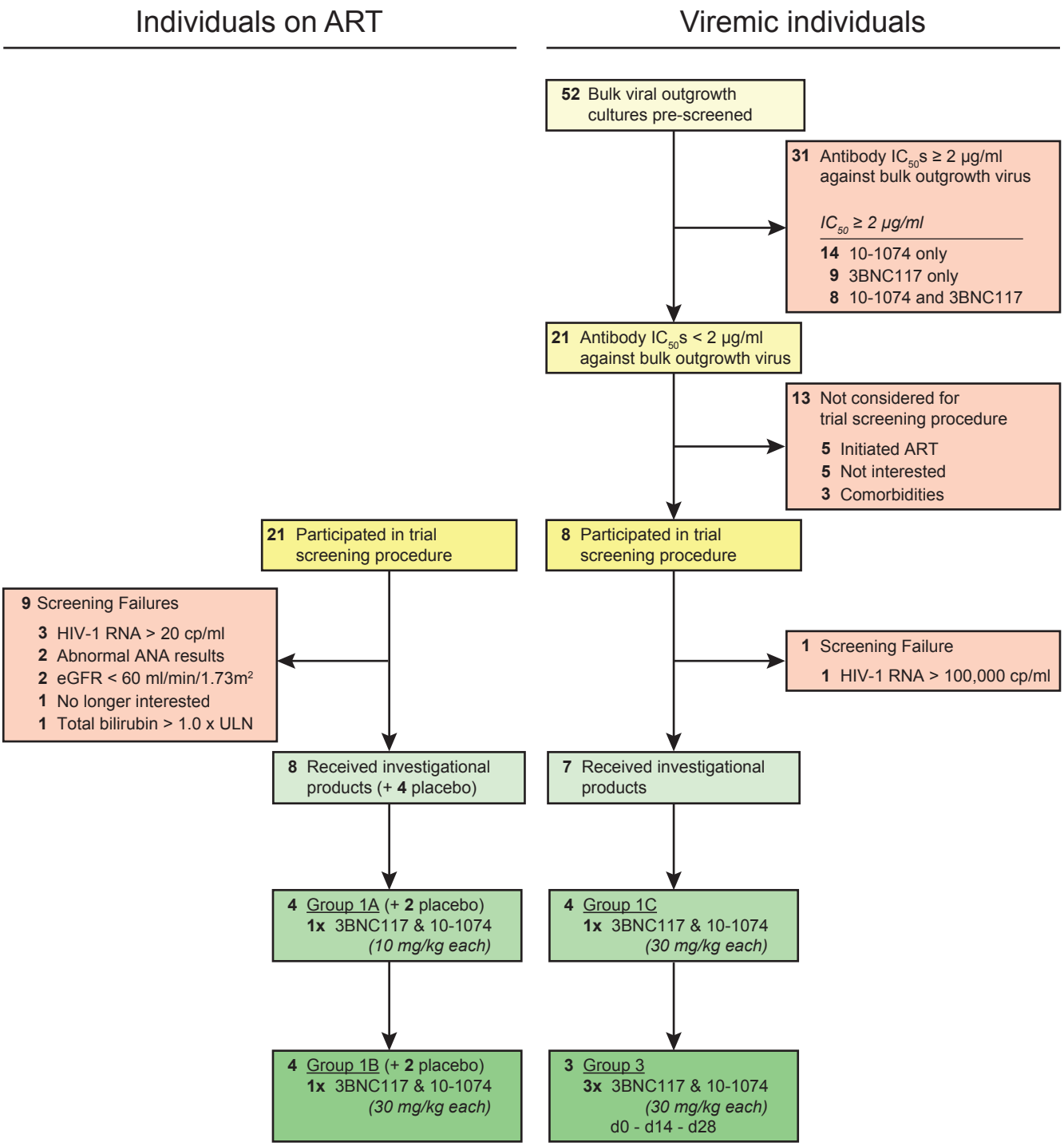
Supplementary Information

Safety and antiviral activity of combination HIV-1 broadly neutralizing antibodies in viremic individuals

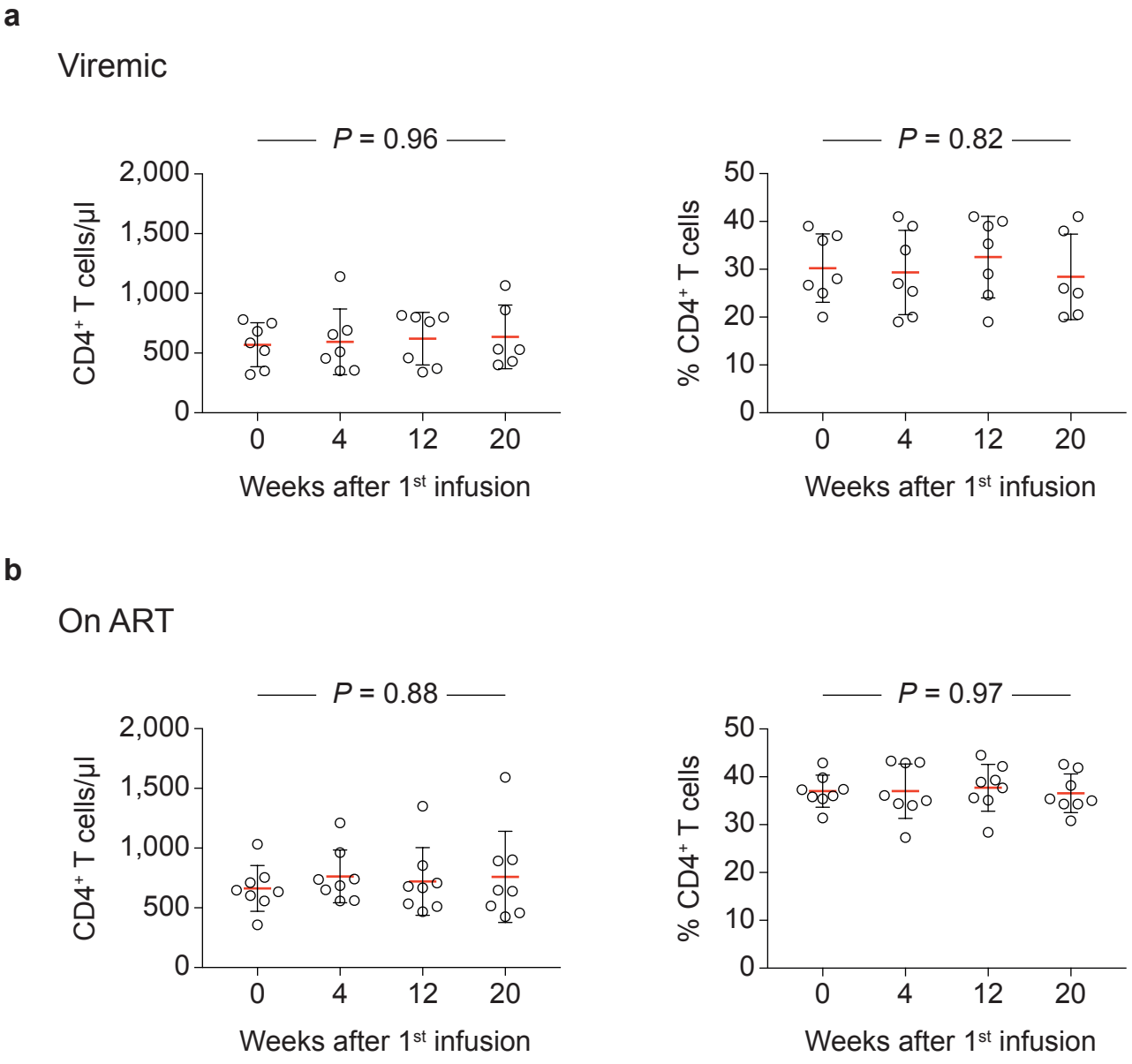
Supplementary Figures

Supplementary Tables



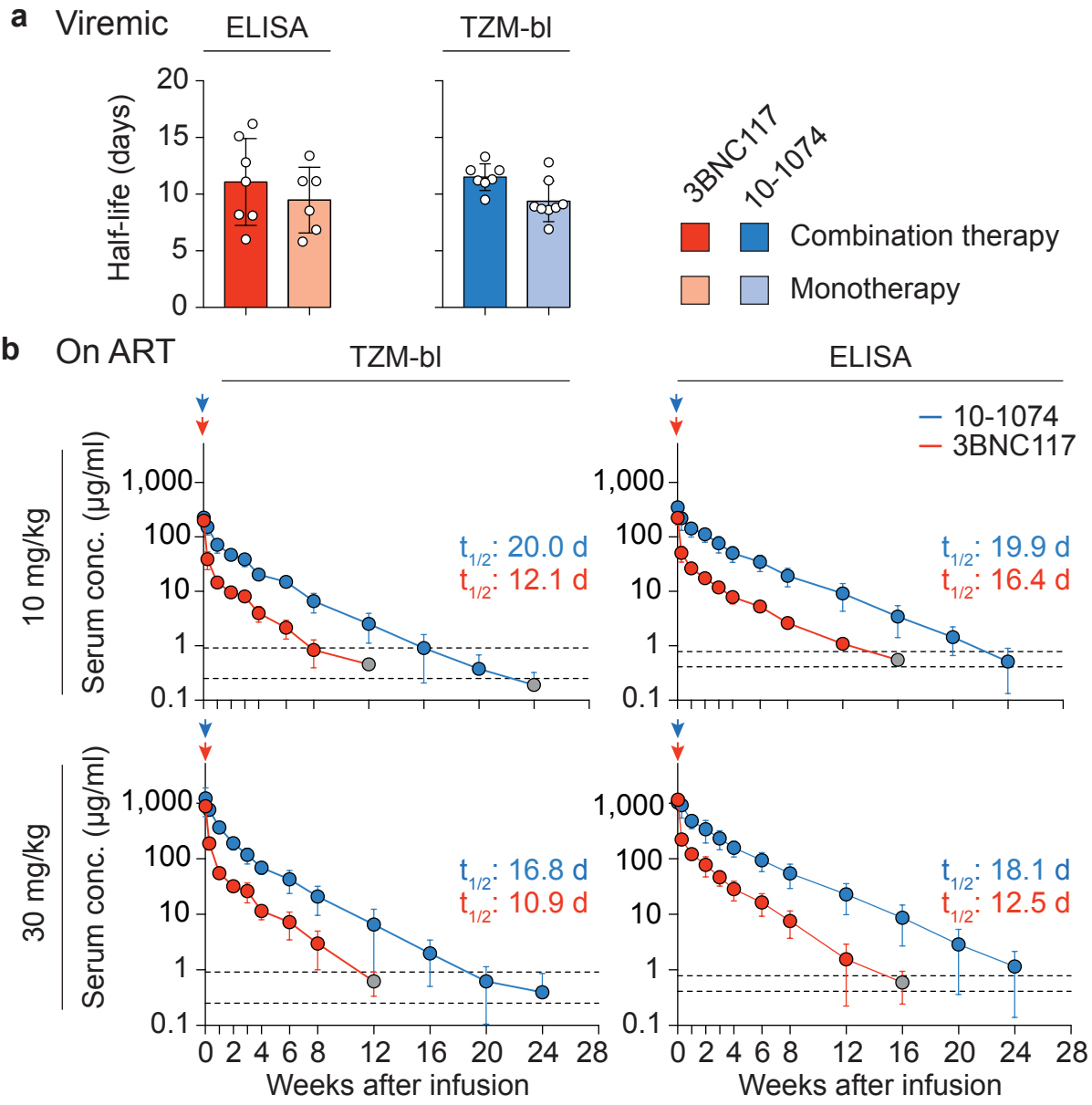
Supplementary Figure 1. *Subject enrollment and study design*

HIV-1-infected individuals on antiretroviral therapy were screened for enrollment into group 1A (single infusion of 3BNC117 + 10-1074 (10 mg/kg each)) and group 1B (single infusion of 3BNC117 + 10-1074 (30 mg/kg each)). Enrollment into groups 1A and 1B was double-blind and individuals were randomized to receive the antibodies or placebo at a 2:1 ratio (total *n*=6 per group). Placebo recipients are not included in the data analysis. Viremic individuals off antiretroviral therapy were invited for participation if virus obtained by bulk $CD4^+$ T cell outgrowth culture was determined to be sensitive against both 3BNC117 and 10-1074 (IC_{50} < 2 µg/ml for each antibody in TZM-bl assay). Enrolled viremic individuals received a single infusion of 30 mg/kg of each antibody (group 1C) or three infusions of 30 mg/kg of each antibody every two weeks (d0, d14, d28).



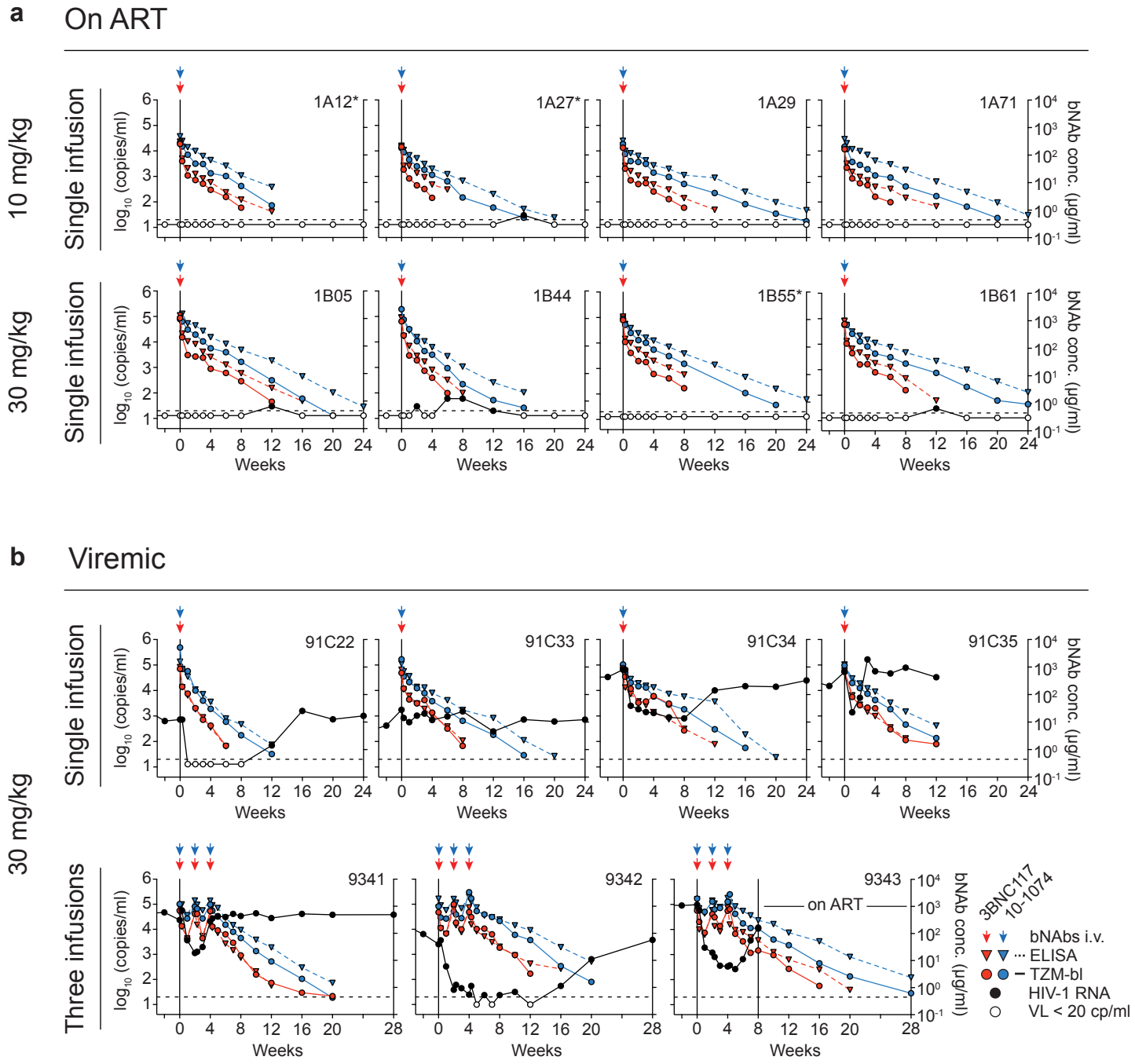
Supplementary Figure 2. *CD4⁺ T cell counts*

Absolute CD4⁺ T cell counts (left) and relative CD4⁺ T cell frequency among CD3⁺ lymphocytes (right) in (**a**) viremic individuals (*n*=7) and (**b**) individuals on antiretroviral therapy (*n*=8). Red lines indicate arithmetic mean and error bars indicate standard deviation. *P* values were calculated using one-way ANOVA comparing all groups.



