Supplementary Table1. Animals included in the study. The first table summarises the characteristics of the SIV-infected animals and the second those of the control groups for flow cytometry and mass cytometry.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Group** | **Treatment** | **Name** | **Sex** | **CMH Haplotype 1** | **CMH Haplotype 2** | **Age at sampling (years)** | **Time of infection at sampling** | **Days under treatment at sampling** | **Viral load (RNA copies/ml)** |
| **CyTOF SIV+** | **No** | CE355 | Femelle | H2 | H1 | 4.6 | 536 |  | 1.2 x $10^{4}$ |
| CG588 | Male | H1 | Rec:H4-H3 | 4.1 | 536 |  | 1.6 x $10^{5}$ |
| **Flow cytometry SIV +** | **No** | CBK061 | Male | rec H4H1H2 | rec H2H3 | 4.8 | 288 |  | 3 x$10^{2}$ |
| CCB070 | Male | H3 | recH3H4 | 4.5 | 288 |  | 7.1 x $10^{4}$ |
| CCC066 | Male | H1 | H2 | 4.4 | 288 |  | 1.5 x $10^{5}$ |
| BA912K | Male | H1 | H2 | 5.1 | 120 |  | 1.4 x $10^{4}$ |
| BA987H | Male | H4 | H3 | 5.5 | 120 |  | 2.8 x $10^{3}$ |
| BB425F | Male | H1 | rec H2-H5 | 5.5 | 120 |  | 1.2 x $10^{5}$ |
| CCB063 | Male | H1 | recH2-H5 | 4.6 | 120 |  | 1.3 x $10^{4}$ |
| CCB114 | Male | recH3-H4 | H2 | 4.5 | 120 |  | 4.7 x$10^{4}$ |
| CCE007 | Male | H1 | H3 | 4.3 | 120 |  | 8.4 x $10^{4}$ |
| **cART** | BA736J | Male | rec H1-H2-H1 | H4 | 5.5 | 120 | 92 | < 50 |
| BA777K | Male | H2 | H1 | 5.0 | 120 | 92 | < 50 |
| BA922I | Male | H3 | H1 | 6.2 | 120 | 92 | < 50 |
| BB123J | Male | rec H2-H1 | H3 | 5.5 | 120 | 92 | 2 x $10^{2}$ |
| CA706F | Male | H5 | rec H4-H1H2 | 4.5 | 120 | 92 | < 50 |
| CCB065 | Male | H3 | H4 | 4.6 | 120 | 92 | < 50 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Group** | **cART** | **Name** | **Sex** | **CMH Haplotype 1** | **CMH Haplotype 2** | **Age at sampling (years)** |
| **CyTOF SIV- control group** | **No** | CBL017 | Femelle | H4 | H5 | 4 |
| CBL018 | Femelle | H5 | H6 | 4 |
| CCB059 | Femelle | Null | Null | 3.8 |
| **Flow cytometry SIV- control group** | **No** | BA878K | Male | H3 | H2 | 5.5 |
| BA922J | Male | H1 | H3 | 4.5 |
| BB9I | Male | H1 | H2 | 6.7 |
| BB340E | Male | rec H3-H1 | H4 | 6.5 |
| BB799G | Male | recH3-H5 | recH2-H3 | 4.3 |
| CA871B | Male | H1 | rec H1-H2-H3 | 5.5 |
| CA872C | Male | H1 | rec H1-H3 | 4.4 |
| CB806C | Male | rec H1-H5-H3 | H3 | 4.9 |
| CCB021 | Male | rec H6-H1 | H2 | 4.6 |

# Supplementary Table 2. Antibody panel used for mass cytometry analysis

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Metal** | **Antibody** | **Supplier** | **catalogue #** | **clone**  | **Concentration µg/well** |
| 141Pr | CD66 (a, b, c, e) | Miltenyi | 130-095-212  | TET2 | 0.15 |
| 142Nd | HLA-DR | BD | 555810 | L243 | 0.125 |
| 143Nd | CD3 | BD | 551916 | SP34.2 | 1.5 |
| 144Nd | CD64 | BD | 555525 | 10.1 | 1 |
| 145Nd | CD8 | BD | 557084 | RPAT8 | 0.5 |
| 146Nd | CD45 | BD |  552566 | D058-1283 | 0.25 |
| 147Sm | CD123 | BD | 554527 | 7G3 | 0.5 |
| 148Nd | Granzyme B | AbD serotec | M1755 | GB11 | 0.5 |
| 149Sm | CD11a | BD | 555382 | HI111 | 0.5 |
| 150Nd | CD11b | BD | 555386 | ICRF144 | 0.5 |
| 151Eu | CD38 | Stem cell | ab131420 | AT-1 | 0.75 |
| 152Sm | CD16 | BD | 555404 | 3G8 | 1.35 |
| 153Eu | CD23 | B. Coulter | IMBULK1 | 9P25 | 1.35 |
| 154Sm | CD86 | BD | 555663 | IT2.2 | 1.25 |
| 155 | CD32 | BD | 557333 | FLI8.26 | 0.5 |
| 156Gd | CD162 | BD | 556053  | KPL-1 | 0.75 |
| 159Tb | CCR7 (CD197) | biolegend | 353237 | G043H7 | 0.5 |
| 160Gd | CD5 | biolegend | 300627 | UCHT2 | 0.5 |
| 161Dy | CD1c | Biotechne | AF5910 | AF5910 | 0.5 |
| 162 | CX3CR1 | Ozyme | 341602  | 2A9-1 | 0.75 |
| 163Dy | CD34 | BD | 3163014B | 563 | 0.75 |
| 164Dy | CD184 (CXCR4) | BD | 555972 | 12G5 | 0.5 |
| 165Ho | CD39 | Ebioscience | 14-0399-82 | eBioA1 | 0.5 |
| 166Er | CD195 (CCR5) | BD | 556041 | 3A9 | 0.5 |
| 167Er | CD28 | BD | 555726 | CD28.2 | 1.35 |
| 168Er | CD11c | Biolegend | 301639 | 3.9 | 1.25 |
| 170Er | CD14 | BD | 555396 | M5E2 | 0.75 |
| 171Yb | CD4 | BD | 550625 | L200 | 1.25 |
| 172 | CD25 | Miltenyi | 130-091-235  | 4E3 | 1.25 |
| 173Yb | CD141 | DVS | 3173002B | 1A4 | 0.5 |
| 174Yb | CD20 | BD | 556631 | 2H7 | 1 |
| 175 | Perforin | Mabtech | 3465-5-250 | PF-344 | 1.25 |
| 176 | CD205 | BD | 558531 | MG38 | 0.75 |

