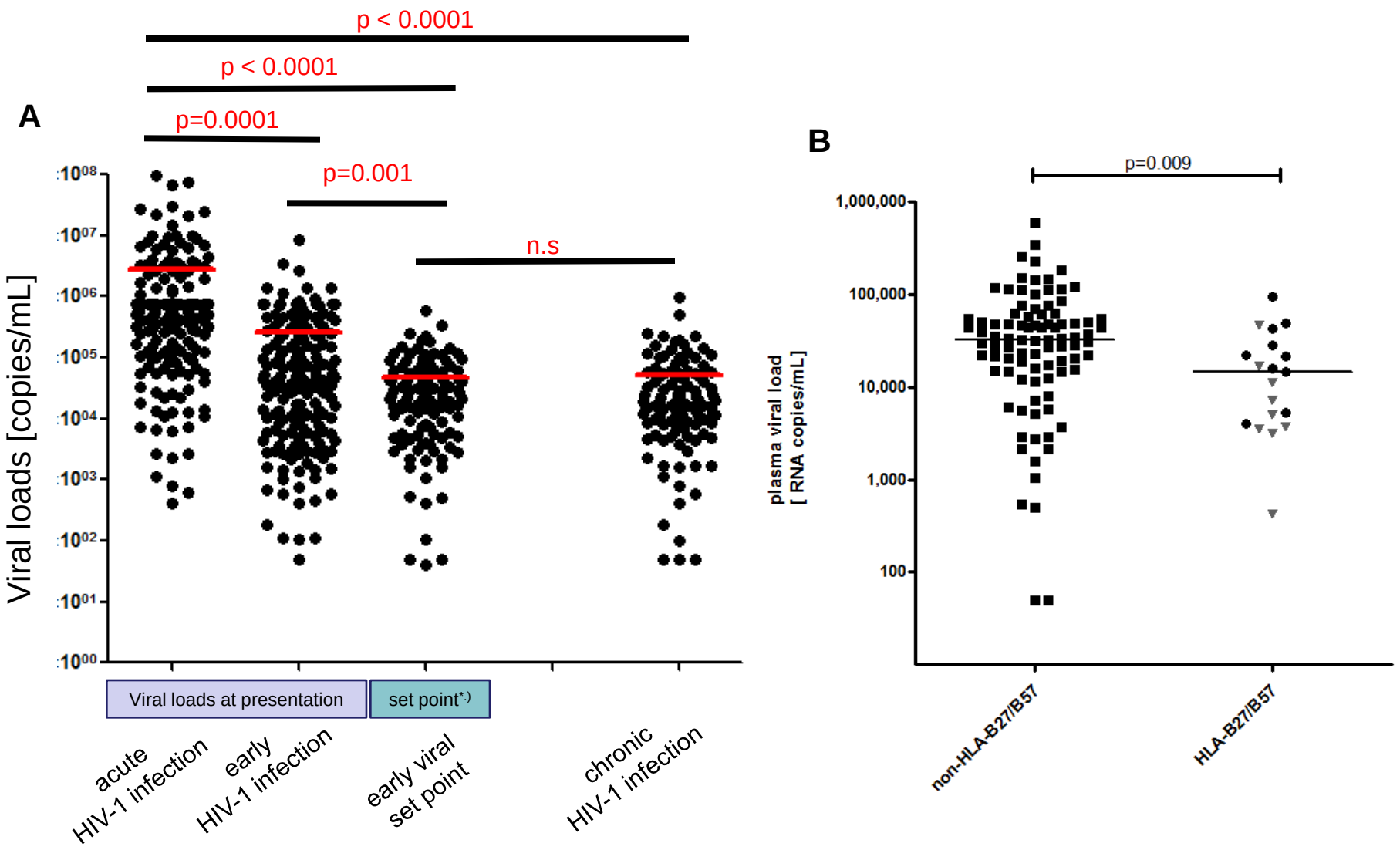
Supplemental figure 1



*.) in 110 treatment-naïve subjects

Supplemental figure 1. *HIV-1 viral loads during acute, early and chronic infection and early viral set point of 110 treatment-naïve patients.* **suppl Figure 1A.** Plasma viral load levels of patients identified during acute (n=224), early (n=204) or chronic (n=99) HIV-1 infection are shown. Patients identified during acute HIV-1 infection had a significantly higher average viral load at time of presentation with 3,034,510 copies./mL (range: 399-95,000,000copies/mL) than patients identified during early HIV-1 infection (238,698 copies/ml; range 49 – 8,470,000; p=0.0001). For 110 of the 428 subjects a plasma viral set point was determined and in average with 42,752 copies/ml (range: 40 – 588,000) significantly lower compared to the viral load in the AHI group (p<0.0001) or EHI group (p=0.001) at presentation. In comparison, subjects identified during chronic HIV-1 infection had a similar average viral load of 42,664 copies/mL (range: 49 – 988,000).