Supplementary Figure 3. *BNAb half-lives in HIV-1-infected individuals*

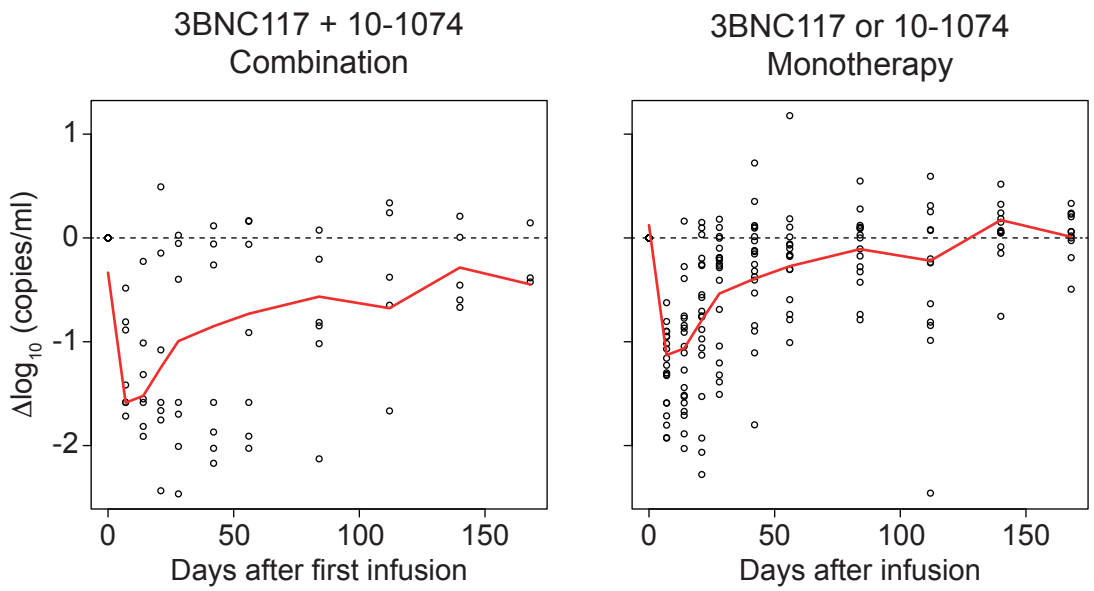
(**a**) Terminal bNAb half-lives based on serum concentrations determined by ELISA or TZM-bl assay in viremic study participants receiving a single or three infusions of 30 mg/kg of each 3BNC117 and 10-1074 (combination) (n = 7), and viremic individuals receiving a single infusion of 3BNC117 or 10-1074 alone (monotherapy) at a dose of 30 mg/kg (n = 6 for 3BNC117 and n = 8 for 10-1074) (3BNC117, Caskey and Klein *et al.*, *Nature* **522**, 487-491 (2015); 10-1074, Caskey, Schoofs and Gruell *et al.*, *Nat. Med.* **23**, 185-191 (2017)). Columns indicate arithmetic means and bars indicate standard deviation. Circles indicate individual participants. Note that different pseudovirus strains were used to determine antibody concentrations (3103.v3.C10 and X2088_c9 for mono- and combination therapy, respectively). (**b**) Serum concentrations of 3BNC117 (red) and 10-1074 (blue) after a single infusion of 10 mg/kg (top, n = 4) or 30 mg/kg (bottom, n = 4) of each antibody to individuals on continuous ART as determined by TZM-bl (left) or ELISA (right). For the TZM-bl assay, time points with detectable activity against MuLV (ID_{80} > 20) were excluded. In cases of detectable baseline levels by ELISA, these were subtracted, and only measurements above 3-fold baseline levels are included. Circles and lines indicate arithmetic mean and standard deviation, respectively. Dashed lines indicate detection limits for 3BNC117 (top) and 10-1074 (bottom). Grey circles indicate levels below the limit of detection. Arrows indicate antibody infusions.



Supplementary Figure 4. *HIV-1 RNA and bNAb antibody levels in all study participants*

Graphs illustrate viral load (black line; left y-axis) and bNAb serum levels (red, 3BNC117; blue, 10-1074; right y-axis) over time in (**a**) individuals on antiretroviral therapy (top, single infusion of 10 mg/kg of each antibody; bottom, single infusion of 30 mg/kg of each antibody) and (**b**) viremic participants (top, single infusion of 30 mg/kg of each antibody; bottom, three infusions of 30 mg/kg of each antibody every two weeks). Only bNAb levels above the respective limit of detection are shown. Antibody levels determined by TZM-bl assay are indicated by colored solid line and circles, and TZM-bl results were excluded if activity against negative control virus (MuLV) was observed. Antibody levels determined by ELISA are indicated by colored dashed line and triangles. Asterisks (*) indicate individuals with detectable baseline levels in ELISA. In these cases, baseline levels were subtracted from subsequent bNAb concentrations determined by ELISA (3BNC117, 1A27 (1.17 µg/ml) and 1B55 (2.48 µg/ml); 10-1074, 1A12 (0.43 µg/ml)) and curves only show concentrations that are 3-fold higher than baseline levels. Dashed black line indicates limit of detection for HIV-1 RNA (20 copies/ml). Arrows indicate antibody infusions.

a

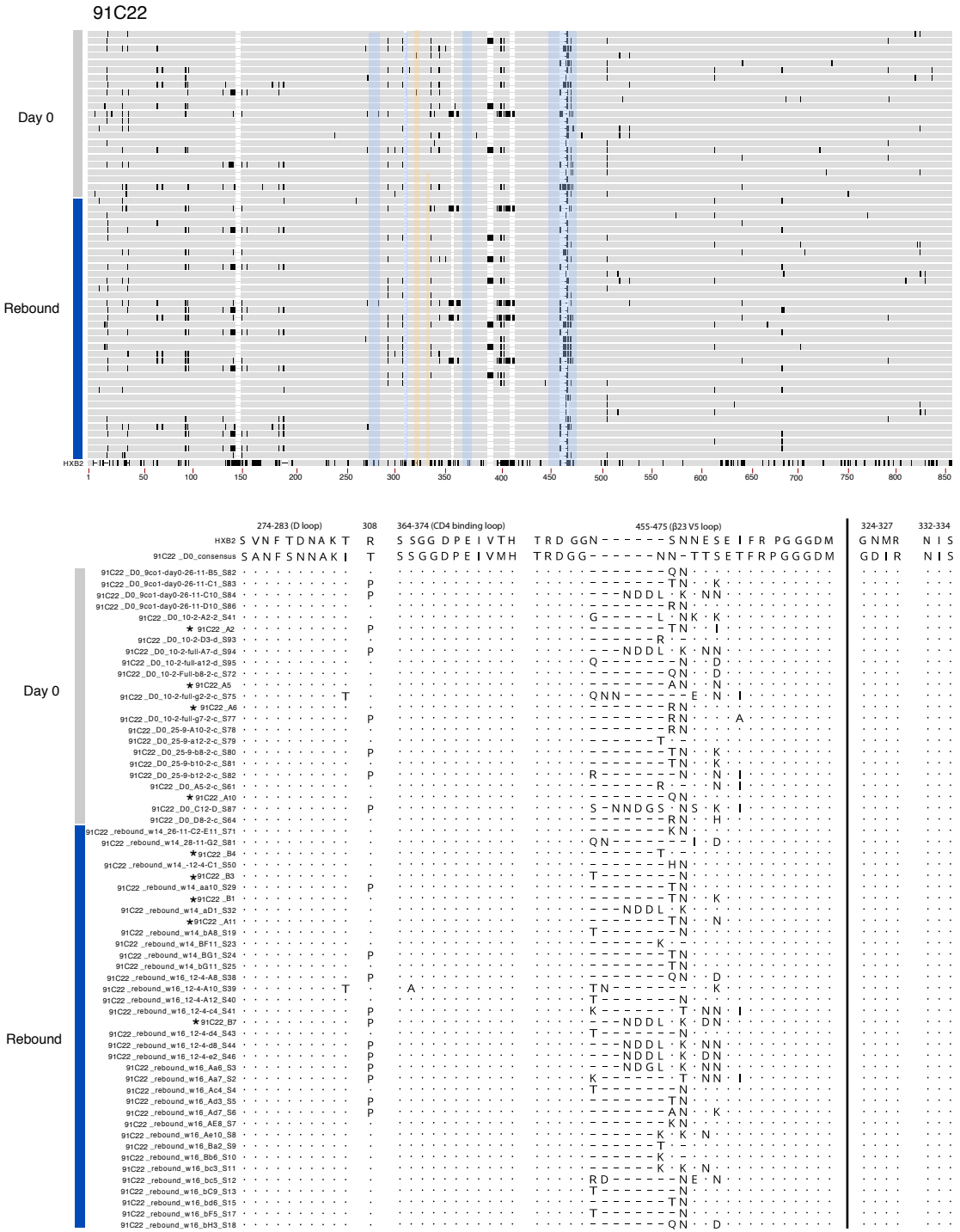


b

Correlation	With Treatment	Without Treatment
none	410.1444777	413.2992212
corARMA(p=0,q=1)	342.3434909	345.3257615
corARMA(p=0,q=2)	334.8421682	337.8340493
corARMA(p=1,q=0)	326.0505608	327.9541902
corARMA(p=1,q=1)	327.2169635	329.4295783
corARMA(p=1,q=2)	329.2051113	331.4291768
corARMA(p=2,q=0)	327.1790532	329.4238417
corARMA(p=2,q=1)	328.5336267	330.5019875
corARMA(p=2,q=2)	330.4939601	332.5006249
corExp	326.0505609	327.9541903
corLin	335.9980408	342.6470672
corRatio	328.314909	331.1412435
corSpher	326.8269772	329.4149949
corGaus	337.8828039	340.8426585
corSymm	296.1530987	308.2251827

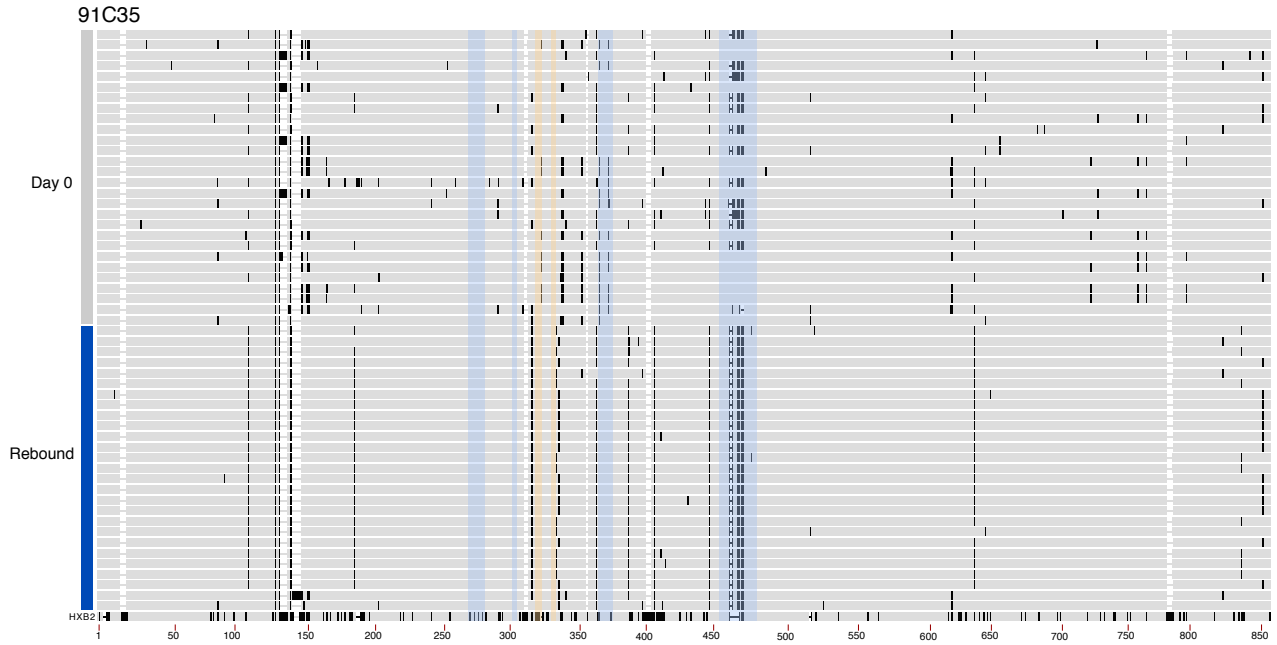
Supplementary Figure 5. *Viral suppression in combination therapy vs. monotherapy*

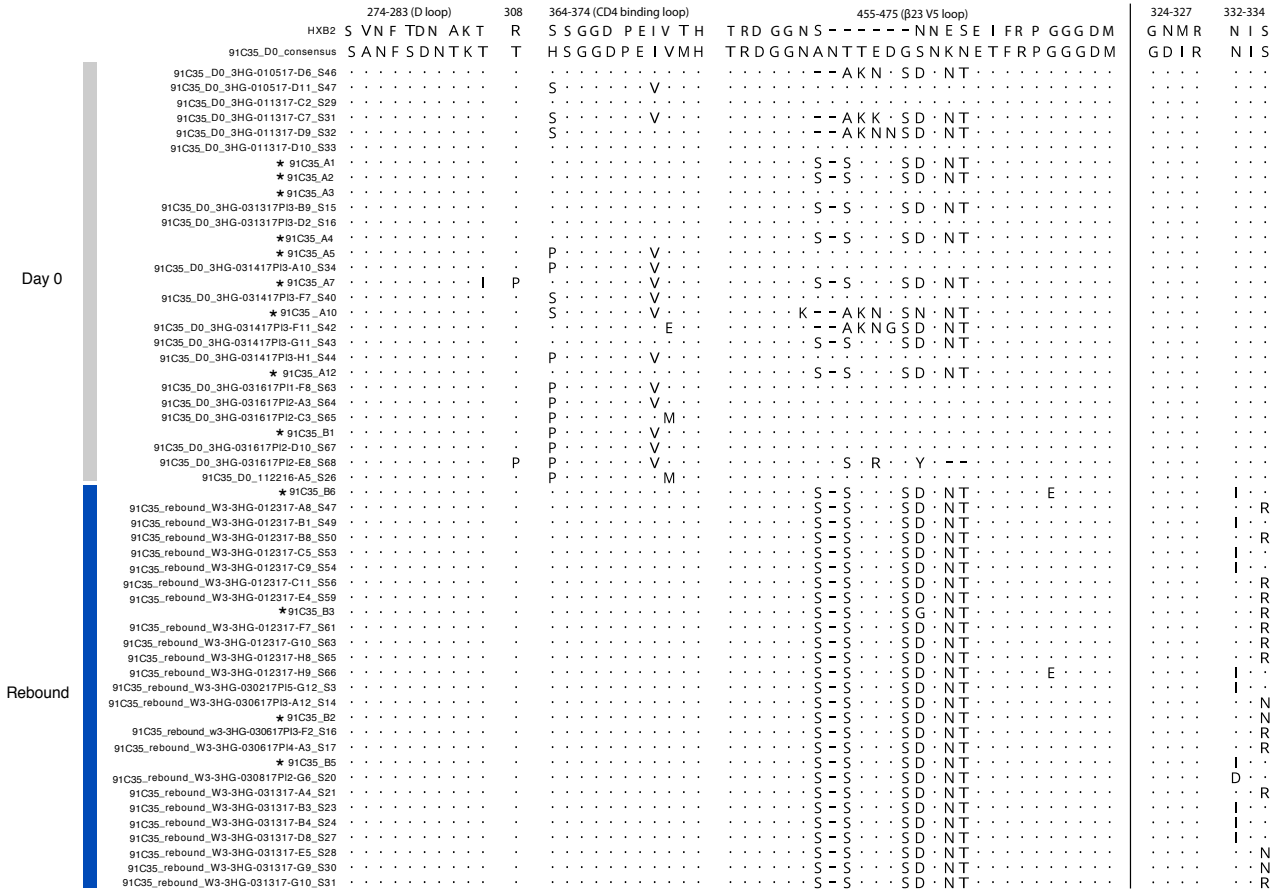
(**a**) Marginal means (least-squares means) for the fit linear mixed effects model of individuals receiving 3BNC117 + 10-1074 combination therapy (single infusion or three infusions every two weeks, 30 mg/kg each per infusion) (left) or 3BNC117 or 10-1074 monotherapy (single infusion, 30 mg/kg). Red line indicates marginal means and circles indicate viral loads. Monotherapy data are derived from previously published results in antibody-sensitive viremic individuals (3BNC117, Caskey and Klein *et al.*, *Nature* **522**, 487-491 (2015); 10-1074, Caskey, Schoofs and Gruell *et al.*, *Nat. Med.* **23**, 185-191 (2017)). Only measurements off ART are included (combination, *n*=7 up to d56, *n*=6 on d84, *n*=5 for later time points; monotherapy, *n*=19 up to d42, *n*=16 on d56, *n*=15 on d84, *n*=13 on d102 and d140, *n*=12 on d168). (**b**) Selection of linear mixed effects model to compare 3BNC117 + 10-1074 combination therapy and 3BNC117 or 10-1074 monotherapy (see (**a**)). Table shows model performances measured as Akaike information criterion for the different linear mixed effects models with time point as fixed effect. Column 'with treatment' has treatment (categories "3BNC117 + 10-1074 combination therapy" and "3BNC117 or 10-1074 monotherapy") as additional fixed effect. Correlation between time points of a participant was modeled based on the order of measurements with the models shown in the column 'correlation'. Based on the linear mixed effects model analysis using the corSymm class of the R package nlme (version 3.1-131), we observed a significant difference between 3BNC117 + 10-1074 combination therapy and 3BNC117 or 10-1074 monotherapy (*P*=0.00018).



