

Supplementary Table 1. HIV-1-specific CD8<sup>+</sup> T-cell responses in acute and early infection, the epitopes targeted and restricting MHC class I alleles.

| HLA    | Protein | Epitope code | Clade-C Sequence | Corresponding OLP |
|--------|---------|--------------|------------------|-------------------|
| A2     | p17     | SL9          | SLYNTVATL        | #11, #12          |
| A2     | RT      | AM9          | ALTAICEEM        | #170              |
| A2     | RT      | VL9          | VYQYMDDL         | #190              |
| A2     | RT      | IV9          | ILKEPVHGV        | #207              |
| A2     | gp41    | SV10         | SLLDTIAIAV       | #396              |
| A2     | Nef     | PL10         | PLTFGWCFKL       | #85               |
| A2     | Nef     | VL10         | VLQWKFD5QL       | #91               |
| A2     | Vpr     | AL9          | ALIRILQQL        | #285              |
| A2     | Nef     | GL9          | GAFDLSFFL        | #78               |
| A2     | p24     | IA9          | ILRALGPGA        | #45               |
| A2     | p24     | GA9          | GVGGPSHKA        | #48               |
| A2     | Rev     | QL9          | QAVRIKIL         | #96               |
| A2     | P15     | QW9          | QANFLGKIW        | #58               |
| A2     | RT      | QV8          | QIYPGKIV         | #202              |
| A2     | Pol     | QL9          | QVRDQAEHL        | #262              |
| A2     | RT      | LI10         | LVGPTPVNIJ       | #162              |
| A0205  | Pol     | YI9          | YTAFTIPSI        | #183              |
| A3     | p17     | KK9          | KLRPRGGK         | #2, #3            |
| A3     | p17     | RH9          | RLRPGGKKH        | #3                |
| A3     | p17     | RLY10        | RLRPGGKKHY       | #3                |
| A3     | RT      | AM9          | ALTAICEEM        | #170              |
| A3     | RT      | GK9          | GIPHPAGLK        | #178              |
| A3     | RT      | KK11         | KMRTAHTNDVK      | #213              |
| A3     | Vif     | KK11         | KIKPPLPSVRK      | #422              |
| A3     | gp120   | TK10         | TVYYGVPVWK       | #293, #294        |
| A3     | gp41    | RR11         | RLRDLIIJAAR      | #391              |
| A3     | RT      | KLK9         | KLAGRWPVK        | #254              |
| A11    | RT      | IN8          | IYQEPFKN         | #212              |
| A23/24 | p17     | HW9          | HMYLKHVLVW       | #4                |
| A23/24 | Nef     | RW8          | RYPLTFGW         | #84               |
| A23/24 | RT      | IL9          | IYQEPFKNL        | #211, #212        |
| A23/24 | gp120   | VW8          | VYYGVPVW         | #293, #294        |
| A23/24 | gp120   | LY10         | LFCASDAKAY       | #295              |
| A23/24 | gp41    | RL9          | RYLKDQQLL        | #366              |
| A23/24 | gp120   | NL10         | NYTNTIYRLL       | #373              |
| A26    | p24     | EL9          | EVIPMFAL         | #23               |
| A29    | Nef     | YY8          | YFPDWQNY         | #82, #83          |
| A29    | p17     | RY11         | RSLYNTVATLY      | #11, #12          |
| A29    | gp160   | SY9          | SFDPPIHY         | #316              |
| A29    | gp120   | SY10         | SFNCRGEFFY       | #338              |
| A29    | gp120   | FY9          | FNCRGEFFY        | #338              |
| A29    | p17     | LY9          | LYNTVATLY        | #11               |
| A30    | Nef     | YY8          | YFPDWQNY         | #82, #83          |
| A3002  | p17     | RLY10        | RLRPGGKKHY       | #3                |