suppl. Figure 1B. Individuals expressing the protective HLA-class I alleles HLA-B57 and -B27 had a significantly lower viral setpoint compared to those not expressing these two protective alleles (figure 3A; 20,749 copies/mL vs 55,140copies/mL; p=0.009). Subjects expressing HLA-B57 (shown as ▼) had a lower viral set point than subjects expressing HLA-B27 (shown as ●), but this difference did not reach statistical significance.

supplemental table 1 – *Frequency of epitope recognition in acute and chronic HIV-1 infection*

rank	HLA class I allele	epitope name	protein	sequence	acute [%]	chronic [%]
1	B27	B27-KK10	p24	KRWIILGLNK	81	43
2	A25	A25-QW11	p24	QAISPRTLNAW	75	60
3	B57	B57-TW10	p24	TSTLQEQIGW	74	30
4	B8	B8-FL8	Nef	FLKEKGGL	74	75
5	B40	B40-KL9	Nef	KEKGGLEGL	64	43
6	A3	A3-RK9	p17	RLRPGGKKK	62	56
7	B38	B38-WI9	Vif	WHLGQGVSI	60	80
8	B57	B57-ISW9	RT	IVLPEKDSW	58	40
9	B51	B51-LI9	Int	LPPVVAKEI	58	93
10	B8	B8-EI8	p24	EIYKRWII	58	83
11	B14	B14-EL9	gp41	ERYLKDQQL	57	50
12	B14	B14-DA9	p24	DRFYKTLRA	54	50
13	B51	B51-TI8	RT	TAFTIPSI	53	14
14	A33	A33-ER9	Vpu	EYRKILRQR	53	0
16	A24	A24-RW8	Nef	RYPLTFGW	50	36
15	B27	B27-VL9	Vpr	VRHFPRIWL	50	57
17	A32	A32-RW10	gp120	RIKQIINMW	47	30
18	B53	B53-YY9	Nef	YPLTFGWCY	47	75
19	B38	B38-MW9	gp120	MHEDIISLW	46	0
20	A11	A11-AK11	p24	ACQGVGGPGHK	46	70
21	B58	B58-TQW10	P24	TSTVEEQIQW	45	0
22	B57	B57-HW9	Nef	HTQGYFPDW	45	30
23	A11	A11-ALK9	Nef	AVDLSHFLK	44	40
24	Cw8	Cw8-AL9	Nef	AAVDLSHFL	43	58
25	B7	B7-IL9	gp41	IPRRIRQGL	43	47
26	A29	A29-SY10	gp120	SFNCGGEFFY	42	50
27	A29	A29-SY9	gp160	SFEPIPIHY	42	0
28	B51	B51-EI9	Vpr	EAVRHFPRI	42	14
29	B40	B40-KSL9	p15	KELYPLTSL	42	14
30	B57	B57-KF11	p24	KAFSPEVIPMF	42	100
31	A3	A3-KK9	p17	KIRLRPGGK	42	44
32	Cw12	Cw12-CC8	Tat	CCFHCQVC	41	0
33	A11	A11-QK10	Nef	QVPLRPMTYK	39	50
34	A29	A29-YT9	Nef	YFPDWQNYT	38	100
35	Cw7	Cw7-RY11	Nef	RRQDILDLWIY	37	41