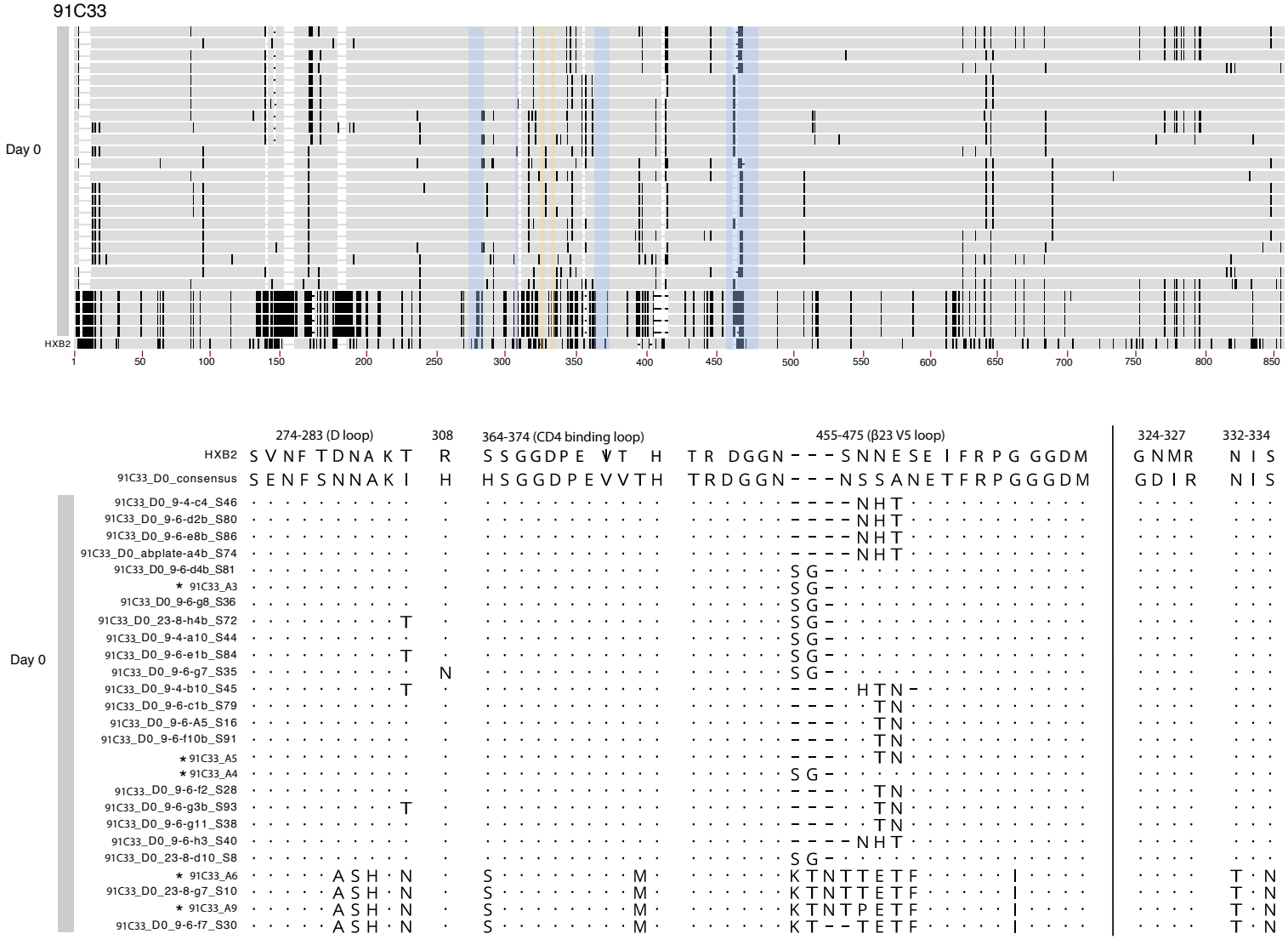
Supplementary Figure S6. *Viral sequence analysis.*
Multiple sequence alignment of Env amino acids obtained by SGA from plasma samples at day 0 and during viral rebound. Tick marks denote differences from day 0 consensus sequence. Blue shading depicts 3BNC117 binding sites and orange shading depicts 10-1074 binding sites. Sequences are numbered relative to HXB2. The bottom panel depicts the shaded areas in the upper panel. Dots depicts residues which are identical to the day 0 consensus sequence. Asterisks represents sequences that were used to generate pseudoviruseses.

Supplementary Figure S6. *Viral sequence analysis (continued)*





Supplementary Figure S6. *Viral sequence analysis (continued)*



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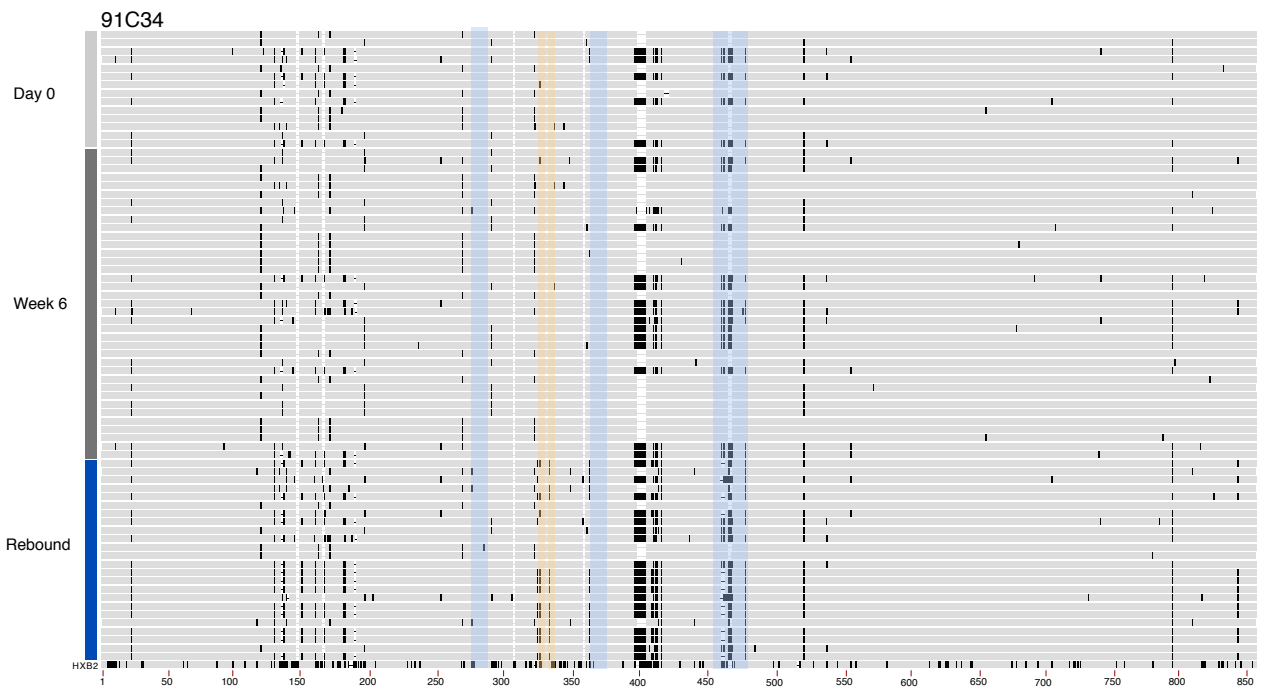
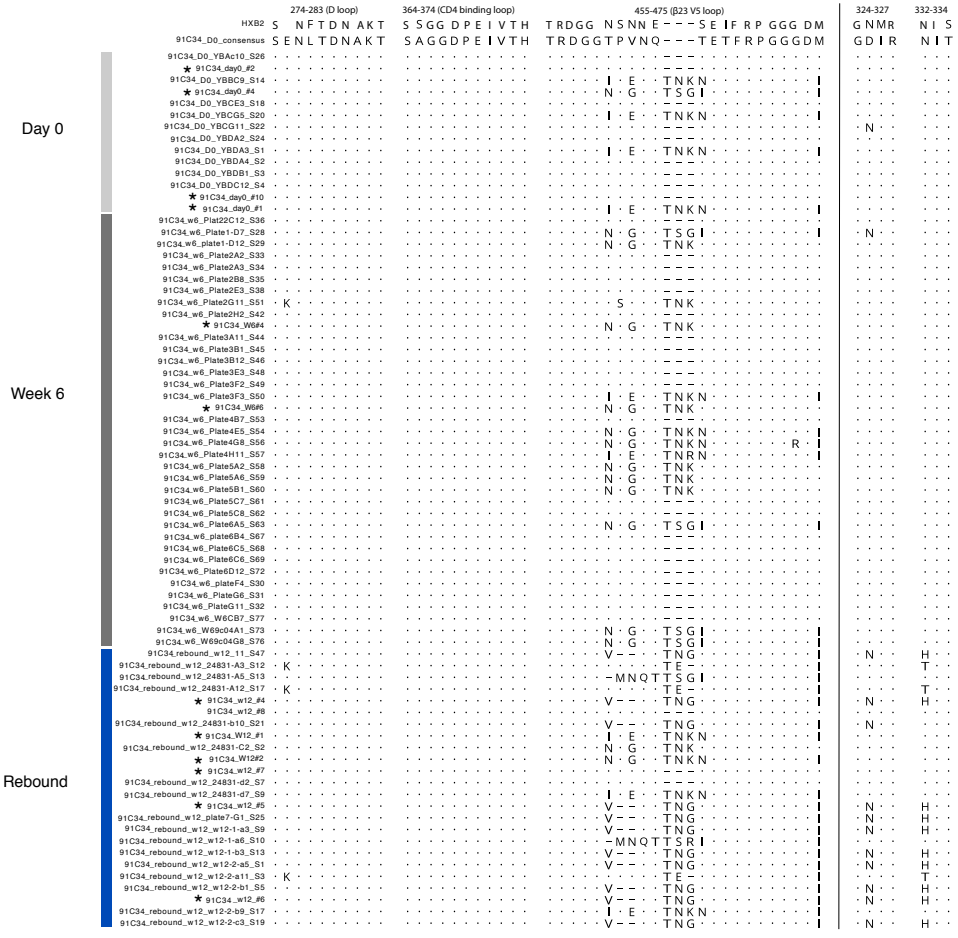
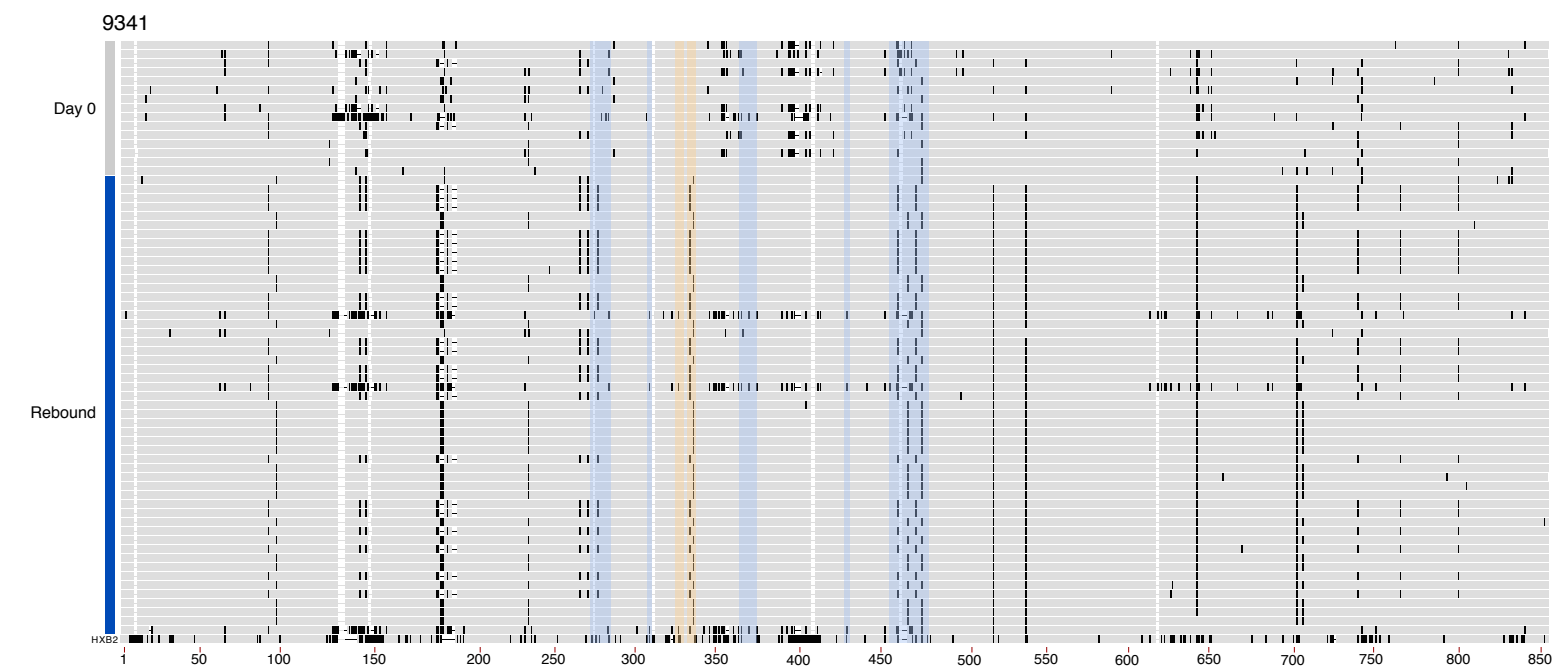
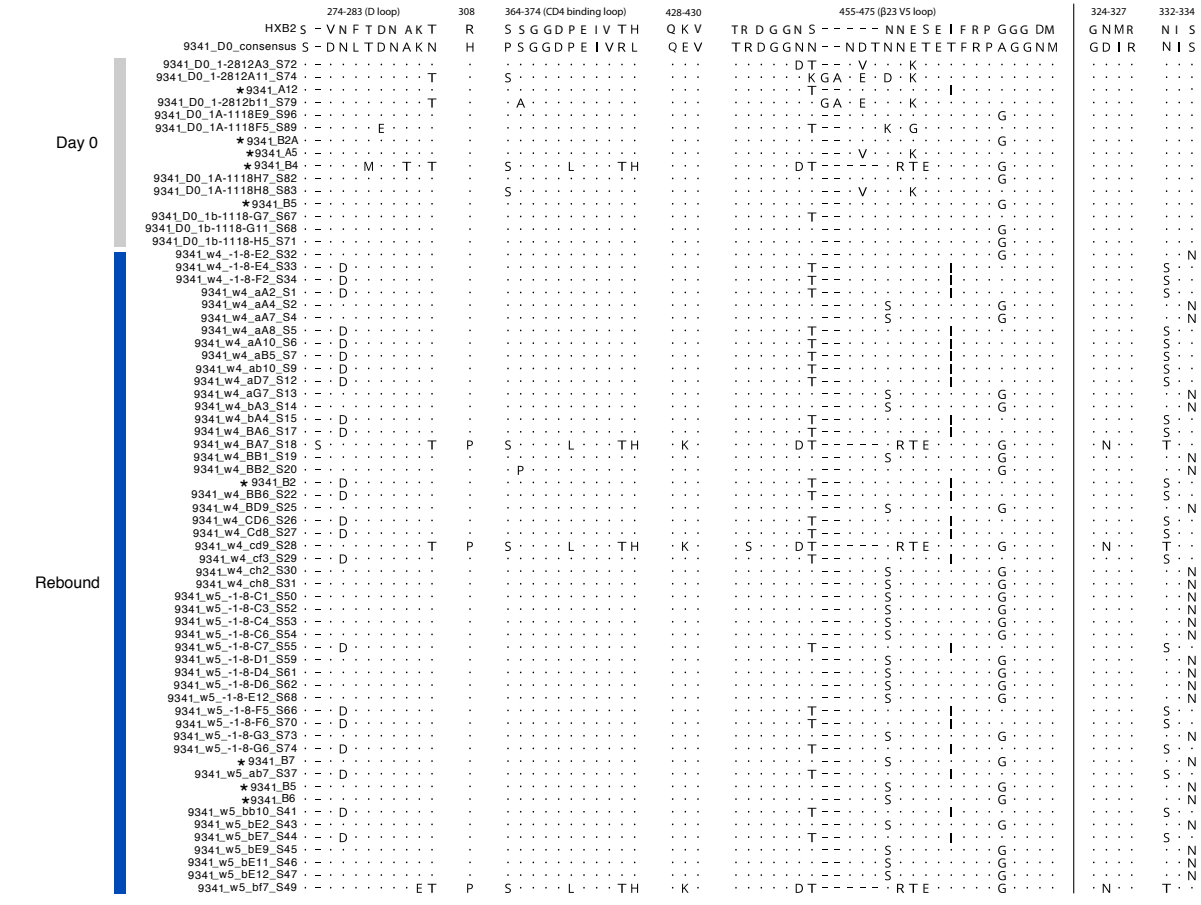




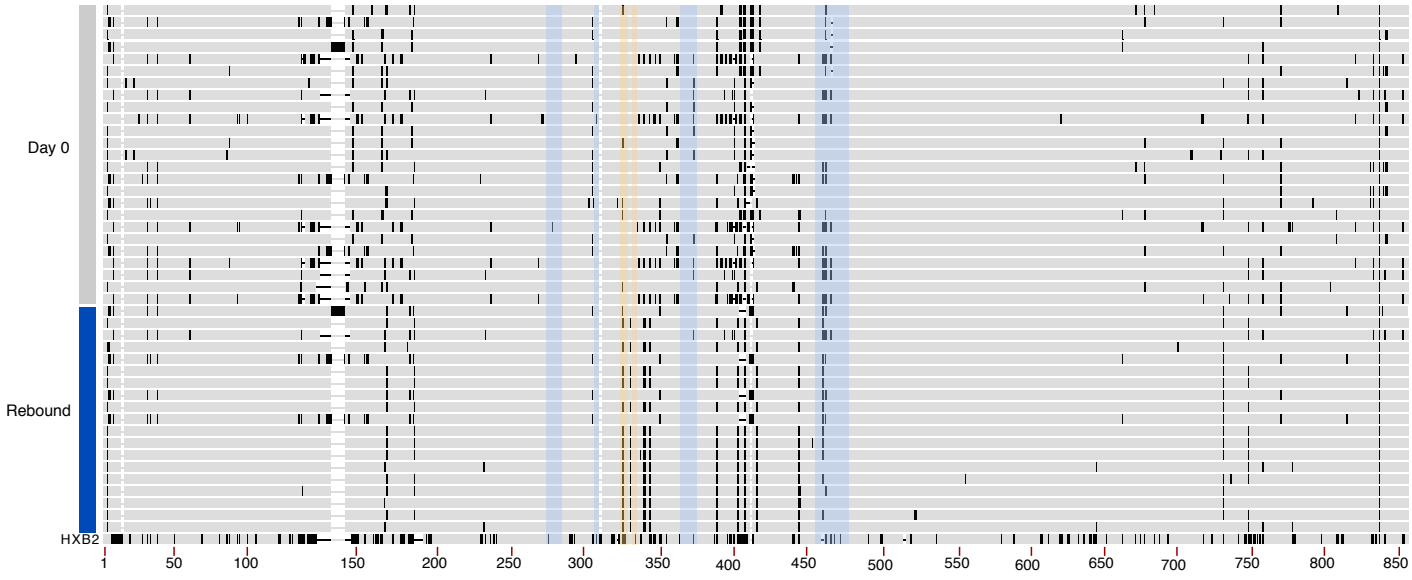
Supplementary Figure S6. *Viral sequence analysis (continued)*

