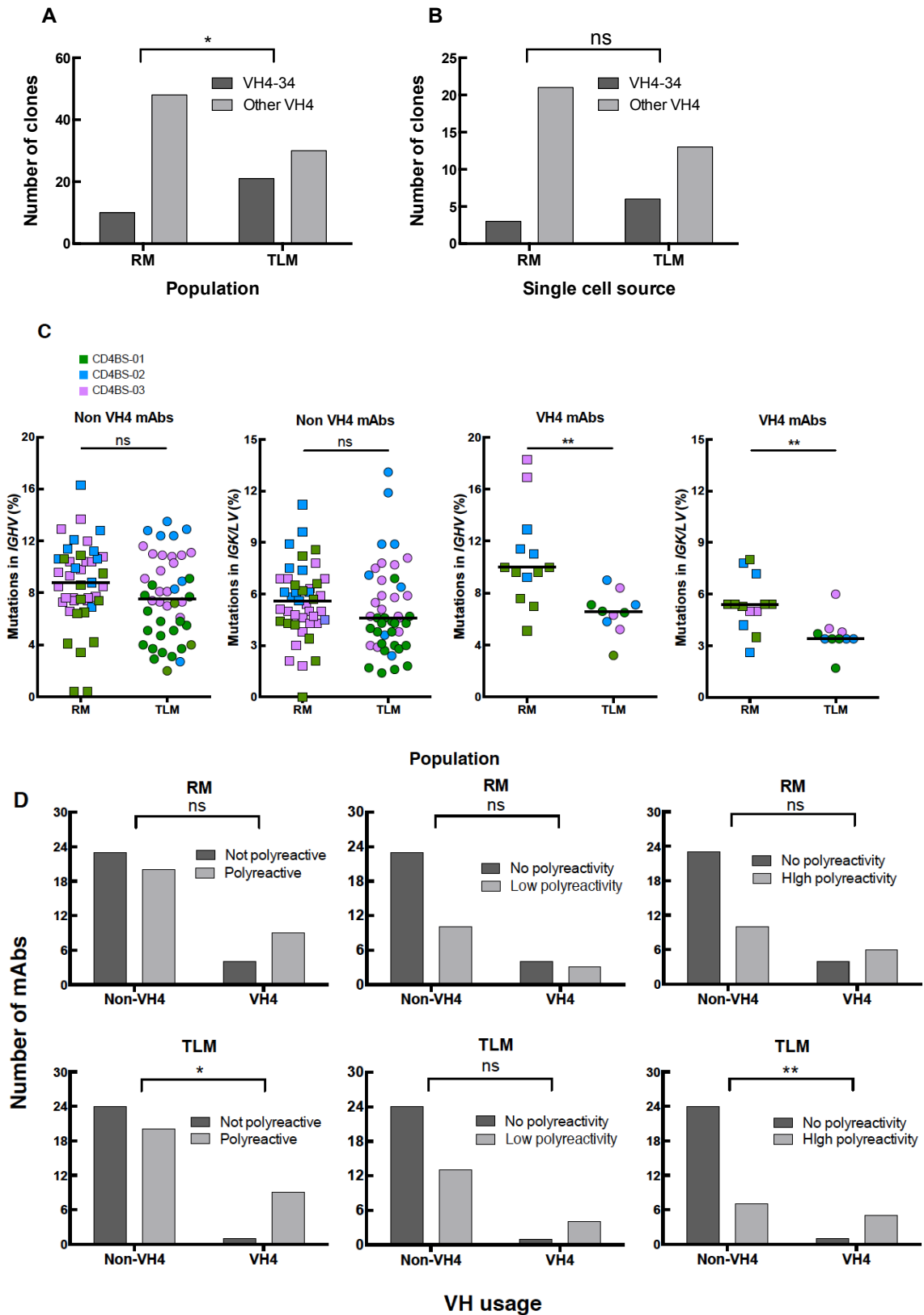
Supplemental Figures

Supplemental Figure 1



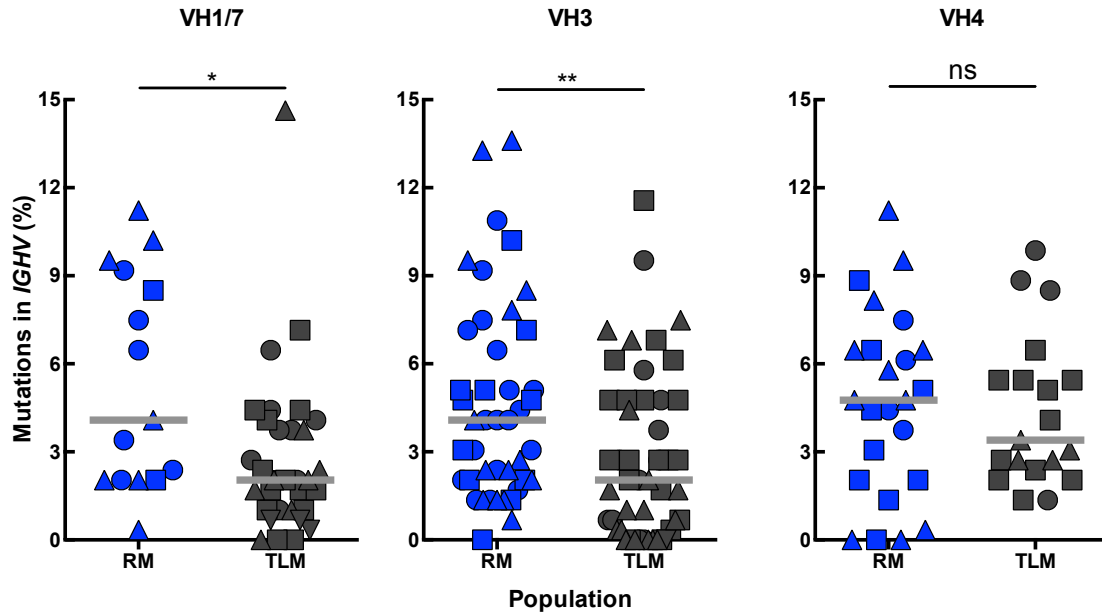
VH-based sub-analyses of R/S ratios. R/S ratios from (A) Figure 1C and (B) Figure 3C were calculated for VH4 and non-VH4 families separately.

Supplemental Figure 2



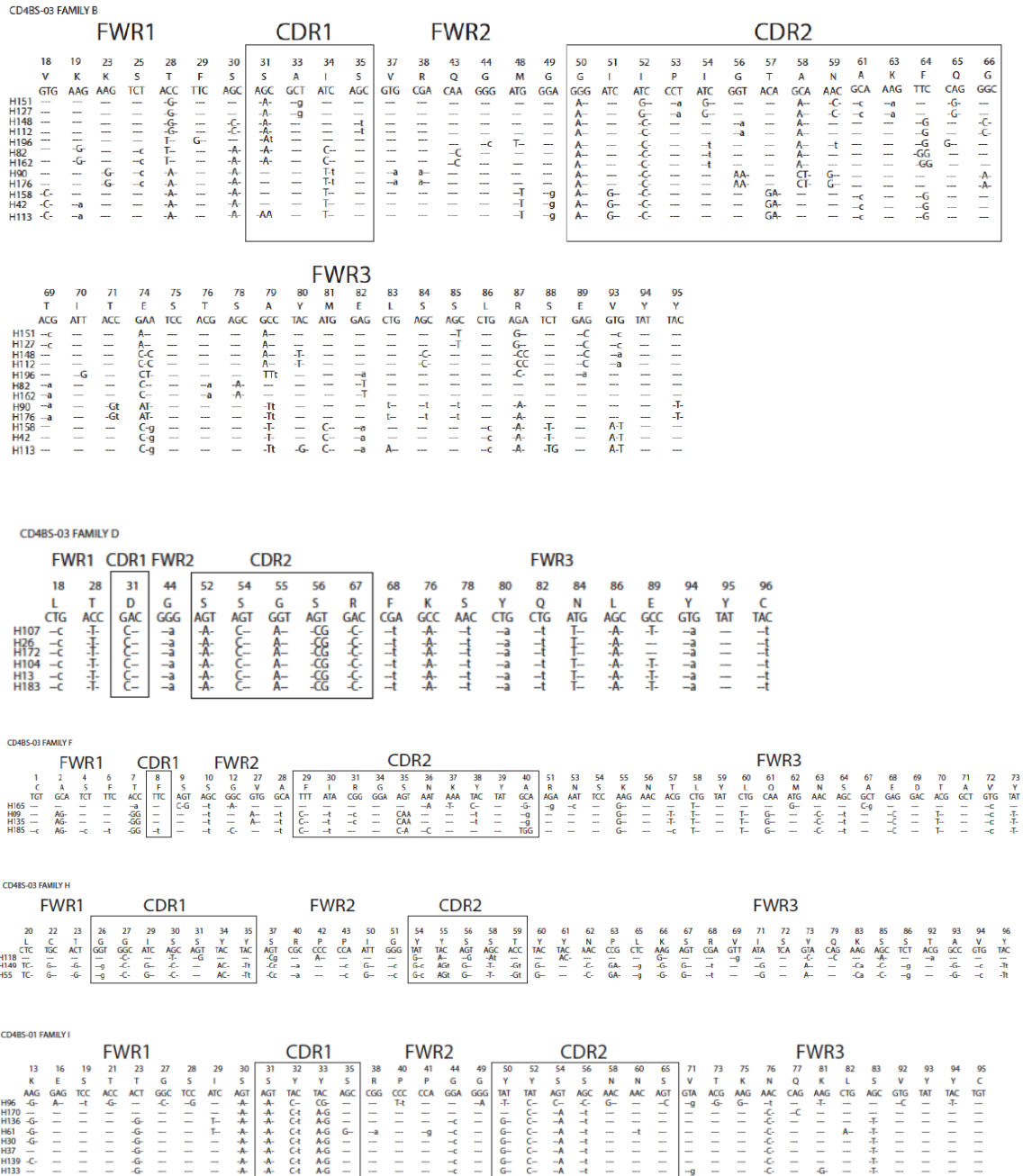
Supplemental Figure 2. VH-based sub-analyses of SHM frequencies, family members and polyreactivities. **(A)** Comparison of number of clones in Figure 1B belonging to VH4-34 or other VH4 family members. **(B)** Comparison as in **(A)** for clones derived from single-cell sorting. **(C)** Mutation frequencies in Figures 3A and 3B were calculated for VH4 and non-VH4 families separately. **(D)** Comparisons in Figures 7B and 7C calculated by population of mAb origin (RM or TLM). The * denotes $P < 0.05$, ** denotes $P < 0.01$ and ns refers to not significant ($P > 0.05$).