# Supplementary Table 3. Number of acquired events per sample on CyTOF

|  |  |  |
| --- | --- | --- |
| Animal | Compartment | Acquired events |
| CBL017 | Blood | 317,675 |
| CBL017 | Bone marrow | 509,874 |
| CBL018 | Blood | 209,830 |
| CBL018 | Bone marrow | 576,440 |
| CCB059 | Blood | 321,771 |
| CCB059 | Bone marrow | 429,870 |
| CE355 | Blood | 340,246 |
| CE355 | Bone marrow | 608,157 |
| CG588 | Blood | 242,474 |
| CG588 | Bone marrow | 529,787 |

**Supplementary Table 4**. Cell population definitions

|  |  |
| --- | --- |
| **Cell population** | **Markers** |
| T cells | CD3+ |
| NK cells | CD3- CD8+ |
| B lymphocytes | CD20+ HLA-DR+ |
| Monocytes | CD14+ HLA-DR+ |
| cDC | CD14- HLA-DR+ CD11c+ CD16+ |
| pDC | CD123+ HLA-DR+ |
| Basophil | CD66- CD123+ HLA-DR- |
| Neutrophil | CD66+ |
| Pre-neutrophils | CD66-low CD45-low CD32- CD11b- CXCR4+ |
| Immature neutrophils | CD66-high CD45-mid CD32-mid CD11b- CXCR4+ |
| Mature neutrophils | CD66-high CD45-high CD32-high CD11b+ CXCR4- |

# Supplementary Table 5. Antibody panel used for phenotypic analysis and phagocytosis assay

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Antibody** | **Clone** | **Fluor** | **Laser-filtre** | **Provider** | **Reference** |
| Live/Dead |  |  | 355-450/50 | Life Techno |  |
| CD64 | 10.1 | BUV737 | 355-740/35 | BD | 564425 |
| CD11b | ICRF44 | V450 | 405-450/50 | BD | 560480 |
| CD3 | SP34.2 | BV650 | 405-660/20 | BD | 563916 |
| CD8a | RPAT8 | BD | 563821 |
| CD20 | 2H7 | BD | 563780 |
| CD62L | SK11 | BV711 | 405-710/50 | BD | 565040 |
| CD32abc | FLI8.26 | BV786 | 405-780/60 | BD | 564840 |
| CD14 | M5E2 | FITC | 488-530/30 | BD | 555397 |
| CD16 | 3G8 | PerCP-Cy5,5 | 488-695/40 | BD | 560717 |
| CDw125 | A14 | PE | 561-585/15 | BD | 555902 |
| CXCR4 | 12G5 | PE-Dazzle 594 | 561-610/20 | Biolegend | 329732 |
| CD89 | A59 | PE-Cy7 | 561-780/60 | Biolegend | 354108 |
| HLA-DR | L234 | AF700 | 640-730/45 | Biolegend | 307626 |
| CD66 | TET2 | APC-Vio770 | 640-780/60 | Miltenyi | 130-101-132 |
| pHrodo |  | FITC | 488-530/30 | Thermo |  |

# Supplementary Figure 1. Heatmap and hierarchical clustering of the 100 cell clusters obtained after SPADE analysis. The mean of the median marker expression of cells contained in each node was used to assign the expression of each marker to one of the five categories. Data for individuals with less than 50 events in a given node were excluded from the calculation to avoid biasing the phenotypic characterization of these small cell nodes. Hierarchical clustering was performed using the Euclidean metric and complete linkage method we recently published.

**Supplementary Figure 2**. CD66 and CD32 MFI in early chronic-phase neutrophils. There were no significant differences between groups in terms of CD66 and CD32a expression.