36	B15	B15-GY9	p24	GLNKIVRMY	37	60
37	A26	A26-EL9	p24	EVIPMFSAL	36	83
38	B8	B8-RL9	gp41	RQGLERALL	36	17
39	A24	A24-KW9	p17	KYKLKHIVW	34	9
40	A3	A3-QK10	Nef	QVPLRPMTYK	33	60
41	B53	B53-QW9	p24	QASQEVKNW	33	38
42	B57	B57-SW10	Int	STTVKAACWW	32	50
43	B44	B44-AW11	p24	AEQASQDVKNW	32	77
44	A25	A25-EW10	p24	ETINEEAAEW	31	40
45	A32	A32-PW10	RT	PIQKETWETW	30	60
46	B40	B40-IL10	p17	IEIKDTKEAL	30	29
47	B57	B57-YY9	Nef	YTPGPGIRY	29	10
48	B35	B35-VY8	Nef	VPLRPMTY	28	20
49	B44	B44-EW9	pro	EEMNLPGRW	27	46
50	B7	B7-GL9	p24	GPGHKARVL	27	29
51	B7	B7-RY10	Nef	RQDILDLWIY	27	35
52	B40	B40-IL8	RT	IETVPVKL	27	43
53	B7	B7-RV9	Nef	RPMTYKAAV	26	59
54	Cw5	Cw5-AM12	p24	AEQASQEVKNWM	26	58
55	B40	B40-AV9	p24	AEWDRVHPV	25	20
56	A30	A30-KYY9	Int	KIQNFRVYY	25	80
57	A29	A29-LY9	p17	LYNTVATLY	24	38
58	A33	A33-TW9	Nef	TRYPLTFGW	24	43
59	B57	B57-IW9	p24	ISPRTLNAW	23	60
60	B35	B35-NQY9	RT	NPDIVIYQY	23	13
61	Cw3	Cw3-AL9	Nef	AAVDLSHFL	22	36
62	Cw5	Cw5-SL9	Rev	SAEPVPLQL	22	0
63	B14	B14-SL9	Rev	SAEPVPLQL	21	0
64	B7	B7-TL10	Nef	TPGPGVRYPL	21	53
65	A30	A30-KIY9	RT	KLNWASQIY	21	30
66	A68	A68-IR11	Tat	ITKGLGISYGR	20	14
67	B58	B58-RY11	p17	RSLYNTVATLY	20	11
68	B8	B8-WM8	Nef	WPTVRERM	20	58
69	B7	B7-SM9	RT	SPAIFQSSM	20	59
70	A3	A3-ALK9	Nef	AVDLSHFLK	19	44
71	B57	B57-KY10	Rev	KAVRLIKFLY	19	30
72	B57	B57-QW9	p24	QASQEVKNW	19	30
73	A11	A11-QVK9	RT	QIYAGIKVK	19	20
74	B40	B40-IL9	RT	IEELRQHLL	19	43
75	B35	B35-VY10	RT	VPLDEDFRKY	19	7
76	B27	B27-IK9	p17	IRLRPGGKK	19	43
77	A2	A2-SL9	p17	SLYNTVATL	18	38
78	Cw8	Cw8-SL9	Rev	SAEPVPLQL	17	8
79	A1	A1-RY9	gp41	RRGWEVLKY	17	14
80	A3	A3-QR9	RT	QIYPGIKVR	17	0
81	B40	B40-RL9	Vpr	REPHNEWTL	16	20
82	A2	A2-FK10	p15	FLGKIWPSYK	16	29
83	B35	B35-PY9	p24	PPIPVGDIY	16	20
84	Cw8	Cw8-RV9	p24	RAEQASQEV	16	25
85	B44	B44-LY9	p17	LYNTVATLY	16	31
86	A1	A1-GY9	p17	GSEELRSLY	15	23
87	A2	A2-YI9	RT	YTAFTIPSI	15	19