| HLA      | Protein | Epitope code | Clade-C Sequence | Corresponding OLP |
|----------|---------|--------------|------------------|-------------------|
| A3002    | p17     | RY11         | RSLYNTVATLY      | #11, #12          |
| A3002    | RT      | AY11         | AQNPEIVYQY       | #190              |
| A3002    | RT      | KLY9         | KLNWASQIY        | #201, #202        |
| A3002    | Int     | KIY9         | KIQNFRVYY        | #269, #270        |
| A3002    | gp41    | RY9          | RIGPGQTFY        | #330              |
| A3002    | p17     | SW11         | SILRGGKDKW       | #1                |
| A3002    | p17     | RL9          | RFALNPGLL        | #6, #7            |
| A3002    | p24     | KV10         | KNWMTDTLLV       | #43               |
| A3002    | p17     | AF8          | ASRELERF         | #6                |
| A3002    | RT      | RY10         | RAQNPEIVY        | #190              |
| A66      | RT      | ER11         | ETFYVDGAANR      | #224              |
| A6801    | p24     | DA8          | DTINEEAA         | #28               |
| A6801    | VIF     | ER10         | EVHPLGEAR        | #408              |
| A6802    | Int     | EL9          | ETAYFILKL        | #253              |
| A6802    | Int     | EA10         | ETAYFILKLA       | #253              |
| A6802    | RT      | EA9          | ETFYVDGAA        | #223, #224        |
| B7/42/81 | p24     | SV9          | SPRTLNAWV        | #20               |
| B7/42/81 | p24     | TL9          | TPQDLNTML        | #25               |
| B7/42/81 | p24     | HA9          | HPVHAGPIA        | #29, #30          |
| B7/42/81 | p24     | GL9          | GPSHKARVL        | #48               |
| B7/42/81 | Nef     | FL9          | FPVRPQVPL        | #76               |
| B7/42/81 | Nef     | RM9          | RPQVLRPM         | #76               |
| B7/42/81 | Nef     | RGF9         | RPMTFKGAF        | #77               |
| B7/42/81 | Nef     | TL10         | TPGPGVRYPL       | #84               |
| B7/42/81 | RT      | SM9          | SPAIFQSSM        | #187              |
| B7/42/81 | vpr     | FL9          | FPRPWLHGL        | #281, #282        |
| B7/42/81 | gp120   | RI10         | RPNNNTRKSI       | #328              |
| B7/42/81 | Int     | LI9          | LPPIVAKEI        | #244              |
| B7/42/81 | Pro     | TL11         | TPVNIIGRNML      | #163              |
| B7/42/81 | RT      | YL9          | YPGKVKQL         | #202, #203        |
| B7/42/81 | Rev     | RL10         | RPAEPVPLQL       | #102              |
| B7/42/81 | p17     | RLY10        | RLRPGGKKHY       | #3                |
| B7/42/81 | RT      | SL10         | SPIETVPVKL       | #166              |
| B7/42/81 | RT      | RQL11        | RPPLVKLWYQL      | #221              |
| B7/42/81 | Vif     | KL9          | KPKKIKPPL        | #422              |
| B7/42/81 | RT      | TL11         | TPGIRYQYNVL      | #184              |
| B7/42/81 | RT      | GL9          | GPKVKQWPL        | #168              |
| B8       | p17     | EV9          | ELRSLYNTV        | #11               |
| B8       | p24     | DI8          | DIYKRWII         | #36               |
| B8       | Nef     | WM8          | WPAIRERM         | #68               |
| B8       | RT      | GL9          | GPKVKQWPL        | #168              |
| B8       | gp41    | YL8          | YLKDQQLL         | #366              |
| B8       | P15     | EL8          | EPKDREPL         | #64               |
| B8       | RT      | VI8          | VPRRKAKI         | #274, #275        |

