

## SUPPLEMENTARY TABLES

Supplementary Table 1. Adjusted multiple comparisons of CD3+CD4+T cell counts between different time-point after ART treatment (SCHEFFE comparison).

Time after ART	0.25	0.5	1	2	3	4	5	6	7	8	9	10	CD4+T cell count (cell/ $\mu$ l) <sup>‡</sup>
0.25	NA												347
0.5	0.0115	NA											373
1	<.0001	<.0001	NA										407
2	<.0001	<.0001	<.0001	NA									463
3	<.0001	<.0001	<.0001	0.0018	NA								487
4	<.0001	<.0001	<.0001	<.0001	<b>0.3021<sup>†</sup></b>	NA							498
5	<.0001	<.0001	<.0001	<.0001	0.0117	<b>0.7113</b>	NA						512
6	<.0001	<.0001	<.0001	<.0001	<.0001	0.015	<b>0.4775</b>	NA					522
7	<.0001	<.0001	<.0001	<.0001	<.0001	0.0236	<b>0.5578</b>	<b>1</b>	NA				519
8	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0216	<b>0.6491</b>	<b>0.7629</b>	NA			529
9	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0281	<b>0.0596</b>	<b>0.7079</b>	NA		548
10	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0031	<b>0.1546</b>	<b>0.2958</b>	<b>0.9452</b>	<b>1</b>	NA	554
0	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	237

<sup>‡</sup>CD4+T cell counts: the CD4+T-cell count predicted from mixed linear model. Bold characters showed no significance among adjusted comparisons.

**Supplementary Table 2. Adjusted multiple comparisons of CD4+CD45RA- and CD4+CD45RA+T cell counts between different time-point after ART treatment (SCHEFFE comparison).**

Time after ART	0.25	0.5	1	2	3	4	5	6	7	8	9	10	CD4+CD45RA-T (cells//µl) <sup>‡</sup>
0.25	NA												232
0.5	<b>0.1161</b>	NA											248
1	<.0001	<.0001	NA										270
2	<.0001	<.0001	<.0001	NA									306
3	<.0001	<.0001	<.0001	<b>0.1423</b>	NA								318
4	<.0001	<.0001	<.0001	0.0002	<b>0.2922</b>	NA							333
5	<.0001	<.0001	<.0001	<.0001	0.0002	<b>0.1202</b>	NA						354
6	<.0001	<.0001	<.0001	<.0001	<.0001	0.0004	<b>0.4785</b>	NA					364
7	<.0001	<.0001	<.0001	<.0001	<.0001	0.027	<b>0.9416</b>	<b>1</b>	NA				363
8	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<b>0.1251</b>	<b>0.9412</b>	<b>0.7282</b>	NA			380
9	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0103	<b>0.4154</b>	<b>0.2477</b>	<b>0.9761</b>	NA		403
10	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0091	<b>0.2899</b>	<b>0.2106</b>	<b>0.9196</b>	<b>1</b>	NA	420
0	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	160
													<b>CD4+CD45RA+T (cells//µl)<sup>‡</sup></b>
0.25	NA												115
0.5	0.0024	NA											124
1	<.0001	<.0001	NA										136
2	<.0001	<.0001	<.0001	NA									159
3	<.0001	<.0001	<.0001	<.0001	NA								163
4	<.0001	<.0001	<.0001	<.0001	0.0404	NA							163
5	<.0001	<.0001	<.0001	<.0001	<b>0.0914</b>	<b>0.8218</b>	NA						164
6	<.0001	<.0001	<.0001	<.0001	0.0283	<b>0.3279</b>	<b>0.3286</b>	NA					161
7	<.0001	<.0001	<.0001	<.0001	0.0102	<b>0.1371</b>	<b>0.15</b>	<b>0.3871</b>	NA				160
8	<.0001	<.0001	<.0001	<.0001	0.0001	0.0045	0.0054	0.0189	0.0441	NA			160
9	<.0001	<.0001	<.0001	<.0001	<.0001	0.0004	0.0006	0.0025	0.0081	<b>0.1585</b>	NA		168
10	<.0001	<.0001	<.0001	<.0001	0.0059	0.0446	<b>0.0557</b>	<b>0.1326</b>	<b>0.2712</b>	<b>0.9538</b>	<b>0.2172</b>	NA	150
0	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	78