88	Cw6	Cw6-YT9	Nef	YFPDWQNYT	15	42
89	B27	B27-GY10	gp41	GRRGWEALKY	15	57
90	B27	B27-RI10	Nef	RRQDILDLWI	15	43
91	B7	B7-FL9	Vpr	FPRIWLHGL	15	24
92	B7	B7-RI10	gp120	RPNNNTRKSI	15	18
93	B44	B44-RL11	p24	RDYVDRFYKTL	15	50
94	A2	A2-AL9	Vpr	AIIRILQQL	15	24
95	A24	A24-LY10	gp120	LFCASDAKAY	14	18
96	A24	A24-RL11	p24	RDYVDRFFKTL	14	9
97	A24	A24-RL9	gp41	RYLKDQQLL	14	36
98	B35	B35-TY9	RT	TVLDVGDAY	14	33
99	A26	A26-EY9	Pol	ETKLGKAGY	14	33
100	B7	B7-HI10	Vif	HPRVSSEVHI	14	12
101	Cw8	Cw8-TL9	p24	TPQDLNTML	14	50
102	B18	B18-YY9	Nef	YPLTFGWCY	13	54
103	B53	B53-TL9	Gag	TPYDINQML	13	0
104	A1	A1-YT9	Nef	YFPDWQNYT	13	14
105	A68	A68-QV9	p17	QVSQNYPIV	13	0
106	B35	B35-DL9	gp120	DPNPQEVVL	13	13
107	A11	A11-AK9	RT	AIFQSSMTK	12	40
108	Cw3	Cw3-RL9	gp41	RAIEAQQHL	12	27
109	A2	A2-RI9	Vpr	RILQQLLFI	12	10
110	Cw4	Cw4-SF9	gp120	SFNCGGEFF	11	44
111	B8	B8-GK9	p17	GGKKKYKLK	11	17
112	B44	B44-AY9	gp160	AENLWVTVY	11	8
113	A68	A68-DR11	Vpr	DTWAGVEAIIR	11	21
114	B51	B51-EI9	RT	EKEGKISKI	11	7
115	B40	B40-GI9	p15	GELDRWEKI	11	0
116	B40	B40-TL8	p15	TERQANFL	11	20
117	A2	A2-PL11	Nef	PLTFGWCYKL	11	17
118	Cw8	Cw8-HL9	p17	HLVWASREL	11	17
119	B15	B15-FY10	Tat	FQTKGLGISY	11	27
120	B40	B40-QL10	gp41	QELKNSAVSL	11	14
121	B40	B40-LS9	Nef	LEKHGAITS	10	0
122	A1	A1-IY9	rev	ISERILSTY	10	9
123	Cw1	Cw1-VL8	p24	VIPMFSAL	10	44
124	A3	A3-RK10	Vif	RIRTWKSLVK	10	24
125	B58	B58-IW9	RT	IAMESIVIW	10	11
126	Cw15	Cw15-RL9	Env	RAIEAQQHL	10	38
127	B57	B57-IF9	Vif	ISKKAKGWF	10	30
128	A2	A2-YL9	p24	YVDRFYKTL	9	10
129	A23	A2301-RL9	gp41	RYLKDQQLL	9	0
130	Cw4	Cw4-QW9	p24	QASQEVKNW	9	19
131	B51	B51-RL9	gp41	RAIEAQQHL	9	29
132	A11	A11-IK10	RT	IYQEPFKNLK	9	50
133	B15	B15-IY10	RT	IKLEPVHGVY	9	60
134	B8	B8-DL9	p24	DCKTILKAL	9	0
135	A30	A30-IY9	gp41	IVNRNRQGY	8	20
136	A30	A30-KQY9	gp41	KYCWNLLQY	8	30
137	A30	A30-KY9	RT	KQNPDIVIY	8	40
138	A30	A30-RY11	p17	RSLYNTVATLY	8	40
139	A3	A3-HK9	Vif	HMYISKKAK	8	12