Supplementary  
Table 1.  
continued

| HLA   | Protein | Epitope code | Clade-C Sequence | Corresponding OLP |
|-------|---------|--------------|------------------|-------------------|
| B14   | p24     | DA9          | DRFFKTLRA        | #41               |
| B14   | p15     | CC9          | CRAPRKKG         | #55               |
| B14   | gp41    | EL9          | ERYLKDQQL        | #366              |
| B1503 | Tat     | FY10         | FQTKGLGISY       | #115              |
| B1503 | RT      | FY10         | FKRKGGGY         | #265              |
| B1503 | p24     | VF9          | VKVIIEKAF        | #21               |
| B1503 | RT      | IY9          | IQQEFGIPY        | #258, #259        |
| B1503 | RT      | RY9          | RKAKIHKDY        | #275              |
| B1503 | RT      | GL9          | GKKAIGTVL        | #162              |
| B1510 | p17     | RL9          | RFALNPGLL        | #6, #7            |
| B1510 | p24     | VL10         | VHQAISPRTL       | #20               |
| B1510 | p24     | GL9          | GHQAAQMML        | #26, #27          |
| B1510 | Vif     | WI9          | WHLGHGVS         | #411              |
| B1510 | p17     | GI9          | GKVSQNYPI        | #18               |
| B1510 | Rev     | IL9          | IHSISERIL        | #100              |
| B1510 | RT      | TIL9         | THLEKIIIL        | #249              |
| B1510 | Rev     | GL11         | GRPAEPVPLQL      | #102              |
| B1510 | p17     | KL8          | KHYMLKHL         | #4                |
| B18   | Nef     | YF9          | YPLTFGWCF        | #84, #85          |
| B18   | Vif     | LY10         | LADQLIHMHY       | #415              |
| B18   | RT      | NY10         | NETPGIRYQY       | #184              |
| B18   | Int     | VL9          | VASCDKCQL        | #246              |
| B18   | RT      | NY9          | NPEIVIQY         | #190              |
| B18   | RT      | SY11         | SEVNIIVTDSQY     | #230              |
| B18   | Rev     | DI10         | DEALLQAVRI       | #95               |
| B18   | Vif     | IY8          | IEWRLRRY         | #413              |
| B18   | Nef     | QY9          | QEILDWVY         | #81               |
| B18   | VPR     | NL10         | NEWTELLEEL       | #279              |
| B18   | VPR     | GW10         | GPQREPYNEW       | #279              |
| B35   | Nef     | VF8          | VPLRPMTF         | #76, #77          |
| B35   | RT      | VY10         | VPLDEDFRKY       | #182              |
| B35   | RT      | NQY9         | NPEIVIQY         | #190              |
| B35   | gp120   | DL9          | DPNPQEMVL        | #299              |
| B35   | Tat     | EW10         | EPVDPNLEPW       | #111              |
| B35   | Nef     | YF9          | YPLTFGWCF        | #84, #85          |
| B39   | RT      | IL9          | IVTDSQYAL        | #231              |
| B44   | Vif     | SL9          | SEGATPQDL        | #24               |
| B44   | p24     | RL11         | RDYVDRFFKTL      | #40               |
| B44   | p24     | AW11         | AEQATQDVKNW      | #42               |
| B44   | Nef     | GV11         | GEVGFVPRPQV      | #75               |
| B45   | RT      | AA9          | AETFYVDGA        | #223, #224        |
| B45   | p24     | II10         | IEEKAFSPEVI      | #22               |

| HLA    | Protein | Epitope code | Clade-C Sequence | Corresponding OLP |
|--------|---------|--------------|------------------|-------------------|
| B44    | RT      | SY11         | SEVNIIVTDSQY     | #230              |
| B44    | RT      | IW11         | IEELREHLLKW      | #194              |
| B44    | Int     | QW11         | QEEHEKYHSNW      | #242              |
| B53    | p17     | WF9          | WASRELERF        | #5                |
| B53    | p24     | QW9          | QATQDVKNW        | #42               |
| B53    | Nef     | YF9          | YPLTFGWCF        | #84, #85          |
| B53    | RT      | EW10         | EPVDPNLEPW       | #111              |
| B53    | RT      | QW11         | QPIQLPEKDSW      | #199              |
| B57    | p17     | WF9          | WASRELERF        | #5                |
| B57    | p24     | ISW9         | ISPRTLNAW        | #20               |
| B57    | p24     | KF11         | KAFSPEVPMF       | #22               |
| B57    | p24     | TW10         | TSTLQEQUIAW      | #33, #34          |
| B57    | p24     | QW9          | QATQDVKNW        | #42               |
| B57    | Nef     | HW9          | HTQGYFPDW        | #82               |
| B57    | RT      | IAW9         | IAMESIVIW        | #216              |
| B57    | Vif     | VF9          | VSRRANGWF        | #405              |
| B57    | RT      | AF10         | QATWIPEWEF       | #220              |
| B57    | RT      | FF9          | FSVPLDEDF        | #181              |
| B57    | RT      | EY9          | ETKIGKAGY        | #226              |
| B57    | RT      | KI13         | KAGYVDRGRQKI     | #226              |
| B57    | Pol     | VI9          | VTDRGRQKI        | #226              |
| Cw0202 | RT      | IY10         | ILKEPVHGVY       | #207              |
| Cw0202 | Pol     | EY11         | EILKEPVHGVY      | #207              |
| Cw3    | p24     | YL9          | YVDRFFKTL        | #40               |
| Cw4    | p24     | QW9          | QATQDVKNW        | #42               |
| Cw4    | Nef     | YY8          | YFPDWQNY         | #82, #83          |
| Cw4    | gp41    | EW11         | EIWDNMTW/MQV     | #371              |
| Cw4    | RT      | TF10         | TVLDVDAYF        | #180              |
| Cw6    | gp120   | II13         | IRSENLTNNAKTI    | #325              |
| CW6    | gp120   | LL12         | LTNNAKTIIVHL     | #325              |
| Cw06   | gp120   | AL8          | AKTIIVHL         | #325              |
| CW0602 | Pol     | KR9          | KTGKYAKMR        | #213              |
| Cw7    | Nef     | KY11         | KRQEILDWVY       | #81               |
| Cw8    | p24     | TL9          | TPQDLNTML        | #25               |
| Cw8    | Rev     | PL9          | PAEPVPLQL        | #102, #103        |
| Cw8    | RT      | IL9          | IVTDSQYAL        | #231              |
| Cw12   | RT      | IL9          | IVTDSQYAL        | #231              |
| Cw1701 | Rev     | RL10         | RPAEPVPLQL       | #102              |
| Cw18   | p24     | FFF9         | FRDYVDRFF        | #40               |
| Cw18   | p24     | VI9          | VRMYSVSI         | #37               |
| Cw1801 | RT      | VL8          | VRDQAEHL         | #262              |