<sup>‡</sup>CD4+CD45RA- and CD4+CD45RA+T: the CD4+CD45RA- and CD4+CD45RA+T-cell predicted from mixed linear model. Bold characters showed no significance among adjusted comparisons.

**Supplementary Table 3. Adjusted multiple comparisons of other T-cell subsets between different time-point after ART treatment (SCHEFFE comparison).**

Time after ART	0.25	0.5	1	2	3	4	5	6	7	8	9	10	CD8+HLA-DR+T cell (%) <sup>‡</sup>
0.25	NA												51.34
0.5	<.0001	NA											44.49
1	<.0001	<.0001	NA										41.18
2	<.0001	<.0001	<b>0.1841</b>	NA									39.22
3	<.0001	<.0001	<b>0.8619</b>	<b>1</b>	NA								39.04
4	<.0001	<.0001	<b>0.1446</b>	<b>0.9926</b>	<b>0.8696</b>	NA							37.11
5	<.0001	0.0008	<b>0.9235</b>	<b>1</b>	<b>1</b>	<b>0.9964</b>	NA						37.82
6	<.0001	0.006	<b>0.9738</b>	<b>1</b>	<b>1</b>	<b>0.9994</b>	<b>1</b>	NA					37.65
7	<.0001	<b>0.0648</b>	<b>0.9985</b>	<b>1</b>	<b>1</b>	<b>0.9982</b>	<b>1</b>	<b>1</b>	NA				37.74
8	<.0001	<b>0.9987</b>	<b>0.9999</b>	<b>0.7692</b>	<b>0.8348</b>	<b>0.1702</b>	<b>0.5905</b>	<b>0.5065</b>	<b>0.4242</b>	NA			41.07
9	0.0019	<b>1</b>	<b>0.9977</b>	<b>0.6695</b>	<b>0.7448</b>	<b>0.1747</b>	<b>0.5545</b>	<b>0.5443</b>	<b>0.6249</b>	<b>1</b>	NA		41.42
10	0.004	<b>0.9999</b>	<b>1</b>	<b>0.9752</b>	<b>0.986</b>	<b>0.7459</b>	<b>0.9589</b>	<b>0.9646</b>	<b>0.9854</b>	<b>1</b>	<b>1</b>	NA	40.69
0	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	60.51
													<b>CD8+CD38+T cell (%)<sup>‡</sup></b>
0.25	NA												63.64
0.5	<.0001	NA											56.97
1	<.0001	<.0001	NA										51.76
2	<.0001	<.0001	<.0001	NA									47.51
3	<.0001	<.0001	<.0001	<b>0.5776</b>	NA								45.17
4	<.0001	<.0001	<.0001	0.0037	<b>0.5066</b>	NA							42.97
5	<.0001	<.0001	<.0001	<.0001	<b>0.1031</b>	<b>0.9831</b>	NA						41.33
6	<.0001	<.0001	<.0001	<.0001	0.0003	<b>0.2473</b>	<b>0.8703</b>	NA					39.03
7	<.0001	<.0001	<.0001	<.0001	<.0001	<b>0.1186</b>	<b>0.7336</b>	<b>1</b>	NA				38.01
8	<.0001	<.0001	<.0001	<.0001	<.0001	0.0008	<b>0.0562</b>	<b>0.7379</b>	<b>0.9312</b>	NA			35.04
9	<.0001	<.0001	<.0001	<.0001	<.0001	0.0002	0.016	<b>0.4174</b>	<b>0.7514</b>	<b>0.9998</b>	NA		33.81
10	<.0001	<.0001	<.0001	<.0001	<.0001	0.0049	<b>0.0901</b>	<b>0.6713</b>	<b>0.9091</b>	<b>1</b>	<b>1</b>	NA	33.98
0	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	77.24
													<b>CD4+CD28+T cell (%)<sup>‡</sup></b>
0.25	NA												86.23
0.5	<b>0.9971</b>	NA											86.86
1	<b>0.3178</b>	<b>0.6785</b>	NA										87.96
2	<.0001	0.0001	0.0179	NA									89.64
3	<.0001	<.0001	0.0041	<b>0.9601</b>	NA								90.46
4	<.0001	<.0001	0.0003	<b>0.491</b>	<b>0.9682</b>	NA							91.06
5	<.0001	<.0001	0.0114	<b>0.854</b>	<b>0.9993</b>	<b>1</b>	NA						90.93
6	<.0001	<.0001	<b>0.0057</b>	<b>0.6616</b>	<b>0.9841</b>	<b>1</b>	<b>1</b>	NA					91.19
7	<.0001	<.0001	0.0073	<b>0.5966</b>	<b>0.9629</b>	<b>1</b>	<b>0.9997</b>	<b>1</b>	NA				91.2
8	0.0003	0.0034	<b>0.0895</b>	<b>0.8993</b>	<b>0.998</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	NA			90.44