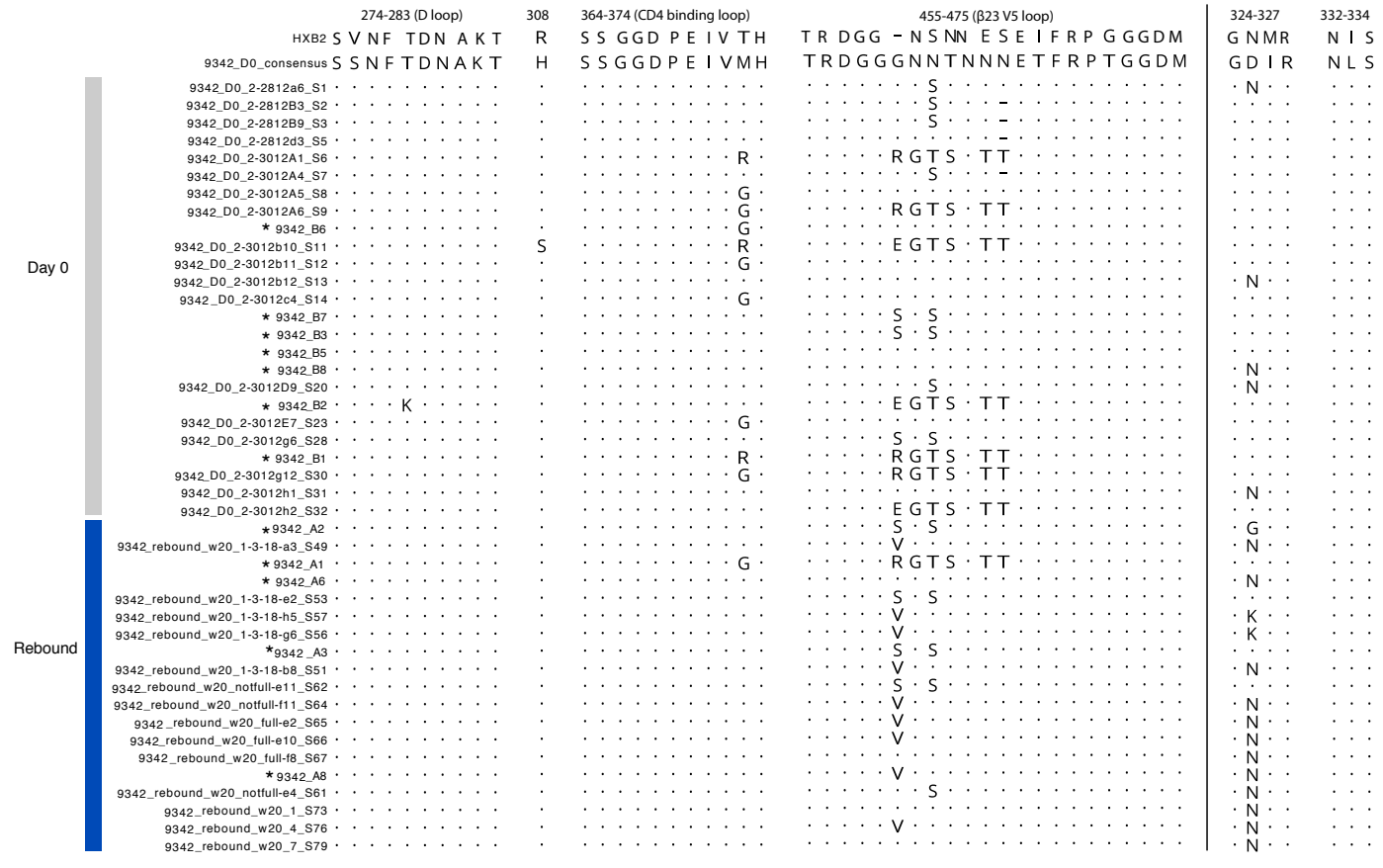




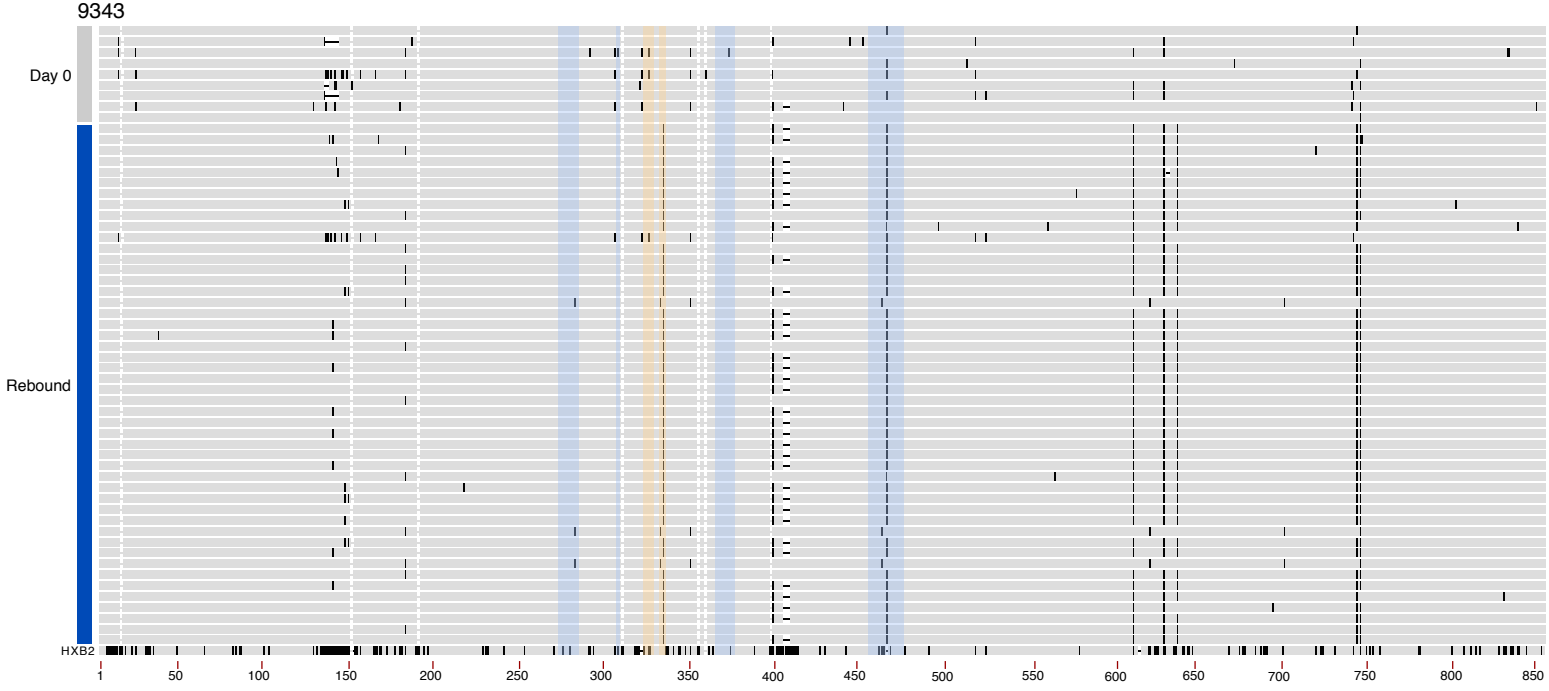
Supplementary Figure S6. *Viral sequence analysis (continued)*