140	B58	B58-KY10	Rev	KAVRLIKFLY	8	11
141	Cw3	Cw03-YL9	p24	YVDRFFKTL	8	18
142	A3	A3-ATK9	RT	AIFQSSMTK	7	44
143	A68	A68-GA10	RT	GAETFYVDGA	7	43
144	B7	B7-HA9	Gag	HPVHAGPIA	7	6
145	B7	B7-SV9	p24	SPRTLNAWV	7	24
147	A2	A2-RA9	gp41	RIRQGLERA	7	7
146	A2	A2-VV9	p24	VLAEAMSQV	7	5
148	B40	B40- KA9	p24	KETINEEAA	7	20
149	B15	B15-WF9	Nef	WRFDSRLAF	7	7
150	B15	B15-YL9	p24	YVDRFFKTL	7	13
151	A2	A2-IV9	RT	ILKEPVHGV	7	43
152	B18	B18-FK10	p24	FRDYVDRFYK	7	0
153	B18	B18-LY10	Vif	LADQLIHLHY	7	15
154	B53	B53-EW10	Tat	EPVDPRLEPW	7	75
155	A1	A1-WH10	Nef	WRFDSRLAFH	7	0
156	A3	A3-AK11	RT	ALVEICTEMEK	6	4
157	A3	A3-RK11	RT	RMRGAHTNDVK	6	16
158	A3	A3-RR11	gp41	RLRDLLLIVTR	6	8
159	B57	B57-AW9	Vpr	AVRHFPRIW	6	20
160	B57	B57-KF9	Int	KTAVQMAVF	6	10
161	A2	A2-SAV10	Env	SLLNATAIAV	6	17
162	B7	B7-TM9	Nef	TPQVPLRPM	6	35
163	A2	A2-LI9	Pro	LVGPTPVNI	6	5
164	A3	A3-ER10	Rev	ERILSTYLGR	6	8
165	A11	A11-AK10	Int	AVFIHNFKRK	5	0
166	A11	A11-QKK9	RT	QIIEQLIKK	5	30
167	B40	B40-SL9	p24	SEGATPQDL	5	14
168	A2	A2-AM9	RT	ALVEICTEM	5	2
169	A2	A2-VL9	RT	VIYQYMDDL	5	2
170	A68	A68-DL9	RT	DTVLEEMNL	5	0
171	A68	A68-IL9	gp41	IVTRIVELL	5	7
172	B35	B35-VL11	gp120	VPVWKEATTTL	5	7
173	B7	B7-TL9	p24	TPQDLNTML	5	35
174	A3	A3-GK9	RT	GIPHPAGLK	5	12
175	A3	A3-KK11	Vif	KTKPPLPSVKK	5	16
176	B15	B15-GL9	p24	GHQAAMQML	4	13
177	B15	B15-HL9	p24	HQAISPRTL	4	25
178	A30	A30-RV10	RT	RMRGAHTNDV	4	0
179	B57	B57-KV8	pro	KAIGTVLV	4	0
180	B57	B57-LL9	Nef	LTFGWCFKL	4	20
183	B35	B35-WF9	p17	WASRELERF	4	27
181	B8	B8-EV9	p17	ELRSLYNTV	4	0
182	B8	B8-YL8	gp41	YLKDQQLL	4	25
184	A68	A68-EV10	Vpr	ETYGDTWTGV	4	29
185	B7	B7-FL9	Nef	FPVTPQVPL	4	6
186	B14	B14-CC9	p15	CRAPRKKGC	4	17
187	B15	B15-LY12	RT	LVGKLNWASQIY	4	13
188	B15	B15-RA9	Nef	RMRRAEPAA	4	0
189	B15	B15-TY11	Nef	TQGYFPDWQNY	4	7
190	B15	B15-RY9	Int	RKAKIIRDY	4	33
191	B15	B15-VI10	Pol	VTDSQYALGI	4	0
192	B57	B57-YT9	Nef	YFPDWQNYT	3	30