9	<.0001	0.001	0.0276	<b>0.6027</b>	<b>0.9312</b>	<b>0.9987</b>	<b>0.9977</b>	<b>0.9999</b>	<b>1</b>	<b>0.9996</b>	NA		91.28
10	0.0159	<b>0.0582</b>	<b>0.3197</b>	<b>0.9451</b>	<b>0.9976</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	NA	90.06
0	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	80.74
													<b>CD8+CD28+T cell (%)<sup>‡</sup></b>
0.25	NA												37.63
0.5	<.0001	NA											40.01
1	<.0001	0.0024	NA										42.05
2	<.0001	<.0001	<.0001	NA									45.78
3	<.0001	<.0001	<.0001	<.0001	NA								49.44
4	<.0001	<.0001	<.0001	<.0001	<.0001	NA							51.99
5	<.0001	<.0001	<.0001	<.0001	<.0001	<b>0.981</b>	NA						52.89
6	<.0001	<.0001	<.0001	<.0001	<.0001	<b>0.2978</b>	<b>0.8224</b>	NA					54.27
7	<.0001	<.0001	<.0001	<.0001	<.0001	<b>0.1155</b>	<b>0.5744</b>	<b>0.9989</b>	NA				54.86
8	<.0001	<.0001	<.0001	<.0001	<.0001	<b>0.0802</b>	<b>0.4678</b>	<b>0.988</b>	<b>1</b>	NA			54.86
9	<.0001	<.0001	<.0001	<.0001	<.0001	0.0417	<b>0.288</b>	<b>0.9083</b>	<b>0.996</b>	<b>0.9999</b>	NA		55.46
10	<.0001	<.0001	<.0001	<.0001	<.0001	<b>0.106</b>	<b>0.4223</b>	<b>0.9287</b>	<b>0.9957</b>	<b>0.9998</b>	<b>1</b>	NA	55.02
0	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	31.69

CD8+HLA-DR+T cell (%), CD8+CD38+T cell (%), CD4+CD28+T cell (%), CD8+CD28+T cell (%). <sup>‡</sup>These T-cell subsets predicted from mixed linear model. Bold characters showed no significance among adjusted comparisons.