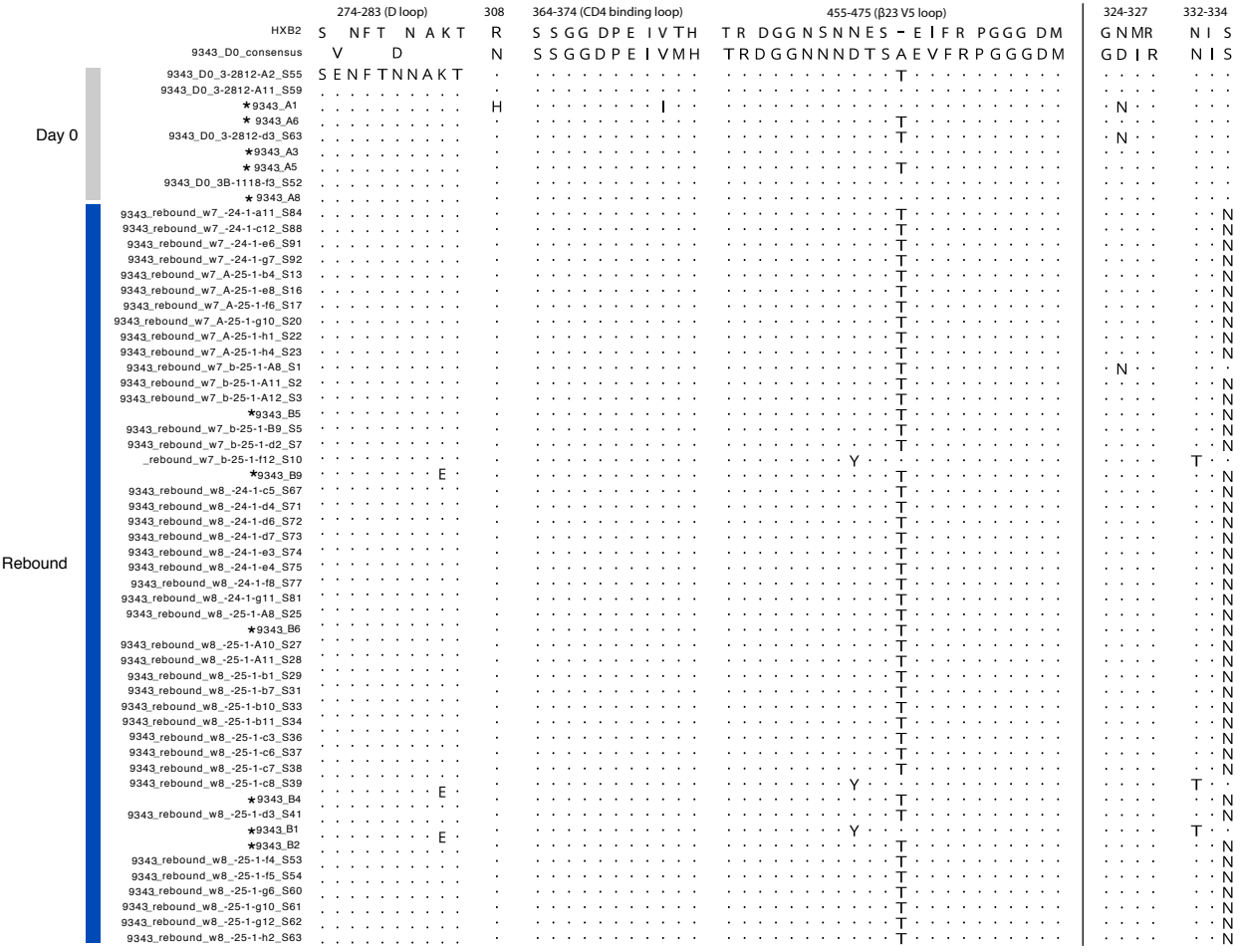
9342

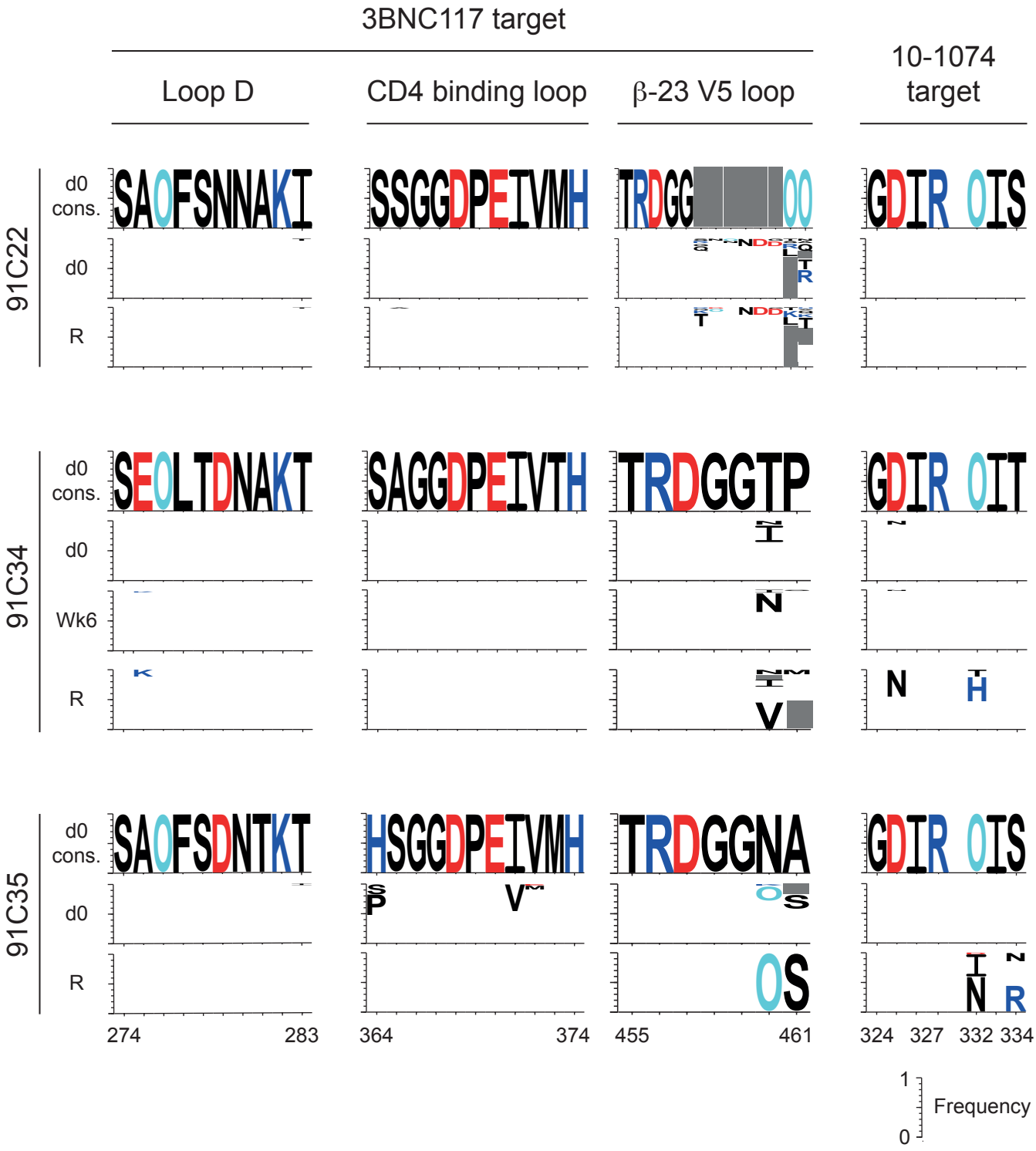




Supplementary Figure S6. *Viral sequence analysis (continued)*

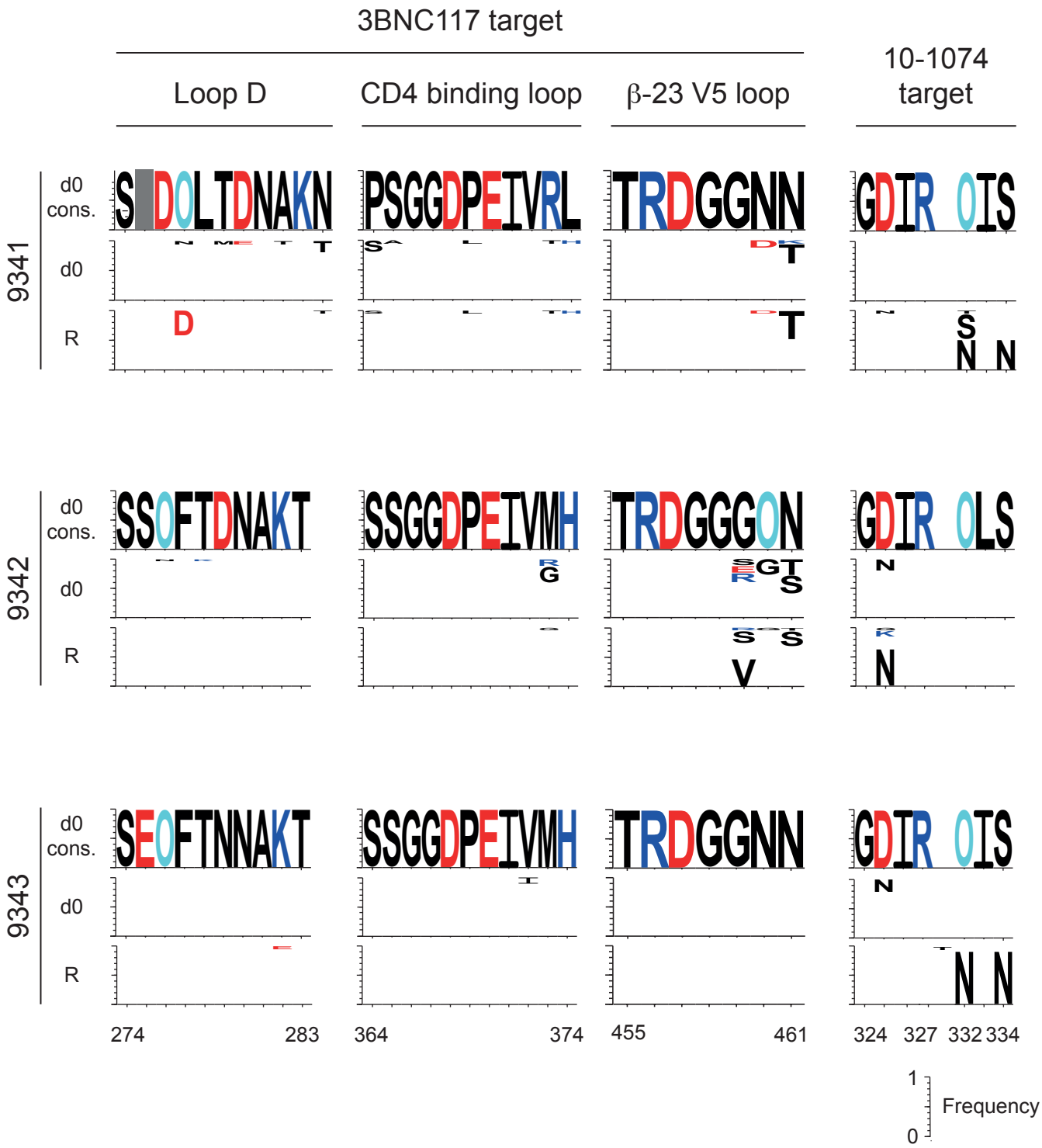






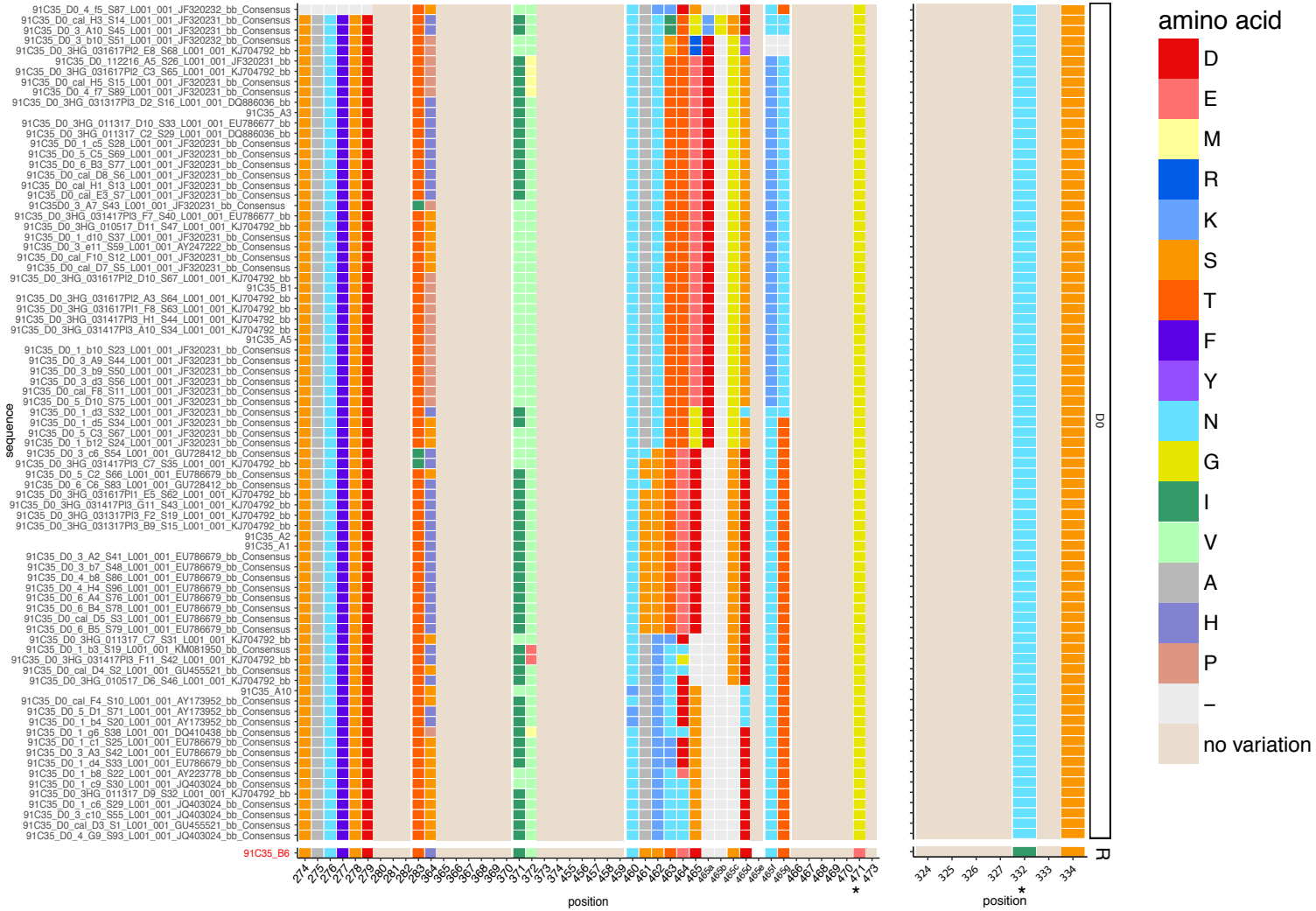
Supplementary Figure 7. *HIV-1 env sequence logo plots*

Logo plots of SGA-derived plasma HIV-1 Env amino acid frequencies at and around 3BNC117 and 10-1074 contact residues over time during 3BNC117/10-1074 combination therapy and compared to the day 0 consensus sequence (d0 cons.). Frequency is shown by the height of the letter. d0 indicates sequences obtained on day 0 pre-infusion, Wk6 indicates sequences obtained six weeks after the first antibody infusion and R indicates sequences obtained at viral rebound. White space indicates the lack of a change compared to the day 0 consensus. Single-letter amino acids highlight a change compared to day 0 and are colored for acidic (red) and basic (blue) amino acids. Turquoise “O” indicates an asparagine that acts as potential glycosylation site. Grey boxes indicate gaps. Logo plots were generated using LASSIE.



Supplementary Figure 7. *HIV-1 env sequence logo plots (continued)*

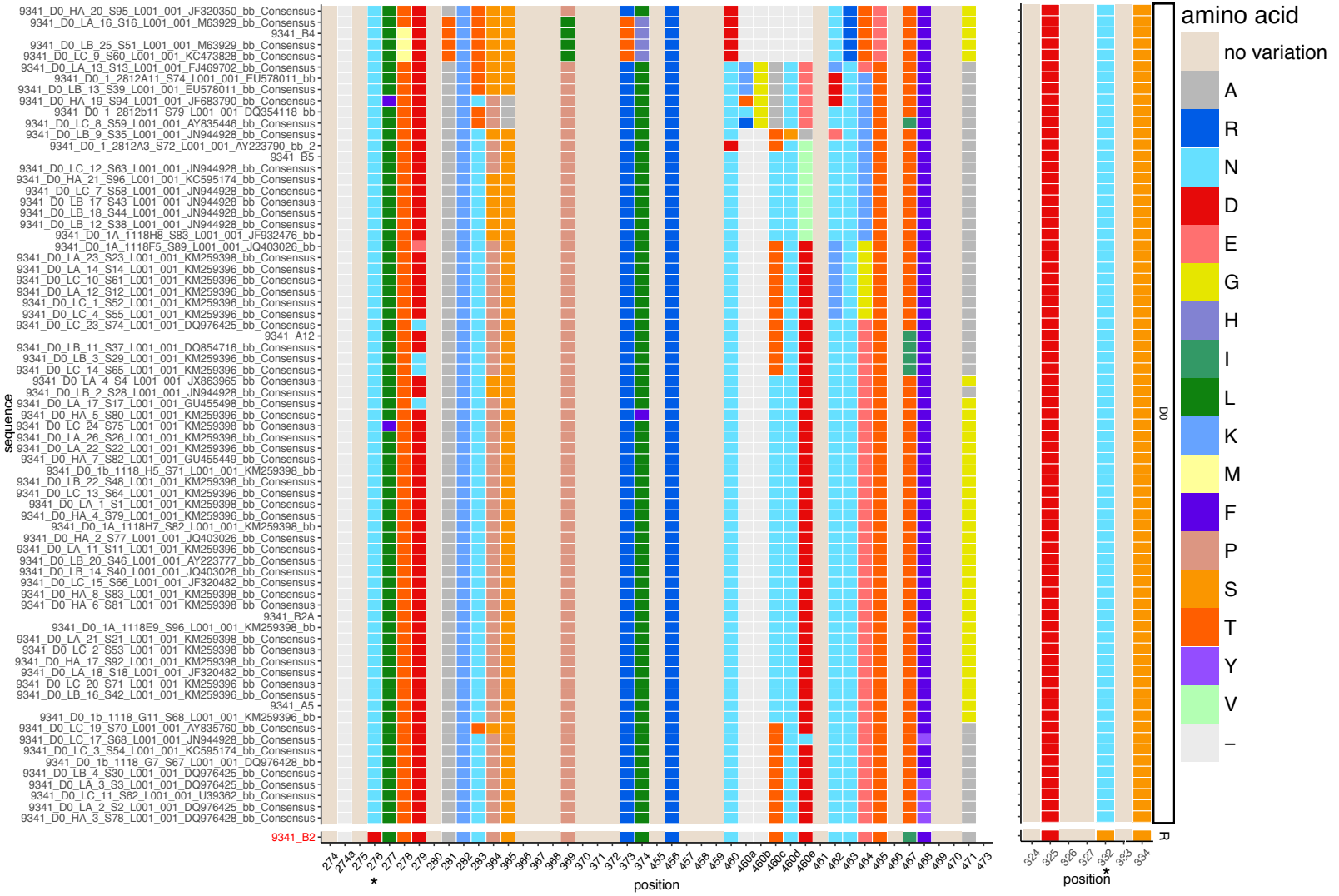
91C35



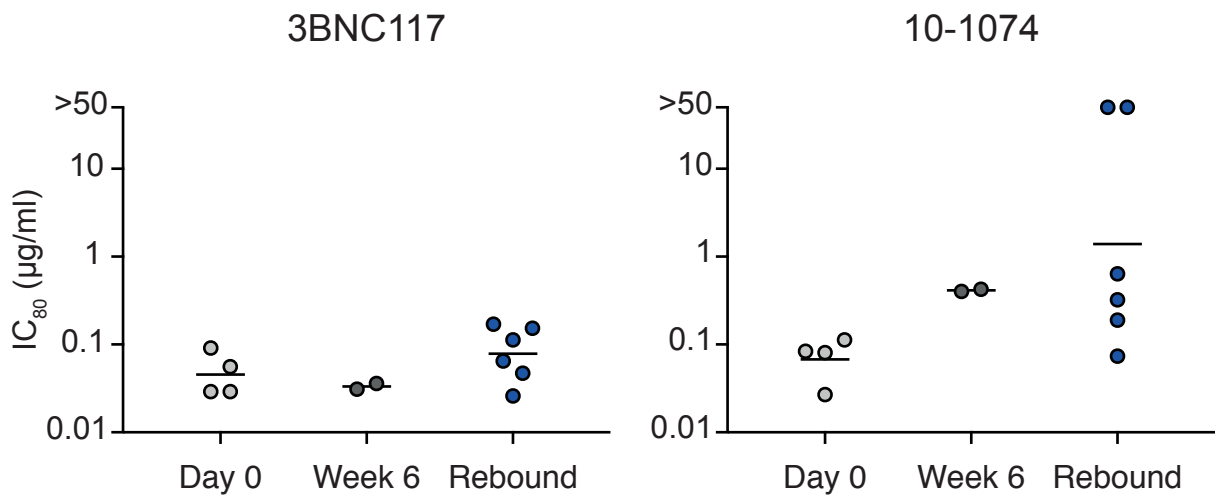
Supplementary figure S8. *In-depth analysis of 3BNC117 and 10-1074 binding site mutations in participants 91C35 and 9341*

Amino acids in and around known 3BNC117 and 10-1074 contact residues in Env sequences isolated by SGS from participants 91C35 and 9341. Amino acids are numbered according to HXB2. Upper panel shows sequences isolated from day 0 viruses and the bottom row depicts Env amino acids in resistant rebound virus. * represent instances in which an amino acid was found in the resistant rebound virus but not in day 0 sequences. The resistant rebound virus is highlighted in red.

9341



Supplementary figure S8. *In-depth analysis of 3BNC117 binding site mutations in pateints 91C35 and 9341 (continued)*



Supplementary Figure 9. *Pseudovirus sensitivities of participant 91C34*

IC_{80}s of pseudoviruses constructed from SGA-derived *env* sequences (day 0, *n*=4; week 6, *n*=2; rebound, *n*=6) obtained at the indicated time points against 3BNC117 (left) and 10-1074 (right) determined in TZM-bl neutralization assay. Line indicates geometric mean IC_{80} and each circle indicates a single pseudovirus.

Supplementary Table 1. *BNab sensitivities of bulk culture-derived viruses from viremic individuals*

a Pre-screening individual results

Trial ID	Pre-Screen ID	3BNC117 IC50	3BNC117 IC80	10-1074 IC50	10-1074 IC80	Pre-Screen ID	3BNC117 IC50	3BNC117 IC80	10-1074 IC50	10-1074 IC80
91C22	B321	0.084	0.187	0.028	0.087	0536	0.130	0.491	>20	>20
91C33	0167	0.875	2.592	0.346	0.801	0537	1.115	4.103	>20	>20
91C34	0456	0.114	0.393	0.087	0.235	0541	1.855	6.025	0.148	0.412
91C35	B315	1.018	3.382	0.037	0.097	0549	6.662	19.690	1.097	3.828
9341	B450	1.059	3.679	1.244	4.445	0561	4.108	15.937	0.324	3.192
9342	0648	0.529	1.359	0.140	0.355	0615	0.295	0.799	>20	>20
9343	0787	0.125	0.567	0.058	0.191	0771	>25	>25	>25	>25
	0034	1.341	3.704	0.029	0.069	0775	0.397	1.298	0.365	0.947
	0039	5.238	>20	>20	>20	0779	>20	>20	>20	>20
	0277	1.066	2.592	5.652	13.627	0782	>20	>20	11.543	>20
	0338	0.125	0.385	0.044	0.130	0795	>25	>25	>25	>25
	0355	4.192	13.086	0.097	0.214	0799	1.900	6.120	5.720	19.510
	0359	1.036	3.807	4.903	>20	0801	2.230	6.260	>25	>25
	0403	>20	>20	0.900	3.598	0806	>25	>25	0.480	1.920
	0422	0.318	1.070	0.003	0.008	0821	0.650	2.100	2.760	10.530
	0423	0.987	3.306	>20	>20	B270	0.720	2.791	>20	0.043
	0428	1.650	6.583	0.295	3.185	B312	>20	>20	0.861	2.047
	0438	0.761	3.165	0.016	0.060	B331	1.531	7.140	>20	>20
	0440	1.489	4.112	>20	>20	B340	0.461	1.917	>20	>20
	0464	0.313	1.099	8.282	20.000	B367	2.073	6.230	1.870	6.582
	0472	0.083	0.383	0.140	0.373	B394	1.013	5.932	0.230	1.211
	0473	0.530	1.861	0.025	0.076	B407	0.044	0.193	0.017	0.057
	0480	0.492	2.037	0.041	0.165	B411	2.018	5.255	1.357	2.958
	0508	>20	>20	>20	>20	B434	>20	>20	0.454	1.431
	0527	>20	>20	>20	>20	B461	0.250	1.161	6.029	16.394
	0535	0.334	0.989	0.187	0.704	B465	0.325	2.481	0.305	1.712

µg/ml
< 0.5
0.5 - 1.0
1.0 - 2.0
2.0 - 5.0
5.0 - 20.0
20

b Pre-screening summary

Antibody	IC_{50} <2 µg/ml	
	n	%
3BNC117	35	67.3%
10-1074	30	57.7%
3BNC117 and 10-1074	21	**40.4%**

Table indicates IC_{50}s and IC_{80}s of 3BNC117 and 10-1074 against bulk $CD4^+$ T cell outgrowth culture-derived viruses obtained from viremic HIV-1-infected individuals. (**a**) Individual culture results. (**b**) Summary of all (*n*=52) tested cultures.

Supplementary Table 2. *Individual participant baseline demographics*

Study ID	Dose / Regimen	Age (years)	Gender	Race	Years since HIV-1 diagnosis	ART at enrollment*	HIV-1 Clade	HIV-1 RNA at day 0 (copies/ml)	CD4+ T cell count at day 0 (cells/µl)	Pre-Screen Sensitivity (µg/ml)**			
										3BNC117		10-1074	
										IC50	IC80	IC50	IC80
1A12	10 mg/kg (ea.) day 0	53	F	American Indian/Hisp	23	EFV, TDF, FTC	n.d.	<20	809		-		
1A27	10 mg/kg (ea.) day 0	47	M	Black	16	RPV, TDF, FTC	n.d.	<20	648		-		
1A29	10 mg/kg (ea.) day 0	45	M	Black	16	RPV, TDF, FTC	n.d.	<20	558		-		
1A71	10 mg/kg (ea.) day 0	55	M	Black	10	EFV, TDF, FTC	n.d.	<20	1,033		-		
1B05	30 mg/kg (ea.) day 0	34	M	Black	17	EFV, TDF, FTC	n.d.	<20	711		-		
1B44	30 mg/kg (ea.) day 0	51	M	Black	18	ATV/r, TDF, FTC	n.d.	<20	754		-		
1B55	30 mg/kg (ea.) day 0	56	F	Black	25	RAL, ETR, ABC, 3TC, ZDV	n.d.	<20	814		-		
1B61	30 mg/kg (ea.) day 0	64	M	Black	19	DTG, ABC, 3TC	n.d.	<20	602		-		
91C22	30 mg/kg (ea.) day 0	58	F	Black	4	- (naïve)	B	730	586	0.084	0.187	0.028	0.087
91C33	30 mg/kg (ea.) day 0	28	M	White	5	- (naïve)	B	1,750	750	0.875	2.592	0.346	0.801
91C34	30 mg/kg (ea.) day 0	32	M	White	8	- (naïve)	B	65,800	520	0.114	0.393	0.087	0.235
91C35	30 mg/kg (ea.) day 0	26	M	Mult/Hisp	4	- (experienced)†	B	53,540	320	1.018	3.382	0.037	0.097
9341	30 mg/kg (ea.) day 0 - 14 - 28	48	F	Black	22	- (experienced)‡	B	23,610	682	1.059	3.679	1.244	4.445
9342	30 mg/kg (ea.) day 0 - 14 - 28	41	M	White	15	- (naïve)	B	2,550	780	0.529	1.359	0.140	0.355
9343	30 mg/kg (ea.) day 0 - 14 - 28	42	M	White	0.2	- (naïve)	B	97,800	350	0.125	0.567	0.058	0.191

* RPV - rilpivirine, TDF - tenofovir disoproxil fumarate, FTC - emtricitabine, EFV - efavirenz, ATV - atazanavir, /r - ritonavir-boostered, RAL - raltegravir, ETR - etravirine, ABC - abacavir, 3TC - lamivudine, ZDV - zidovudine.