193	B44	B44-EV9	p24	EEKAFSPEV	3	8
194	A3	A3-AK10	Int	AVFIHNFKRK	3	24
195	A3	A3-KK10	RT	KLVDFRELNK	3	8
196	A3	A3-TK10	gp120	TVYYGVPVWK	3	12
197	B51	B51-II10	Vif	IPLGDAKLII	3	14
198	A2	A2-VL10	Nef	VLEWRFDSRL	3	0
199	A68	A68-IV9	pro	ITLWQRPLV	3	0
200	B35	B35-TW9	gp41	TAVPWNASW	3	20
201	B15	B15-FY10	Int	FKRKGGIGGY	2	6
202	B15	B15-IY9	Int	IQQEFGIPY	2	7
203	B51	B51-LI9	gp160	LPCRIKQII	2	0
204	A2	A2-KL9	gp160	KLTPLCVTL	2	12
205	A2	A2-RI10	gp120	RGPGRAFVTI	2	2
206	A11	A11-SK9	Env	SVITQACPK	2	10
209	B35	B35-NY9	p17	NSSKVSQNY	1	0
207	B8	B8-GL9	RT	GPKVKQWPL	1	25
208	B8	B8-RL9	gp120	RVKEKYQHL	1	0
210	A11	A11-GK8	p24	GVGGPGHK	0	20
211	A11	A11-TI9	p17	TLYCVHQRI	0	10
212	A23	A23-LY9	Gag	LRSLFLFSY	0	0
213	A26	A26-ER11	RT	ETFYVDGAANR	0	33
214	A30	A30-HY9	gp120	HIGPGRAFY	0	10
215	A30	A30-KY11	RT	KQNPDIVIYQY	0	30
216	A30	A30-LF11	p17	LVWASRELERF	0	40
217	A33	A33-ER8	gp41	EVAQRAYR	0	0
218	A33	A33-VR10	gp41	VFAVLSIVNR	0	0
219	B15	B15-VF9	p24	VKVIEEKAF	0	13
220	B15	B15-W18	Vif	WHLGHVSI	0	0
221	B15	B15-SF9	gp120	SFNCGGEFF	0	7
222	B58	B58-EW10	Tat	EPVDPRLEPW	0	33

Supplemental table 2 – *Frequency of epitope recognition of immunodominant responses targeted in acute HIV-1 infection (n=428), acute subjects with viral set point (n=110) and chronic (n=99) HIV-1 infection*

acute HIV-1 infection

immunodominant epitope	HLA class I allele	Acute (n=428) [%]	Acute (n=110) [%]	Chronic (n=99) [%]
B27-KK10(p24)	B27	81	90	43
A25-EW10(p24)	A25	75	100	60
B57-TW10(p24)	B57	74	88	30
B8-FL8(Nef)	B08	74	82	75
B40-KL9 (Nef)	B40	64	61	43
A3-RK9 (p17)	A03	62	70	56
B38-WI9 (Vif)	B38	60	60	80
B38-MW9 (gp120)	B38	46	75	0
B51-LI9 (Int)	B51	58	50	93
B14-EL9(gp41)	B14	57	*(75)*	50
A33-ER9 (Vpu)	A33	53	*(0)*	0
A24-RW8(Nef)	A24	50	54	36
A32-RW9(gp120)	A32	47	*(50)*	30
B53-YY9 (Nef)	B53	47	*(50)*	75
A11-AK11 (p24)	A11	46	56	70