Supplemental Figure 3



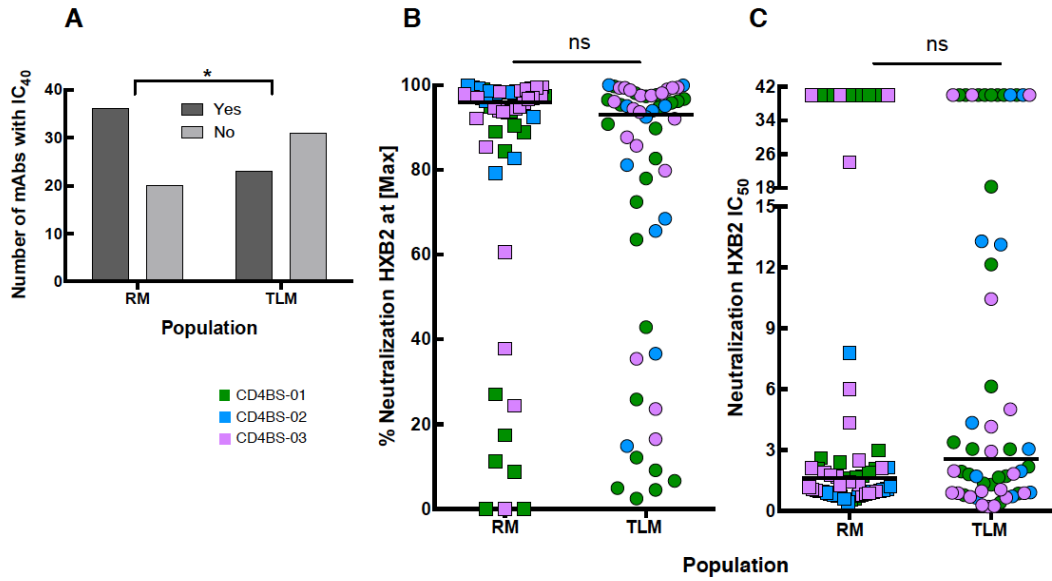
Single RM and TLM B cells were sorted from the peripheral blood of three HIV-viremic individuals (each identified by a different symbol) and variable regions within the Ig heavy chains were amplified and sequenced. Mutation frequencies were calculated from nucleotide sequences. Horizontal bars represent medians; ns refers to not significant. * $P < 0.05$; ** $P < 0.01$ (Mann Whitney test).

Supplemental Figure 4, continued



Family sequence alignment of Ig heavy chains associated with clonal trees in Figure 5.

Supplemental Figure 5



HIV neutralization analyses. **(A)** Comparison of whether 40% neutralization (IC₄₀) with tier 2 JRFL pseudovirus was achieved (yes) or not (no). **(B)** Percent neutralization and **(C)** mAb concentration ($\mu\text{g}/\text{mL}$) resulting in 50% neutralization (IC₅₀) with tier 1 HXB2 pseudovirus. Horizontal bars represent medians and ns refers to not significant ($P > 0.05$).