** Pre-screening of virus obtained from $CD4^+$ T cell bulk outgrowth culture for antibody sensitivity by TZM-bl assay.

† 91C35 iniated ART (elvitegravir, cobicistat, TDF, FTC) within six months of presumed HIV-1 exposure. This regimen was maintained for four years until he chose to discontinue it. At the time of sensitivity screening and on the day of the first infusion, participant had been off ART for six and eight months, respectively.

‡ 9341 initiated ART within a year of diagnosis and was discontinued shortly thereafter. Since then, she had multiple periods of intermittent ART and reports receiving multiple different ART regimens. At the time of enrollment, she had been off ART for at least 12 months.

Table indicates baseline parameters of ART-treated and viremic study participants.

Supplementary Table 3. *HIV-1 RNA levels, CD4⁺ T cell counts and bNAb serum levels*

Viremic
Single infusion, day 0
3BNC117 + 10-1074 (30 mg/kg each i.v.)

91C22	HIV-1 RNA		CD4⁺ T cells		3BNC117		10-1074		
					ELISA	TZM-bl	ELISA	TZM-bl	
						Q769.d22		X2088_c9	Du422.1
Study visit	*cp/ml*	*Δlog₁₀*	*cells/µl*	*%*	*µg/ml*		*µg/ml*		
Screen	1,430	-	488	21.0	-	-	-	-	-
Wk -2 (+7d)	640	-	617	20.0	-	-	-	-	-
Day 0 baseline	730	-	586	20.0	<0.51	<0.46	<0.14	<0.08	-
Day 0 end 3BNC117	-	-	-	-	996.19	860.92	<0.14	<0.08	-
Day 0 end 10-1074	-	-	-	-	994.78	1,443.37	1,561.17	5,123.32	1,363.72
Day 2	720	-0.01	-	-	184.24	192.19	853.61	854.44	-
Wk 1	<20	-1.58*	-	-	92.64	108.93	450.08	711.26	-
Wk 2	<20	-1.58*	249	17.8	29.05	32.06	152.75	140.71	-
Wk 3	<20D	-1.58*	-	-	14.92	12.21	103.63	60.15	-
Wk 4	<20	-1.58*	456	19.0	6.31	7.48	54.22	30.21	-
Wk 6	<20D	-1.58*	-	-	1.31	1.38	13.51	10.32	-
Wk 8	<20	-1.58*	576	24.0	<0.51	<0.46	8.31	3.34	-
Wk 12 (- 4d)	70	-1.02	763	24.6	<0.51	<0.46	1.50	0.69	-
Wk 16	1,590	0.34	692	24.7	<0.51	<0.46	<0.14	<0.1	-
Wk 20 (+1d)	740	0.01	533	20.5	<0.51	<0.46	<0.14	<0.1	-
Wk 24 (+3d)	1,020	0.15	349	16.6	<0.51	<0.46	<0.14	<0.1	-

91C33	HIV-1 RNA		CD4⁺ T cells		3BNC117		10-1074		
					ELISA	TZM-bl	ELISA	TZM-bl	
						Q769.d22		X2088_c9	Du422.1
Study visit	*cp/ml*	*Δlog₁₀*	*cells/µl*	*%*	*µg/ml*		*µg/ml*		
Screen	279	-	900	20	-	-	-	-	-
Wk -2 (+3)	421	-	800	21	-	-	-	-	-
Day 0 baseline	1,750	-	750	25	<0.51	<0.46	<0.14	<0.10	-
Day 0 end 3BNC117	-	-	-	-	800.29	618.63	<0.14	<0.08	-
Day 0 end 10-1074	-	-	-	-	473.37	1,307.44	1,321.43	1,917.72	940.02
Day 2 (+1d)	839	-0.32	-	-	155.27	165.99	695.70	455.56	-
Wk 1	575	-0.48	-	-	90.31	66.24	465.64	282.67	-
Wk 2	1,040	-0.23	830	20	47.33	48.02	189.58	171.74	-
Wk 3	1,250	-0.15	-	-	30.09	63.23	180.44	113.08	-
Wk 4 (+3d)	699	-0.40	690	20	17.34	22.03	114.45	57.44	-
Wk 6	961	-0.26	-	-	6.92	5.80	62.45	27.08	-
Wk 8	1,520	-0.06	790	18	2.12	1.36	27.61	11.14	-
Wk 12 (-6d)	249	-0.85	800	19	<0.51	<0.46	14.12	3.46	-
Wk 16 (-1d)	732	-0.38	630	21	<0.51	<0.46	2.18	0.63	-
Wk 20 (+2d)	614	-0.45	860	20	<0.51	<0.46	0.58	<0.1	-
Wk 24 (+2d)	722	-0.38	860	23	<0.51	<0.28	<0.14	<0.08	-

91C34	HIV-1 RNA		CD4⁺ T cells		3BNC117		10-1074		
					ELISA	TZM-bl	ELISA	TZM-bl	
						Q769.d22		X2088_c9	Du422.1
Study visit	*cp/ml*	*Δlog₁₀*	*cells/µl*	*%*	*µg/ml*		*µg/ml*		
Screen	33,500	-	490	36	-	-	-	-	-
Wk -2 (+3)	33,900	-	500	33	-	-	-	-	-
Day 0 baseline	65,800	-	520	36	<0.51	<0.46	<0.14	<0.1	-
Day 0 end 3BNC117	-	-	-	-	735.93	905.74	<0.14	<0.08	-
Day 0 end 10-1074	-	-	-	-	665.80	945.12	889.07	1,242.07	695.70
Day 2	65,600	0.00	-	-	180.98	447.79	723.69	613.03	-
Wk 1 (+1d)	2,520	-1.42	-	-	104.13	164.31	365.53	270.02	-
Wk 2 (+2d)	1,850	-1.55	530	36	56.59	50.85	258.52	200.97	-
Wk 3 (-1d)	1,430	-1.66	-	-	41.00	55.96	208.91	181.26	-
Wk 4	1,320	-1.70	510	34	23.04	88.32	182.26	85.10	-
Wk 6 (-1d)	888	-1.87	-	-	12.68	46.87	105.43	43.24	-
Wk 8	810	-1.91	420	35	5.68	5.01	84.27	29.26	-
Wk 12 (+3d)	10,100	-0.81	340	41	1.56	<0.46	55.46	5.51	-
Wk 16	14,800	-0.65	320	36	<0.51	<0.46	3.52	1.16	-
Wk 20	14,100	-0.67	400	26	<0.51	<0.46	0.53	<0.1	-
Wk 24	24,800	-0.42	300	33	<0.51	<0.28	<0.14	<0.08	-

91C35	HIV-1 RNA		CD4⁺ T cells		3BNC117		10-1074		
					ELISA	TZM-bl	ELISA	TZM-bl	
						Q769.d22		X2088_c9	Du422.1
Study visit	*cp/ml*	*Δlog₁₀*	*cells/µl*	*%*	*µg/ml*		*µg/ml*		
Screen	22,760	-	345	27.0	-	-	-	-	-
Wk -2 (+7d)	15,120	-	382	29.0	-	-	-	-	-
Day 0 baseline	53,540	-	320	26.7	<0.51	<0.46	<0.14	<0.08	-
Day 0 end 3BNC117	-	-	-	-	611.21	716.79	<0.14	<0.08	-
Day 0 end 10-1074	-	-	-	-	739.37	1,440.54	1,224.26	1,154.49	668.26
Day 2	-	-	-	-	N/A	N/A	N/A	N/A	-
Wk 1	1,400	-1.58	-	-	94.36	82.52	385.14	265.15	-
Wk 2	5,210	-1.01	469	27.6	42.87	41.12	253.06	172.42	-
Wk 3 (+1d)	166,310	0.49	-	-	23.93	33.70	168.68	107.55	-
Wk 4	56,850	0.03	356	25.4	16.62	31.86	127.75	63.31	-
Wk 6	46,800	-0.06	-	-	6.42	5.47	51.06	29.46	-
Wk 8 (+2d)	78,420	0.17	414	28.0	2.56	2.23	23.98	8.13	-
Wk 12	33,400	-0.20	459	35.3	<0.51	1.59	7.43	2.62	-
Wk 16	N/A	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Wk 20	N/A	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Wk 24	N/A	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A

* HIV-1 RNA < 20 copies/ml. For calculation of log-change, a value of 19 copies/ml was set.
< 20D: HIV-1 RNA detected but below limit of quanitification.
Green shaded area indicates HIV-1 RNA nadir.
Grey shaded area indicates time on ART.

Table indicates clinical laboratory parameters and antibody serum concentrations as determined by ELISA and TZM-bl neutralization assay (using the indicated pseudoviruses) in viremic and ART-treated study participants.

Supplementary Table 3. *HIV-1 RNA levels, CD4⁺ T cell counts and bNAb serum levels (continued)*

Viremic
Three infusions, day 0 / 14 / 28
3BNC117 + 10-1074 (30 mg/kg each i.v.)

9341	HIV-1 RNA		CD4⁺ T cells		3BNC117		10-1074		
					ELISA	TZM-bl	ELISA	TZM-bl	
						Q769.d22		X2088_c9	Du422.1
Study visit	*cp/ml*	*Δlog₁₀*	*cells/µl*	*%*	*µg/ml*		*µg/ml*		
Screen	43,760	-	570	29	-	-	-	-	-
Wk -2 (+2d)	47,430	-	834	28	-	-	-	-	-
Day 0 baseline	23,610	-	682	28	<0.51	<0.46	<0.14	<0.10	-
Day 0 end 3BNC117	-	-	-	-	591.87	691.29	<0.14	<0.08	-
Day 0 end 10-1074	-	-	-	-	514.55	760.43	964.42	1,205.59	622.74
Day 2 (-1d)	56,930	0.38	-	-	175.43	184.83	1,172.69	705.70	-
Week 1	3,670	-0.81	-	-	65.12	65.50	467.19	354.60	-
Week 2	1,140	-1.32	783	26	28.08	34.29	230.89	142.84	-
Week 2 End 3BNC117	-	-	-	-	605.54	522.54	251.10	69.74	-
Week 2 End 10-1074	-	-	-	-	464.40	710.17	1,618.91	956.97	661.21
Day 16 (-1d)	1,280	-1.27	-	-	206.52	192.74	1,134.66	802.17	-
Week 3	1,970	-1.08	-	-	79.20	65.73	704.27	351.66	-
Week 4 (+2d)	20,910	-0.05	655	27	25.90	37.38	272.58	161.28	-
Week 4 End 3BNC117	-	-	-	-	778.41	662.16	238.07	87.72	-
Week 4 End 10-1074	-	-	-	-	616.46	908.73	1,608.18	1,164.13	958.44
Day 30 (+2d)	27,210	0.06	-	-	158.75	176.71	1,085.61	686.97	-
Week 5	33,530	0.15	-	-	103.16	129.10	864.85	414.15	-
Week 6 (+1d)	30,860	0.12	889	34	41.43	92.51	372.33	208.83	-
Week 7	41,480	0.24	-	-	23.49	44.78	200.72	114.37	-
Week 8 (+1d)	34,130	0.16	-	-	12.36	15.36	132.56	66.99	-
Week 10 (+1d)	43,670	0.27	-	-	3.92	2.99	57.63	22.16	-
Week 12	28,070	0.08	815	29	1.17	1.47	29.98	9.12	-
Week 16 (-5d)	41,270	0.24	525	31	<0.51	0.64	5.44	2.08	-
Week 20	38,220	0.21	529	25	<0.51	0.48	1.48	0.42	-
Week 28	38,300	0.21	707	27	<0.51	<0.28	<0.14	<0.08	-

9342	HIV-1 RNA		CD4⁺ T cells		3BNC117		10-1074		
					ELISA	TZM-bl	ELISA	TZM-bl	
						Q769.d22		X2088_c9	Du422.1
Study visit	*cp/ml*	*Δlog₁₀*	*cells/µl*	*%*	*µg/ml*		*µg/ml*		
Screen	12,600	-	780	37	-	-	-	-	-
Wk -2 (+6d)	6,510	-	1,150	39	-	-	-	-	-
Day 0 baseline	2,550	-	780	37	<0.51	<0.46	<0.14	<0.1	-
Day 0 end 3BNC117	-	-	-	-	906.30	598.56	<0.14	<0.08	-
Day 0 end 10-1074	-	-	-	-	640.24	1,387.82	1,899.04	991.55	1,050.85
Day 2 (+1d)	3,650	0.16	-	-	150.29	157.32	1,070.88	383.33	-
Week 1	331	-0.89	-	-	95.67	99.11	709.76	350.58	-
Week 2	39	-1.82	1,040	39	51.07	143.38	377.23	115.40	-
Week 2 End 3BNC117	-	-	-	-	822.47	1,187.98	378.85	192.30	-
Week 2 End 10-1074	-	-	-	-	685.45	1,524.62	1,859.48	648.58	958.98
Day 16 (+1d)	61	-1.62	-	-	197.35	248.52	1,357.52	500.25	-
Week 3	45	-1.75	-	-	109.53	141.15	836.22	364.62	-
Week 4	25	-2.01	1,140	41	66.94	59.73	555.68	255.74	-
Week 4 End 3BNC117	-	-	-	-	907.46	612.74	570.14	346.48	-
Week 4 End 10-1074	-	-	-	-	751.33	1,604.27	2,281.04	3,298.12	929.24
Day 30 (+1d)	55	-1.67	-	-	212.77	396.80	1,456.90	1,948.69	-
Week 5	<20 D	-2.13*	-	-	119.35	145.15	906.38	666.54	-
Week 6	24	-2.03	870	39	76.63	148.56	454.16	499.36	-
Week 7	<20 D	-2.13*	-	-	47.02	91.86	393.01	400.05	-
Week 8	24	-2.03	-	-	32.11	29.37	323.64	285.06	-
Week 10	32	-1.90	-	-	15.28	15.71	197.13	87.75	-
Week 12	<20	-2.13*	800	39	7.61	3.25	130.64	56.27	-
Week 16	55	-1.67	900	44	4.86	<0.462	30.80	6.13	-
Week 20	645	-0.60	1,066	41	<0.78	<0.28	8.86	1.60	-
Week 28 (-1d)	3,780	0.17	900	40	<0.51	<0.26	<0.41	<0.08	-

9343	HIV-1 RNA		CD4⁺ T cells		3BNC117		10-1074		
					ELISA	TZM-bl	ELISA	TZM-bl	
						Q769.d22		X2088_c9	Du422.1
Study visit	*cp/ml*	*Δlog₁₀*	*cells/µl*	*%*	*µg/ml*		*µg/ml*		
Screen	95,400	-	410	34	-	-	-	-	-
Wk -2 (+5d)	91,000	-	380	35	-	-	-	-	-
Day 0 baseline	97,800	-	350	39	<0.51	<0.46	<0.14	<0.1	-
Day 0 end 3BNC117	-	-	-	-	708.31	704.45	<0.14	<0.08	-
Day 0 end 10-1074	-	-	-	-	646.99	1,302.26	1,854.69	1,948.61	1,002.88
Day 2	60,100	-0.21	-	-	140.54	270.87	852.16	705.63	-
Week 1	1,880	-1.72	-	-	89.38	106.08	546.67	632.45	-
Week 2 (-2d)	1,200	-1.91	400	40	51.85	61.30	352.90	256.46	-
Week 2 End 3BNC117	-	-	-	-	723.18	524.50	436.11	168.51	-
Week 2 End 10-1074	-	-	-	-	644.86	1,457.60	1,639.91	1,511.34	830.01
Day 16 (-2d)	808	-2.08	-	-	185.87	398.94	1,271.33	771.96	-
Week 3 (-3d)	359	-2.44	-	-	118.57	189.64	944.48	878.39	-
Week 4 (+1d)	335	-2.47	350	39	61.31	70.56	487.90	257.37	-
Week 4 End 3BNC117	-	-	-	-	898.03	689.28	478.73	285.73	-
Week 4 End 10-1074	-	-	-	-	556.75	1,976.30	2,051.38	1,486.18	n.d.
Day 30	373	-2.42	-	-	215.08	786.85	1,398.07	2,797.41	-
Week 5	265	-2.57	-	-	134.37	97.78	1,008.78	531.42	-
Week 6	660	-2.17	520	39	112.40	51.56	677.90	235.62	-
Week 7	3,660	-1.43	-	-	72.81	19.32	467.60	159.35	-
Week 8 (-1d)	12,000	-0.91	-	-	55.72	23.49	305.69	151.33	-
Week 10 (+1d)	22	-	-	-	20.52	15.88	223.08	59.75	-
Week 12	<20D	-	370	40	10.84	4.94	107.82	37.16	-
Week 16	<20	-	444	39	4.64	1.16	51.12	7.88	-
Week 20	<20	-	430	38	0.82	<0.26	13.67	2.59	-
Week 28	<20	-	350	35	<0.51	<0.26	2.36	0.62	-

* HIV-1 RNA < 20 copies/ml. For calculation of log-change, a value of 19 copies/ml was set.
< 20D: HIV-1 RNA detected but below limit of quanitification.
Green shaded area indicates HIV-1 RNA nadir.
Grey shaded area indicates time on ART.

Supplementary Table 3. *HIV-1 RNA levels, CD4⁺ T cell counts and bNAb serum levels (continued)*

On ART
Single infusion, day 0
3BNC117 + 10-1074 (10 mg/kg each i.v.)