B58-TQW10	B58	45	*(75)*	0
Cw8-AL9 (Nef)	Cw8	43	71	58
B7-IL9 (gp41)	B07	43	47	47
A29-SY10 (gp120)	A29	42	*(75)*	0
Cw12-CC8 (Tat)	Cw12	41	53	0
Cw7-RY11 (Nef)	Cw07	37	42	41
B15-GY9 (p24)	B15	37	50	60
A26-EL9 (p24)	A26	36	57	83
B44-AW11 (p24)	B44	32	33	77
B35-VY8 (Nef)	B35	28	31	20
Cw5-AM12 (p24)	Cw05	26	25	58
Cw5-SL9 (Rev)	Cw5	22	31	0
A30-KYY9 (Int)	A30	25	*(50)*	80
Cw3-AL9 (Nef)	Cw03	22	24	36
A68-IR11 (Tat)	A68	20	13	14
A68-DR11 (Vpr)	A68	11	25	21
A2-SL9 (p17)	A02	18	20	38
A2-FK10 (p15)	A02	6	26	29
A1-RY9 (gp41)	A01	17	10	14
Cw6-YT9 (Nef)	Cw06	15	17	42
B18-YY9 (Nef)	B18	13	25	54
Cw4-SF9 (gp120)	Cw04	11	15	44
Cw1-VL8(p24)	Cw01	10	9	44
Cw15-RL9(Env)	Cw15	10	33	38
A23-RL9 (gp41)	A23	9	17	0

() targeted <5 times. Therefore not part of analysis.

chronic HIV-1 infection

immunodominant epitope	HLA class I allele	Acute (n=428) [%]	Acute (n=110) [%]	Chronic (n=99) [%]
A29-YT9 (Nef)	A29	38	-	100
B57-KF11(p24)	B57	42	33	100
B51-LI9 (Int)	B51	58	50	93
A26-EL9(p24)	A26	36	57	83
B8-EI8(p24)	B8	58	70	83
A30-KYY9 (Int)	A30	25	75	80
B38-WI9 (Vif)	B38	60	60	80
B44-AW11 (p24)	B44	32	28	77
B53-EW10 (Tat)	B53	7	-	75
A11-AK11 (p24)	A11	46	56	70
A25-EW10 (p24)	A25	75	100	60
A32-PW10 (RT)	A32	30	*(50)*	60
A3-QK10 (Nef)	A3	33	40	60
B15-GY9 (p24)	B15	37	50	60
B7-RV9 (Nef)	B7	26	35	59
Cw8-AL9 (Nef)	Cw8	43	71	58
Cw5-AM12 (p24)	Cw5	26	25	58
B27-VL9 (Vpr)	B27	50	44	57
B18-YY9 (Nef)	B18	13	25	54
B14-DA9 (p24)	B14	54	*(100)*	50
Cw1-VL8 (p24)	Cw1	10	9	44
Cw4-SF9 (gp120)	Cw4	11	15	44
A2-IV9 (RT)	A2	7	9	43
A33-TW9 (Nef)	A33	24	*0*	43
A68-GA10 (RT)	A68	7	13	43
B40-IL8 (RT)	B40	27	13	43
Cw6-YT9 (Nef)	Cw6	15	17	42
Cw7-RY11 (Nef)	Cw7	37	42	41
Cw15-RL9 (Env)	Cw15	10	33	38
A24-RL9 (gp41)	A24	14	21	36
Cw3-AL9 (Nef)	Cw3	22	24	36
B35-TY9 (RT)	B35	14	6	33
B58-EW10 (Tat)	B58	0	-	33
A1-GY9 (p17)	A1	15	7	23
A23-RL9 (gp41)	A23	9	17	0
Cw12-CC8 (Tat)	Cw12	41	53	0