Supplementary Table 2. T-cell responses to OLPs that are not known to contain defined CD8+ T-cell epitopes.

| <b>PID</b> | <b>OLP #</b> | <b>Region</b> | <b><i>Sequence</i></b> | <b>No. of time-points<br/>where response<br/>was detected</b> | <b>No. of<br/>SFC/10<sup>6</sup> PBMC</b> |
|------------|--------------|---------------|------------------------|---------------------------------------------------------------|-------------------------------------------|
| AS2-1037   | #9           | p17           | EGCKQIMKQLQPALQTGT     | 1                                                             | 260                                       |
| AS5-0643   | #52          | p15           | QRSNFKGPKRIVKCF        | 1                                                             | 200                                       |
| AS1-0703   | #117         | Tat           | GRKKRRQRRSAPPSEDH      | 2                                                             | 4000; 520                                 |
| AS3-0458   | #125         | Vpu           | LIVALIIAIVVWTIAYIEY    | 1                                                             | 240                                       |
| AS2-0110   | #229         | RT            | VSLTETTNQKTELQAIQL     | 2                                                             | 360                                       |
| AS2-0050   | #229         | RT            | QKTELQAIQLALQDSGSEV    | 5                                                             | 4000; 1500                                |
| AS3-0458   | #252         | INT           | GYIEAEVIPAETGQETAY     | 1                                                             | 180                                       |
| AS3-0268   | #287         | Vpr           | HFRIGCQHSRIGILRQRR     | 1                                                             | 280                                       |

Supplementary Table 3. HIV-1-specific T-cell responses determined by the ex vivo ELISPOT assay during the entire follow up period and responses measured using cultured ELISPOT assay at 52 weeks.

| Participant ID | Pre-culture                           |                                | Post-culture                       |                                    |
|----------------|---------------------------------------|--------------------------------|------------------------------------|------------------------------------|
|                | Responses detected from 4 to 26 weeks | Responses detected at 52 weeks | All responses detected at 52 weeks | Gag specific responses at 52 weeks |
| AS1-0703       | 10                                    | 3                              | 4                                  | 0                                  |
| AS1-0876       | 9                                     | 4                              | 3                                  | 2                                  |
| AS1-0919       | 16                                    | 4                              | 9                                  | 0                                  |
| AS2-0341       | 6                                     | 0                              | 4                                  | 0                                  |
| AS2-0358       | 20                                    | 5                              | 0                                  | 0                                  |
| AS2-0945       | 13                                    | 7                              | 2                                  | 1                                  |
| AS3-0740       | 12                                    | 3                              | 3                                  | 3                                  |
| AS5-0953       | 10                                    | 3                              | 2                                  | 2                                  |
| <b>TOTAL</b>   | 96                                    | 29                             | 27                                 | 8                                  |