1A12	HIV-1 RNA	CD4⁺ T cells		3BNC117		10-1074		
				ELISA	TZM-bl	ELISA	TZM-bl	
					Q769.d22		X2088_c9	Du422.1
Study visit	*cp/ml*	*cells/µl*	*%*	*µg/ml*		*µg/ml*		
Screen	<20	505	42.0	-	-	-	-	-
Wk -2 (pre-infusion)	<20	556	43.0	-	-	-	-	-
Day 0 baseline	<20	558	42.9	<0.51	<0.88	0.43*	<0.22	-
Day 0 end 3BNC117	-	-	-	306.43	253.08	<0.41	<0.27	-
Day 0 end 10-1074	-	-	-	260.33	192.17	474.87*	281.05	-
Day 2	<20	-	-	74.25	59.90	323.39*	205.32	-
Wk 1	<20	-	-	33.12	18.00	191.53*	102.06	-
Wk 2	<20	691	43.2	20.35	12.33	139.84*	48.48	-
Wk 3	<20	-	-	14.01	9.02	91.62*	47.17	-
Wk 4	<20	558	42.9	10.20	5.44	65.02*	21.68	-
Wk 6	<20	-	-	4.39	3.01	40.93*	17.25	-
Wk 8	<20	440	44.0	2.38	1.22	18.04*	7.45	-
Wk 12	<20	534	44.5	0.88	<0.91	6.93*	1.48	-
Wk 16	<20	566	43.5	<0.51	<0.91	bkg*	<0.25	-
Wk 20	<20	639	42.6	<0.51	<0.91	bkg*	<0.25	-
Wk 24	<20	538	44.8	<0.51	<0.91	<0.41	<0.25	-

1A27	HIV-1 RNA	CD4⁺ T cells		3BNC117		10-1074		
				ELISA	TZM-bl	ELISA	TZM-bl	
					Q769.d22		X2088_c9	Du422.1
Study Visit	*cp/ml*	*cells/µl*	*%*	*µg/ml*		*µg/ml*		
Screen	<20	780	39.0	-	-	-	-	-
Wk -2 (pre-infusion)	<20	967	40.3	-	-	-	-	-
Day 0 baseline	<20	1,033	39.8	1.17*	<0.88	<0.14	<0.22	-
Day 0 end 3BNC117	-	-	-	197.25*	199.52	<0.14	<0.27	-
Day 0 end 10-1074	-	-	-	127.91*	84.55	217.43	179.35	-
Day 2	<20D	-	-	39.51*	29.84	151.20	126.12	-
Wk 1	<20	-	-	22.15*	14.05	97.38	68.12	-
Wk 2	<20	971	42.2	15.60*	7.89	76.31	38.78	-
Wk 3	<20	-	-	8.48*	5.79	46.90	29.10	-
Wk 4	<20	1,210	43.0	5.54*	2.77	31.86	18.99	-
Wk 6	<20	-	-	bkg*	<1.11	20.08	11.10	-
Wk 8	<20	844	40.2	bkg*	<0.91	11.62	2.87	-
Wk 12	<20	1,350	42.2	bkg*	<0.91	3.82	1.23	-
Wk 16	30	1,405	43.9	bkg*	<0.91	1.10	0.53	-
Wk 20	<20	1,592	41.9	bkg*	<0.91	0.54	<0.25	-
Wk 24	<20	1,229	45.5	<0.51	<0.91	<0.14	<0.25	-

1A29	HIV-1 RNA	CD4⁺ T cells		3BNC117		10-1074		
				ELISA	TZM-bl	ELISA	TZM-bl	
					Q769.d22		X2088_c9	Du422.1
Study Visit	*cp/ml*	*cells/µl*	*%*	*µg/ml*		*µg/ml*		
Screen	<20	518	32.4	-	-	-	-	-
Wk -2 (pre-infusion)	<20	388	35.3	-	-	-	-	-
Day 0 baseline	<20	648	36.0	<0.51	<0.88	<0.14	<0.22	-
Day 0 end 3BNC117	-	-	-	228.08	184.64	<0.14	<0.28	-
Day 0 end 10-1074	-	-	-	187.44	127.30	326.19	246.88	-
Day 2	<20	-	-	39.82	32.06	140.18	109.65	-
Wk 1	<20	-	-	26.01	12.10	116.08	59.57	-
Wk 2	<20	794	36.1	17.91	8.79	93.34	56.12	-
Wk 3	<20	-	-	12.67	9.52	63.90	47.62	-
Wk 4	<20	741	34.0	8.55	4.71	41.98	22.84	-
Wk 6	<20	-	-	5.55	2.51	31.46	15.91	-
Wk 8	<20	596	33.1	2.71	1.22	18.52	8.87	-
Wk 12	<20	667	35.1	1.02	<0.91	14.89	4.16	-
Wk 16	<20	676	35.6	<0.51	<0.91	4.64	1.64	-
Wk 20	<20	892	34.3	<0.51	<0.91	1.91	0.74	-
Wk 24	<20D	956	35.4	<0.51	<0.91	0.99	0.39	-

1A71	HIV-1 RNA	CD4⁺ T cells		3BNC117		10-1074		
				ELISA	TZM-bl	ELISA	TZM-bl	
					Q769.d22		X2088_c9	Du422.1
Study Visit	*cp/ml*	*cells/µl*	*%*	*µg/ml*		*µg/ml*		
Screen	<20	478	36.8	-	-	-	-	-
Wk -2 (pre-infusion)	<20	552	34.5	-	-	-	-	-
Day 0 baseline	<20	358	35.8	<0.51	<0.88	<0.14	<0.22	-
Day 0 end 3BNC117	-	-	-	169.68	164.67	<0.14	<0.28	-
Day 0 end 10-1074	-	-	-	117.29	89.49	382.39	201.53	-
Day 2	<20	-	-	49.08	34.85	270.88	166.39	-
Wk 1	<20	-	-	24.48	14.14	164.63	56.31	-
Wk 2	<20	461	38.0	16.12	9.47	138.58	44.15	-
Wk 3	<20	-	-	12.11	8.02	102.34	30.65	-
Wk 4	<20	650	43.3	7.11	3.08	62.63	18.28	-
Wk 6	<20	-	-	5.91	1.95	46.15	15.37	-
Wk 8	<20	418	38.0	2.81	<0.91	28.89	7.23	-
Wk 12	<20	467	38.9	1.38	<0.91	10.95	3.24	-
Wk 16	<20D	458	41.6	<0.51	<0.91	4.58	1.34	-
Wk 20	<20	458	38.2	<0.51	<0.91	1.89	0.52	-
Wk 24	<20	429	39.0	<0.51	<0.91	0.66	<0.25	-

* Number in red indicates background levels detected by ELISA at baseline that are subtracted from all subsequent values.
bkg indicates time points with a detectable signal within a 3-fold range of the baseline background level.
< 20D: HIV-1 RNA detected but below limit of quanitification.
Grey shaded area indicates time on ART.

Supplementary Table 3. *HIV-1 RNA levels, CD4⁺ T cell counts and bNAb serum levels (continued)*

On ART
Single infusion, day 0
3BNC117 + 10-1074 (30 mg/kg each i.v.)

1B05	HIV-1 RNA	CD4⁺ T cells		3BNC117		10-1074		
				ELISA	TZM-bl	ELISA	TZM-bl	
					Q769.d22		X2088_c9	Du422.1
Study Visit	*cp/ml*	*cells/µl*	*%*	*µg/ml*		*µg/ml*		
Screen	<20	830	35.0	-	-	-	-	-
Wk -2 (pre-infusion)	<20	843	34.0	-	-	-	-	-
Day 0 baseline	<20	711	37.4	<0.51	<0.88	<0.14	<0.22	-
Day 0 end 3BNC117	-	-	-	1,298.73	1,045.69	<0.14	<0.28	-
Day 0 end 10-1074	-	-	-	481.98	323.18	915.08	952.08	500.20
Day 2	<20	-	-	281.88	208.81	1,486.91	781.03	-
Wk 1	<20	-	-	147.17	47.28	663.37	396.49	-
Wk 2	<20	830	34.6	118.27	41.48	557.30	258.98	-
Wk 3	<20	-	-	61.36	37.63	354.79	147.58	-
Wk 4	<20	963	34.4	40.15	14.82	210.45	82.94	-
Wk 6	<20	-	-	21.00	10.58	120.48	60.10	-
Wk 8	<20	727	34.6	10.28	5.30	72.39	26.64	-
Wk 12	30	854	35.6	3.01	0.95	29.58	5.72	-
Wk 16	<20	865	34.6	1.00	<0.91	7.91	1.23	-
Wk 20	<20D	902	35.0	<0.51	<0.91	2.05	0.30	-
Wk 24	<20D	966	34.5	<0.51	<0.91	0.62	<0.25	-

1B44	HIV-1 RNA	CD4⁺ T cells		3BNC117		10-1074		
				ELISA	TZM-bl	ELISA	TZM-bl	
					Q769.d22		X2088_c9	Du422.1
Study Visit	*cp/ml*	*cells/µl*	*%*	*µg/ml*		*µg/ml*		
Screen	<20D	625	28.0	-	-	-	-	-
Wk -2 (pre-infusion)	<20D	432	27.0	-	-	-	-	-
Day 0 baseline	<20	754	31.4	<0.51	<0.88	<0.14	<0.22	-
Day 0 end 3BNC117	-	-	-	1,062.42	791.00	<0.14	<0.28	-
Day 0 end 10-1074	-	-	-	837.40	532.67	1,107.92	2,189.62	613.42
Day 2	<20	-	-	228.66	242.26	807.98	914.41	-
Wk 1	<20D	-	-	100.12	45.24	367.80	412.46	-
Wk 2	30	653	27.2	44.02	30.24	209.61	150.12	-
Wk 3	<20	-	-	27.16	12.69	149.04	65.75	-
Wk 4	<20	737	27.3	13.66	7.03	91.36	48.47	-
Wk 6	60	-	-	5.87	1.95	42.68	15.71	-
Wk 8	60	620	29.5	1.97	<0.91	17.87	4.13	-
Wk 12	20	511	28.4	<0.51	<0.91	4.75	1.09	-
Wk 16	<20D	637	27.7	<0.51	<0.91	2.07	0.57	-
Wk 20	<20D	647	30.8	<0.51	<0.91	<0.41	<0.25	-
Wk 24	<20D	592	29.6	<0.51	<0.91	<0.14	<0.25	-

1B55	HIV-1 RNA	CD4⁺ T cells		3BNC117		10-1074		
				ELISA	TZM-bl	ELISA	TZM-bl	
					Q769.d22		X2088_c9	Du422.1
Study Visit	*cp/ml*	*cells/µl*	*%*	*µg/ml*		*µg/ml*		
Screen	<20	575	34.0	-	-	-	-	-
Wk -2 (pre-infusion)	<20D	763	35.0	-	-	-	-	-
Day 0 baseline	<20	634	37.3	2.68*	<0.88	<0.14	<0.22	-
Day 0 end 3BNC117	-	-	-	1282.13*	955.36	<0.14	<0.28	-
Day 0 end 10-1074	-	-	-	1316.73*	775.93	1,110.10	1,070.39	954.18
Day 2	<20	-	-	199.22*	154.53	688.89	645.71	-
Wk 1	<20	-	-	140.52*	61.74	488.55	327.15	-
Wk 2	<20	409	34.1	80.01*	31.14	318.25	179.07	-
Wk 3	<20	-	-	51.36*	28.72	221.56	142.75	-
Wk 4	<20	560	35.0	31.38*	10.52	171.94	80.41	-
Wk 6	<20	-	-	17.93*	7.29	102.91	47.29	-
Wk 8	<20	680	37.8	10.06*	3.22	57.89	24.78	-
Wk 12	<20	707	39.3	bkg*	ND	22.65	ND	-
Wk 16	<20	760	38.0	bkg*	<0.91	8.14	2.15	-
Wk 20	<20	425	35.4	bkg*	<0.91	3.03	0.79	-
Wk 24	<20	905	43.1	bkg*	ND	1.25	ND	-

1B61	HIV-1 RNA	CD4⁺ T cells		3BNC117		10-1074		
				ELISA	TZM-bl	ELISA	TZM-bl	
					Q769.d22		X2088_c9	Du422.1
Study Visit	*cp/ml*	*cells/µl*	*%*	*µg/ml*		*µg/ml*		
Screen	<20D	449	34.5	-	-	-	-	-
Wk -2 (pre-infusion)	<20D	619	32.6	-	-	-	-	-
Day 0 baseline	<20	602	35.4	<0.51	<0.88	<0.14	<0.22	-
Day 0 end 3BNC117	-	-	-	987.11	754.17	<0.14	<0.28	-
Day 0 end 10-1074	-	-	-	653.74	707.29	984.32	713.26	456.89
Day 2	<20	-	-	182.35	149.24	706.38	709.00	-
Wk 1	<20	-	-	96.75	66.41	402.61	336.79	-
Wk 2	<20	285	28.5	69.99	25.70	284.87	178.69	-
Wk 3	<20	-	-	46.82	26.44	204.69	115.93	-
Wk 4	<20	686	36.1	28.47	13.46	156.18	64.06	-
Wk 6	<20	-	-	20.73	9.13	110.30	47.55	-
Wk 8	<20	492	32.8	8.08	2.99	70.46	27.80	-
Wk 12	30	679	37.7	1.27	<0.91	34.42	12.78	-
Wk 16	<20D	566	35.4	<0.51	<0.91	16.65	3.97	-
Wk 20	<20	515	34.3	<0.51	<0.91	6.20	1.27	-
Wk 24	<20	675	35.5	<0.51	<0.91	2.52	0.93	-

* Number in red indicates background levels detected by ELISA at baseline that are subtracted from all subsequent values.
bkg indicates time points with a detectable signal within a 3-fold range of the baseline background level.
< 20D: HIV-1 RNA detected but below limit of quanitification.
Grey shaded area indicates time on ART.
ND: Not determined because of detectable activity (ID_{50} > 20) against MuLV negative control.

Supplementary Table 4. *Adverse events reported during study follow-up*

Adverse Event (AE)	AEs	Severity Grade			Participants of *n*=15
	(no.)	Mild *(no.)*	Moderate *(no.)*	Severe *(no.)*	*(no.)*
Related to 3BNC117 + 10-1074					
Nausea	1	1	0	0	1
Transaminitis	1	1	0	0	1
Upper respiratory tract infection	1	1	0	0	1
Total related	**3**	**3**	**0**	**0**	**3**
Not related to 3BNC117 + 10-1074					
Gonorrhea	2	0	2	0	2
Upper respiratory tract infection	2	1	0	0	2
Abdominal distension	1	1	0	0	1
Agitation	1	1	0	0	1
Altered mental status*	1	0	0	1	1
Common cold	1	1	0	0	1
Headache	1	1	0	0	1
Hypoglycemia	1	1	0	0	1
Increase in direct bilirubin**	1	n/a	n/a	2	1
Mycoplasma urethritis	1	0	1	0	1
Sore thoat	1	1	0	0	1
Vomiting	1	0	1	0	1
Worsening of tinea pedis	1	0	1	0	1
Total Not related	**15**	**7**	**5**	**3**	**6**
Total	**18**	**10**	**5**	**3**	**9**

* One participant experienced altered mental status due to drug intoxication with gamma-hydroxybutyric acid (GHB).
** One participant noted to have transient elevation to 0.3 mg/dL one week after first mAb infusions, and 0.4 mg/dL 24 weeks after last mAb infusions. These were graded as severe according to the DAIDS Toxicity table (version 2.0)

Table indicates adverse events observed during the study observation period (24 weeks after the last antibody infusion) in the 15 enrolled participants. Adverse events were graded according to the Division of AIDS (DAIDS) Table for Grading the Severity of Adult and Pediatric Adverse Events (version 2.0).

Supplementary Table 5. *Pharmacokinetics of 3BNC117 and 10-1074*

a Summary

Antibody	ART	Dose	Regimen	Method (*n*)	$t_{1/2}$ (days)*			AUC_{last} (µg x h/ml)			C_{max} (µg/ml)		
					Mean	SD	Range	**Mean**	SD	Range	**Mean**	SD	Range
3BNC117	**Off**	30 mg/kg	wk 0	ELISA (4)	**10.1**	3.9	6.0-15.1	**3,155.5**	667.7	2,612.5-4,039.2	**817.9**	122.5	735.9-996.2
				TZM-bl (4)	**7.9**	3.0	6.3-12.5	**5,022.7**	1,650.6	3,183.3-6,643.2	**1,284.1**	234.7	945.1-1,443.4
	Off	30 mg/kg	wk 0-2-4	ELISA (3)	**12.3**	4.1	8.1-16.2	**7,226.3**	1,833,3	5,331.7-8,991.5	**861.3**	71.9	778.4-907.5
				TZM-bl (2)**	**9.6**	2.5	7.8-11.4	**10,603.8**	5,705.9	6,568.4-14,637.8	**1,256.6**	491.8	908.7-1,604.3
	All viremic	30 mg/kg		ELISA (7)	**11.1**	3.8	6.0-16.2						
				TZM-bl (6)**	**8.5**	2.8	6.3-12.5						
	On	10 mg/kg	wk0	ELISA (4)	**16.4**	4.3	10.2-19.8	**923.2**	262.6	579.0-1,197.2	**225.4**	59.1	169.7-306.4
				TZM-bl (4)	**12.1**	2.1	9.4-14.4	**562.0**	167.9	387.2-775.0	**200.5**	37.9	164.7-253.1
	On	30 mg/kg	wk0	ELISA (4)	**12.5**	3.3	9.4-16.7	**3,971.3**	969.9	2,817.1-4,878.8	**1,166.2**	166.4	987.1-1,316.7
				TZM-bl (4)	**10.9**	2.1	7.7-12.0	**2,353.6**	318.5	1976.2-2754.5	**886.6**	137.5	754.2-1,045.7
	All ART-treated			ELISA (8)	**14.5**	4.1	9.4-19.8						
				TZM-bl (8)	**11.5**	2.1	7.7-14.4						
10-1074	**Off**	30 mg/kg	wk 0	ELISA (4)	**11.9**	3.5	7.9-15.1	**12,924.1**	2,507.2	10,009.6-16,136.0	**1,249.0**	278.6	889.1-1,561.2
				TZM-bl (4)	**11.5**	1.6	9.5-13.3	**10,880.4**	2,459.1	9,260.1-14,514.9	**2,359.4**	1,873.9	1,154.5-5,123.3
	Off	30 mg/kg	wk 0-2-4	ELISA (3)	**12.7**	1.5	11.7-14.4	**44,769.0**	9,803.1	35,626.4-55,120.4	**1,983.8**	336.2	1,618.9-2,281.0
				TZM-bl (3)	**11.5**	0.5	11.0-12.1	**31,505.9**	9,067.2	21.143.8-37,984.6	**2,433.7**	1,092.7	1,205.6-3,298.1
	All viremic	30 mg/kg		ELISA (7)	**12.2**	2.7	7.9-15.1						
				TZM-bl (7)	**11.5**	1.2	9.5-13.3						
	On	10 mg/kg	wk0	ELISA (4)	**19.9**	3.4	16.0-23.2	**5,083.5**	1,513.2	3,153.8-6,485.4	**350.2**	107.7	217.4-474.9
				TZM-bl (4)	**20.0**	5.5	11.9-23.9	**2,469.8**	423.3	1,934.7-2,916.2	**227.2**	45.6	179.4-281.1
	On	30 mg/kg	wk0	ELISA (4)	**18.1**	2.3	15.4-20.5	**16,519.6**	5,125.0	10,951.7-23,366.6	**1,172.3**	217.8	984.3-1,486.9
				TZM-bl (4)	**16.8**	2.8	13.9-20.6	**10,418.1**	706.7	9,751.7-11,377.6	**1,231.3**	655.9	713.3-2,189.6
	All ART-treated			ELISA (8)	**19.0**	2.8	15.4-23.2						
				TZM-bl (8)	**18.4**	4.4	11.9-23.9						

* Calculated terminal elimination half-lives.
** One participant not included because of adjusted $R^2 < 0.8$.
AUC - Area under the curve, SD - standard deviation.