**Supplementary Table 4. Adjusted multiple comparisons of CD3+CD8+T cell counts and CD4/CD8 ratio between different time-point after ART treatment (SCHEFFE comparison).**

Time after ART	0.25	0.5	1	2	3	4	5	6	7	8	9	10	CD3+CD8+T (cells/ $\mu$ l) <sup>‡</sup>
0.25	NA												880
0.5	<b>0.4127</b>	NA											825
1	<b>0.3736</b>	<b>0.9999</b>	NA										803
2	<b>0.584</b>	<b>1</b>	<b>1</b>	NA									799.
3	<b>0.0729</b>	<b>0.9086</b>	<b>0.9897</b>	<b>0.9507</b>	NA								757
4	0.0018	<b>0.2701</b>	<b>0.5399</b>	<b>0.3967</b>	<b>0.9686</b>	NA							730
5	0.0137	<b>0.5356</b>	<b>0.8133</b>	<b>0.776</b>	<b>0.9993</b>	<b>1</b>	NA						730
6	0.0045	<b>0.3072</b>	<b>0.5891</b>	<b>0.5601</b>	<b>0.9871</b>	<b>1</b>	<b>1</b>	NA					699
7	0.0089	<b>0.3595</b>	<b>0.6347</b>	<b>0.6234</b>	<b>0.9883</b>	<b>1</b>	<b>1</b>	<b>1</b>	NA				681
8	<b>0.1421</b>	<b>0.8388</b>	<b>0.9601</b>	<b>0.9601</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	NA			699
9	<b>0.8057</b>	<b>0.9992</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0.9997</b>	<b>0.9989</b>	<b>1</b>	NA		723
10	<b>0.596</b>	<b>0.9785</b>	<b>0.9965</b>	<b>0.9966</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	NA	694
0	<b>0.9964</b>	<b>0.2989</b>	<b>0.204</b>	<b>0.3165</b>	0.0281	0.0007	0.0041	0.0013	0.0025	<b>0.0508</b>	<b>0.5558</b>	<b>0.3576</b>	916
													<b>CD4+/CD8+T<sup>‡</sup></b>
0.25	NA												0.46
0.5	<.0001	NA											0.52
1	<.0001	<.0001	NA										0.60
2	<.0001	<.0001	<.0001	NA									0.68

3	<.0001	<.0001	<.0001	<.0001	NA								0.73
4	<.0001	<.0001	<.0001	<.0001	<.0001	NA							0.78
5	<.0001	<.0001	<.0001	<.0001	<.0001	<b>0.6465</b>	NA						0.80
6	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0022	NA					0.85
7	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0147	<b>0.9999</b>	NA				0.85
8	<.0001	<.0001	<.0001	<.0001	<.0001	0.0008	<b>0.0879</b>	<b>0.9999</b>	<b>1</b>	NA			0.83
9	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0005	<b>0.5187</b>	<b>0.7859</b>	<b>0.6482</b>	NA		0.87
10	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0186	<b>0.0626</b>	<b>0.0434</b>	<b>0.7215</b>	NA	0.89
0	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.29

‡CD3+CD8+T cell counts and CD4/CD8 ratio: the CD3+CD8+T cell counts and CD4/CD8 ratio predicted from mixed linear model. Bold characters showed no significance among adjusted comparisons.

**Supplementary Table 5. The influencing factors of percentage of CD4+ CD28+T cell and CD8+CD28+ T cell dynamics with mixed linear model.**