Table indicates pharmacokinetic parameters for the administered antibodies derived from serum concentrations determined by ELISA and TZM-bl assay. (**a**) Summary of results grouped by antibody and treatment status. (**b**) and (**c**) Results for 3BNC117 and 10-1074, respectively, obtained in individual study participants.

Supplementary Table 5. *Pharmacokinetics of 3BNC117 and 10-1074 (continued)*

b 3BNC117

ID	ART	Dose	Regimen	Method	c_{max} (µg/ml)	Adjusted R^2	Estimated $t_{1/2}$ (days)	λ_z lower (days)	λ_z upper (days)	AUC (INF_pred)	t_{last} (days)	c_{last} (µg/ml)	AUC_% Extrap_pred
91C22	Off	30 mg/kg	wk 0	ELISA	996.2	0.999	6.0	21	42	2,623.7	42	1.3	0.4
				TZM-bl	1,443.4	0.988	6.3	14	42	3,196.2	42	1.4	0.4
91C35	Off	30 mg/kg	wk 0	ELISA	739.4	0.998	11.1	22	58	4,078.9	58	2.6	1.0
				TZM-bl	1,440.5	0.904	12.5	7	84	6,660.3	84	1.6	0.3
91C33	Off	30 mg/kg	wk 0	ELISA	800.3	1.000	8.2	31	56	2,691.2	56	2.1	0.9
				TZM-bl	1,307.4	0.999	6.3	21	56	4,109.7	56	1.4	0.3
91C34	Off	30 mg/kg	wk 0	ELISA	735.9	0.996	15.1	28	87	3,337.3	87	1.6	1.0
				TZM-bl	945.1	0.857	6.7	28	56	6,226.7	56	5.0	1.0
9341	Off	30 mg/kg	wk 0-2-4	ELISA	778.4	0.999	8.1	43	84	5,345.9	84	1.2	0.3
				TZM-bl	908.7	0.864	11.4	32	140	6,570.7	140	0.5	0.0
9342	Off	30 mg/kg	wk 0-2-4	ELISA	907.5	0.933	16.2	35	112	9,068.4	112	4.9	0.8
				TZM-bl	1,604.3	0.967	7.8	42	84	14,677.4	84	3.2	0.3
9343	Off	30 mg/kg	wk 0-2-4	ELISA	898.0	0.983	12.8	42	55	8,362.9	55	55.7	12.0
				TZM-bl	1,976.3	0.779	4.2	29	55	11,893.3	55	23.5	0.5
1A12	On	10 mg/kg	wk 0	ELISA	306.4	0.994	18.3	42	84	1,220.1	84	0.9	1.9
				TZM-bl	253.1	0.992	12.8	7	56	798.6	56	1.2	3.0
1A27	On	10 mg/kg	wk 0	ELISA	197.3	0.986	10.2	7	28	657.6	28	5.5	11.9
				TZM-bl	199.5	0.973	9.4	7	28	425.9	28	2.8	9.1
1A29	On	10 mg/kg	wk 0	ELISA	228.1	0.996	17.4	21	84	1,056.6	84	1.0	2.3
				TZM-bl	184.6	1.000	14.4	29	57	631.1	57	1.2	4.0
1A71	On	10 mg/kg	wk 0	ELISA	169.7	0.973	19.8	14	84	920.6	84	1.4	3.9
				TZM-bl	164.7	0.937	12.0	7	43	511.2	43	1.9	6.1
1B05	On	30 mg/kg	wk 0	ELISA	1,298.7	0.998	16.7	56	112	4,682.2	112	1.0	0.5
				TZM-bl	1,045.7	0.995	12.0	42	84	2,381.6	84	1.0	0.7
1B44	On	30 mg/kg	wk 0	ELISA	1,062.4	0.995	9.4	15	57	2,844.0	57	2.0	0.9
				TZM-bl	791.0	0.999	7.7	22	43	1,998.1	43	1.9	1.1
1B55	On	30 mg/kg	wk 0	ELISA	1,316.7	0.978	13.5	14	43	5,208.4	43	17.9	6.3
				TZM-bl	955.4	0.957	11.9	7	56	2,807.3	56	3.2	1.9
1B61	On	30 mg/kg	wk 0	ELISA	987.1	1.000	10.4	42	84	3,549.8	84	1.3	0.5
				TZM-bl	754.2	0.952	11.8	21	56	2,374.9	56	3.0	2.3

Supplementary Table 5. *Pharmacokinetics of 3BNC117 and 10-1074 (continued)*

c 10-1074

ID	ART	Dose	Regimen	Method	c_{max} (µg/ml)	Adjusted R^2	Estimated $t_{1/2}$ (days)	λ_z lower (days)	λ_z upper (days)	AUC (INF_pred)	t_{last} (days)	c_{last} (µg/ml)	AUC_% Extrap_pred
91C22	Off	30 mg/kg	wk 0	ELISA	1,561.2	0.983	9.8	14	80	10,029.1	80	1.5	0.2
				TZM-bl	5,123.3	0.996	9.5	28	80	14,523.8	80	0.7	0.1
91C35	Off	30 mg/kg	wk 0	ELISA	1,224.3	1.000	15.1	42	84	12,900.2	84	7.4	1.3
				TZM-bl	1,154.5	0.991	11.2	7	84	9,295.1	84	2.6	0.4
91C33	Off	30 mg/kg	wk 0	ELISA	1,321.4	0.996	14.6	21	142	12,824.0	142	0.6	0.1
				TZM-bl	1,917.7	1.000	13.3	56	111	9,512.7	111	0.6	0.1
91C34	Off	30 mg/kg	wk 0	ELISA	889.1	0.961	7.9	87	140	16,141.1	140	0.5	0.0
				TZM-bl	1,242.1	0.996	12.1	56	112	10,266.9	112	1.2	0.2
9341	Off	30 mg/kg	wk 0-2-4	ELISA	1,618.9	0.988	12.1	43	140	35,646.9	140	1.5	0.1
				TZM-bl	1,205.6	0.990	12.1	71	140	21,150.4	140	0.4	0.0
9342	Off	30 mg/kg	wk 0-2-4	ELISA	2,281.0	0.996	14.4	84	140	55,298.8	140	8.9	0.3
				TZM-bl	3,298.1	0.991	11.3	42	140	38,008.2	140	1.6	0.1
9343	Off	30 mg/kg	wk 0-2-4	ELISA	2,051.4	0.997	11.7	30	55	48,842.1	55	305.7	10.8
				TZM-bl	2,797.4	0.817	11.0	35	55	37,411.5	55	151.3	5.4
1A12	On	10 mg/kg	wk 0	ELISA	474.9	0.990	16.0	7	84	6,213.0	84	6.9	2.3
				TZM-bl	281.1	1.000	11.9	42	84	2,941.4	84	1.5	0.9
1A27	On	10 mg/kg	wk 0	ELISA	217.4	0.995	18.2	20	140	3,166.0	140	0.5	0.4
				TZM-bl	179.4	1.000	23.0	56	112	1,952.3	112	0.5	0.9
1A29	On	10 mg/kg	wk 0	ELISA	326.2	1.000	22.0	112	161	4,657.4	161	1.0	0.7
				TZM-bl	246.9	1.000	23.9	112	161	2,682.7	161	0.4	0.5
1A71	On	10 mg/kg	wk 0	ELISA	382.4	1.000	23.2	111	176	6,507.3	176	0.7	0.3
				TZM-bl	201.5	1.000	21.2	84	140	2,375.3	140	0.5	0.7
1B05	On	30 mg/kg	wk 0	ELISA	1,486.9	0.998	17.2	112	175	23,382.3	175	0.6	0.1
				TZM-bl	952.1	0.995	13.9	21	147	11,382.8	147	0.3	0.0
1B44	On	30 mg/kg	wk 0	ELISA	1,107.9	0.997	15.4	57	105	10,996.5	105	2.1	0.4
				TZM-bl	2,189.6	0.979	16.6	57	105	10,071.2	105	0.6	0.1
1B55	On	30 mg/kg	wk 0	ELISA	1,110.1	0.999	19.4	21	168	16,131.3	168	1.2	0.2
				TZM-bl	1,070.4	0.999	16.2	29	139	10,502.1	139	0.8	0.2
1B61	On	30 mg/kg	wk 0	ELISA	984.3	0.999	20.5	112	168	15,734.5	168	2.5	0.5
				TZM-bl	713.3	0.986	20.6	21	168	9,772.0	168	0.9	0.2

Supplementary Table 6. *Antibody sensitivity of plasma SGA-derived pseudoviruses*

Response	ID	Seq ID	Time point	3BNC117 IC50	3BNC117 IC80	10-1074 IC50	10-1074 IC80	PGDM1400 IC50	PGDM1400 IC80	PGT121 IC50	PGT121 IC80
	91C22	91C22 A2	Day 0	0.003	0.013	0.003	0.008	0.089	0.572	0.002	0.007
		91C22 A5		0.010	0.033	0.004	0.010	0.123	0.721	0.004	0.014
		91C22 A6		0.002	0.006	0.003	0.008	0.104	0.638	0.002	0.007
		91C22 A10		0.005	0.013	0.003	0.008	0.212	0.833	0.003	0.008
		91C22 A11	Week 14	0.006	0.016	0.050	0.179	0.070	0.324	0.027	0.103
		91C22 B1		0.008	0.022	0.058	0.189	0.096	0.326	0.028	0.078
		91C22 B3		0.006	0.018	0.003	0.008	0.159	1.055	0.003	0.016
		91C22 B4		0.006	0.016	0.002	0.008	0.118	0.946	0.003	0.009
		91C22 B7	Week 16	0.005	0.014	0.003	0.007	0.155	0.933	0.004	0.013
	91C34	91C34 day 0_1	Day 0	0.020	0.091	0.017	0.081	> 50	> 50	0.089	0.417
		91C34 day 0 _2		0.009	0.029	0.025	0.084	> 50	> 50	0.070	0.321
		91C34 day0_4		0.016	0.056	0.026	0.113	> 50	> 50	0.091	0.305
		91C34 day0 _10		0.007	0.029	0.006	0.027	NT	NT	NT	NT
		91C34 W6_4	Week 6	0.009	0.031	0.062	0.403	> 50	> 50	0.137	0.923
		91C34 w6_6		0.011	0.036	0.073	0.427	> 50	> 50	0.123	0.529
		91C34 w12 _1	Week 12	0.014	0.047	0.094	0.640	> 50	> 50	1.210	> 50
		91C34 w12_2		0.035	0.113	0.075	0.323	> 50	> 50	0.045	0.151
		91C34 w12 _4		0.056	0.153	> 50	> 50	> 50	> 50	> 50	> 50
		91C34 w12 _5		0.060	0.170	> 50	> 50	> 50	> 50	> 50	> 50
		91C34 w12_7		0.009	0.065	0.017	0.189	NT	NT	NT	NT
		91C34 w12 _8		0.008	0.026	0.021	0.074	NT	NT	NT	NT
	9342	9342 B1	Day 0	0.015	0.052	0.016	0.054	3.254	10.811	0.010	0.036
		9342 B2		0.013	0.039	0.030	0.084	6.452	18.102	0.022	0.083
		9342 B3		0.033	0.101	0.028	0.085	0.837	2.801	0.025	0.107
		9342 B5		0.052	0.181	0.019	0.055	0.981	5.296	0.009	0.030
		9342 B6		0.060	0.161	0.019	0.056	1.683	12.807	0.008	0.031
		9342 B7		0.053	0.183	0.026	0.070	1.432	8.062	0.011	0.041
		9342 B8		0.009	0.032	0.081	0.426	1.072	3.922	> 50	> 50
		9342 A1	Week 20	0.010	0.031	0.016	0.037	1.904	9.166	0.010	0.031
		9342 A2		0.027	0.099	> 50	> 50	1.173	5.389	> 50	> 50
		9342 A3		0.042	0.116	0.057	0.192	1.473	4.911	0.023	0.108
		9342 A6		0.062	0.216	> 50	> 50	3.942	16.337	> 50	> 50
		9342 A8		0.058	0.261	> 50	> 50	3.938	14.786	> 50	> 50
	9343	9343 A1	Day 0	0.016	0.045	0.014	0.038	> 50	> 50	0.010	0.035
		9343 A3		0.005	0.018	0.005	0.018	> 50	> 50	0.003	0.009
		9343 A5		0.013	0.031	0.013	0.031	> 50	> 50	0.005	0.017
		9343 A6		0.011	0.033	0.011	0.033	> 50	> 50	0.013	0.100
		9343 A8		0.018	0.053	0.018	0.053	> 50	> 50	0.011	0.083
		9343 B6	Week 7	0.030	0.218	> 50	> 50	NT	NT	NT	NT
		9343 B9		0.034	0.179	> 50	> 50	> 50	> 50	> 50	> 50
		9343 B1	Week 8	0.094	0.428	> 50	> 50	> 50	> 50	> 50	> 50
		9343 B2		0.053	0.178	> 50	> 50	NT	NT	NT	NT
		9343 B4		0.043	0.143	> 50	> 50	NT	NT	NT	NT
		9343 B5		0.049	0.188	> 50	> 50	NT	NT	NT	NT

µg/ml
< 0.01
0.01 - 0.1
0.1 - 0.5
0.5 - 5
5 - 50
> 50

NT: Not tested.

Table indicates sensitivity of pseudoviruses against 3BNC117, 10-1074, PGDM1400 and PGT121. Pseudoviruses were constructed using *env* sequences obtained by SGA on plasma samples of the indicated time points. Sensitivity was determined in the TZM-bl neutralization assay. Participants are grouped based on the response to the 3BNC117 and 10-1074 infusions. Seq ID refers to virus sequence ID shown in **Fig. 3** and **Supplementary Fig. 6**.

Supplementary Table 6. *Antibody sensitivity of plasma SGA-derived pseudoviruses (continued)*

	ID	Seq ID	Time point	3BNC117		10-1074		PGDM1400		PGT121	
				IC50	IC80	IC50	IC80	IC50	IC80	IC50	IC80
Short-term response	91C35	91C35 A1	Day 0	0.386	1.721	<0.001	0.003	0.040	0.204	<0.001	0.001
		91C35 A2		0.304	1.490	0.001	0.003	0.048	0.626	<0.001	0.002
		91C35 A3		0.125	0.442	0.002	0.006	1.814	> 50	<0.001	0.005
		91C35 A4		0.234	1.233	<0.001	0.002	0.170	1.214	<0.001	0.001
		91C35 A5		0.255	0.861	<0.001	0.004	0.044	0.208	<0.001	0.003
		91C35 A7		0.421	1.851	0.002	0.004	0.257	16.039	0.001	0.003
		91C35 A10		0.073	0.235	0.002	0.008	1.484	38.424	0.001	0.006
		91C35 A12		0.516	2.335	0.001	0.005	0.090	0.527	<0.001	0.003
		91C35 B1		0.348	1.436	0.002	0.007	0.028	0.092	0.001	0.004
		91C35 B2	Week 3	0.339	2.152	> 50	> 50	0.063	0.560	30.773	> 50
		91C35 B3		0.219	1.419	> 50	> 50	0.072	0.694	> 50	> 50
		91C35 B5		0.295	1.918	> 50	> 50	0.057	0.438	2.507	> 50
		91C35 B6		41.958	> 50	> 50	> 50	0.073	0.509	11.548	> 50
	9341	9341 A5	Day 0	0.035	0.104	0.149	0.424	0.602	3.104	0.151	0.568
		9341 A12		0.097	0.350	0.205	0.721	0.567	2.867	0.240	1.130
		9341 B2A		0.057	0.160	0.156	0.710	0.417	2.121	0.344	1.643
		9341 B4		0.007	0.019	0.067	0.292	0.073	0.347	0.038	0.165
		9341 B5		0.040	0.113	0.132	0.475	0.519	2.482	0.109	0.505
		9341 B2	Week 4	42.305	> 50	> 50	> 50	0.173	0.888	> 50	> 50
		9341 B7	Week 5	0.040	0.213	> 50	> 50	NT	NT	NT	NT
		9341 B6		0.046	0.358	> 50	> 50	0.216	1.636	> 50	> 50
		9341 B5		0.060	0.298	> 50	> 50	0.271	2.157	> 50	> 50
No response	91C33	91C33 A3	Day 0	0.027	0.075	0.078	0.273	4.433	43.039	0.181	0.891
		91C33 A4		0.023	0.110	0.053	0.203	40.565	> 50	0.089	0.517
		91C33 A5		0.029	0.082	0.077	0.219	4.210	46.952	0.193	0.939
		91C33 A6		> 50	> 50	> 50	> 50	> 50	> 50	> 50	> 50
		91C33 A9		> 50	> 50	> 50	> 50	NT	NT	NT	NT

µg/ml
< 0.01
0.01 - 0.1
0.1 - 0.5
0.5 - 5
5 - 50
> 50

NT: Not tested.