	CD4+ CD28+T cell		CD8+CD28+ T cell	
	Unadjusted Est. Coef (Std. Err.) <sup>†</sup>	Adjusted Est. Coef (Std. Err.) <sup>†</sup>	Unadjusted Est. Coef (Std. Err.) <sup>†</sup>	Adjusted Est. Coef (Std. Err.) <sup>†</sup>
Age				
35–49	–2.1 (0.9)	–1.0 (0.8)	–4.1 (1.1 )	–3.0 (0.8) <sup>‡</sup>
>50	–3.0 (1.3)	–2.1 (1.2)	–9.8 (1.5 )	–9.4 (1.2) <sup>‡</sup>
18–35	0		0	
Gender				
Female	0.4 (1.3)	0.9 (1.2)	–1.9 (1.5)	–2.5 (1.1) <sup>‡</sup>
Male	0		0	
CD4 count at baseline (cells//μl)				
50–100	–2.4 (1.6)	–2.2 (1.5)	1.0 (2.0)	3.2 (1.5) <sup>‡</sup>
100–200	3.0 (1.3)	3.3 (1.2) <sup>‡</sup>	3.4 (1.6)	5.6 (1.2) <sup>‡</sup>
>200	7.8 (1.0)	8.3 (1.1) <sup>‡</sup>	6.9 (1.3)	11.4 (1.1) <sup>‡</sup>
<50	0		0	
Baseline CD8 counts (cells//μl)				
500–999	1.5 (1.1)	NA	0.4 (1.3)	–3.1 (1.0) <sup>‡</sup>
1000–1499	1.6 (1.2)	NA	–3.2 (1.5)	–8.0 (1.2) <sup>‡</sup>
>1500	2.1 (1.6)	NA	–3.2 (1.9)	–9.5 (1.6) <sup>‡</sup>
<500	0		0	
Time after ART initiation (years)				
0.25	5.5 (0.3)	5.4 (0.3) <sup>**</sup>	5.9 (0.3)	6.0 (0.4) <sup>**</sup>
0.5	6.0 (0.4)	6.0 (0.4) <sup>**</sup>	8.3 (0.5)	8.3 (0.5) <sup>**</sup>
1	7.1 (0.5)	7.1 (0.5) <sup>**</sup>	10.2 (0.5)	10.3 (0.5) <sup>**</sup>
2	8.8 (0.5)	8.8 (0.5) <sup>‡</sup>	13.9 (0.6)	14.0 (0.5) <sup>**</sup>
3	9.6 (0.6)	9.7 (0.6) <sup>‡</sup>	17.7 (0.6)	17.7 (0.6) <sup>**</sup>
4	10.5 (0.6)	10.6 (0.6) <sup>‡</sup>	20.5 (0.7)	20.6 (0.7) <sup>**</sup>
5	10.4 (0.7)	10.5 (0.7) <sup>‡</sup>	21.4 (0.8)	21.6 (0.7) <sup>‡</sup>

6	10.8 (0.8)	11.0 (0.8) <sup>‡</sup>	22.8 (0.8)	23.0 (0.8) <sup>‡</sup>
7	11.1 (0.9)	11.4 (0.8) <sup>‡</sup>	23.6 (0.9)	23.9 (0.9) <sup>‡</sup>
8	10.6 (0.9)	11.1 (0.9) <sup>‡</sup>	24.0 (1.0)	24.6 (0.9) <sup>‡</sup>
9	11.4 (1.1)	12.1 (1.1) <sup>‡</sup>	24.7 (1.1)	25.5 (1.1) <sup>‡</sup>
10	10.5 (1.3)	11.6 (1.2) <sup>‡</sup>	24.8 (1.3)	25.9 (1.3) <sup>‡</sup>
0	0		0	
ART regimen				
2NRTIs+INSTI	-0.6 (1.6)	NA	-0.6 (2.0)	2.7 (1.5)
2NRTIs+PI	-2.7 (1.4)	NA	-5.2 (1.7)	0.8 (1.3)
Others	-0.4 (1.6)	NA	-1.9 (1.9)	-0.02 (1.4)
2NRTIs+NNRTI	0		0	
VL <50 cps/ml				
No	7.7 (5.3)	NA	7.6 (6.4)	NA
Yes	0			

Abbreviations: <sup>†</sup>Est. Coef.: estimated coefficient; Std. Err.: standard error. <sup>‡</sup>Between group comparisons of the difference of values at particular time points and the baseline value, *P*-Value < 0.05; \*Adjusted multiple comparisons when compared with indicators at 5-year of ART, *P*-Value < 0.05.