

**Table S2** The absolute numbers of NKT cells and  $\alpha\beta$ T cells (thymocytes) in different organs in various hu-thy/liv-SCID chimers

| Animal model/<br>treatment*    | NKT cells <sup>‡</sup> |                               |                               |                    |                  |                   | $\alpha\beta$ T cells (thymocytes) <sup>‡</sup> |                               |                               |                       |                  |                  |
|--------------------------------|------------------------|-------------------------------|-------------------------------|--------------------|------------------|-------------------|-------------------------------------------------|-------------------------------|-------------------------------|-----------------------|------------------|------------------|
|                                | Thymus <sup>†</sup>    |                               |                               | Liver <sup>†</sup> |                  |                   | Thymus <sup>†</sup>                             |                               |                               | Spleen <sup>†</sup>   |                  |                  |
|                                | Total <sup>§</sup>     | CD4 <sup>+</sup> <sup>§</sup> | CD8 <sup>+</sup> <sup>§</sup> | Total              | CD4 <sup>+</sup> | CD8 <sup>+</sup>  | Total <sup>§</sup>                              | CD4 <sup>+</sup> <sup>§</sup> | CD8 <sup>+</sup> <sup>§</sup> | Total                 | CD4 <sup>+</sup> | CD8 <sup>+</sup> |
| SCh/EBV <sup>-</sup>           | 0.48 <sup>¶</sup>      | 0.47                          | <0.1                          | 0.82               | 0.81             | VL <sup>#</sup>   | 73.4                                            | 39.1                          | 31.1                          | 88.1                  | 50.2             | 37.2             |
| SCh/EBV <sup>+</sup>           | 9.6 <sup>  </sup>      | 6.5                           | 2.9 <sup>  </sup>             | 8.4 <sup>  </sup>  | 5.9              | 2.3 <sup>  </sup> | 76.8                                            | 38.4                          | 35.0                          | 72.4                  | 40.1             | 30.1             |
| SCh/HTLV <sup>+</sup>          | 0.51                   | 0.49                          | <0.1                          | 1.1                | 1.0              | VL                | 101.7 <sup>    </sup>                           | 54.8                          | 44.0                          | 110.2 <sup>    </sup> | 65.5             | 44.1             |
| DP~Ch/EBV <sup>-</sup>         | 0.48                   | 0.44                          | <0.1                          | 1.2                | 1.1              | VL                | 78.4                                            | 41.9                          | 34.9                          | 65.4                  | 37.1             | 26.2             |
| DP~Ch/EBV <sup>+</sup>         | 0.69                   | 0.65                          | <0.1                          | 0.94               | 0.93             | VL                | 81.3                                            | 48.0                          | 31.1                          | 70.8                  | 38.4             | 30.1             |
| DP~Ch+DC/EBV <sup>-</sup>      | 0.72                   | 0.72                          | <0.1                          | 0.85               | 0.83             | VL                | 82.4                                            | 47.2                          | 32.6                          | 77.9                  | 42.1             | 32.4             |
| DP~Ch+DC/EBV <sup>+</sup>      | 10.1 <sup>  </sup>     | 6.5                           | 3.1 <sup>  </sup>             | 10.4 <sup>  </sup> | 6.8              | 3.5 <sup>  </sup> | 85.9                                            | 49.5                          | 32.8                          | 81.4                  | 46.4             | 35.2             |
| DP~Ch-DC/EBV <sup>-</sup>      | 0.61                   | 0.59                          | <0.1                          | 0.75               | 0.74             | VL                | 77.1                                            | 40.7                          | 36.6                          | 85.5                  | 48.5             | 35.1             |
| DP~Ch-DC/EBV <sup>+</sup>      | 0.74                   | 0.73                          | <0.1                          | 0.93               | 0.91             | VL                | 77.4                                            | 41.1                          | 33.7                          | 81.4                  | 42.4             | 37.2             |
| DP~Ch+BMDC/EBV <sup>-</sup>    | 0.55                   | 0.53                          | <0.1                          | 0.72               | 0.71             | VL                | 88.1                                            | 54.2                          | 32.4                          | 80.2                  | 47.4             | 32.0             |
| DP~Ch+BMDC/EBV <sup>+</sup>    | 8.8 <sup>  </sup>      | 6.1                           | 2.5 <sup>  </sup>             | 10.2 <sup>  </sup> | 7.1              | 3.0 <sup>  </sup> | 79.2                                            | 45.2                          | 30.4                          | 77.4                  | 40.3             | 35.4             |
| SCh/EBV <sup>+</sup> /IL-7     | 15.1 <sup>  </sup>     | 9.0                           | 5.1 <sup>  </sup>             | 10.7 <sup>  </sup> | 7.1              | 3.4 <sup>  </sup> | 82.2                                            | 50.1                          | 29.8                          | 73.1                  | 40.1             | 30.8             |
| SCh/EBV <sup>+</sup> /IL-7+Ab  | 0.95                   | 0.88                          | <0.1                          | 0.98               | 0.95             | VL                | 87.4                                            | 49.2                          | 35.0                          | 68.7                  | 38.1             | 36.2             |
| SCh/EBV <sup>+</sup> /IL-7+Iso | 14.2 <sup>  </sup>     | 8.1                           | 4.0 <sup> </sup>              | 10.6 <sup>  </sup> | 7.2              | 3.1 <sup>  </sup> | 80.1                                            | 47.4                          | 32.1                          | 85.2                  | 45.6             | 39.1             |

\*. The hu-thy/liv-SCID chimera was established as described in M&M (referred to as standard chimera, and abbreviated as SCh in this table). The hu-thy/liv-SCID chimera i.t. challenged with EBV (EBV<sup>+</sup>) or HTLV-1 (HTLV-1<sup>+</sup>). EBV<sup>-</sup>, unchallenged chimera. DP~Ch, the hu-thy/liv-SCID chimera was established by intrathymic transplantation with DP thymocytes. DP~Ch+DC, the hu-thy/liv-SCID chimera was established by intrathymic transplantation with DP thymocytes plus syngeneic thymic DCs and other stromal cells. DP~Ch-DC, the hu-thy/liv-SCID chimera was established by intrathymic transplantation with DP thymocytes plus syngeneic stromal cells but thymic DCs depleted. DP~Ch+BMDC, the hu-thy/liv-SCID chimera was established by intrathymic transplantation with DP thymocytes plus syngeneic bone marrow-derived DCs and other stromal cells (thymic DCs depleted). SCh/EBV<sup>+</sup>/IL-7, SCh/IL-7+Ab, SCh/IL-7+Iso, SCh was challenged with EBV and treated i.v. with IL-7, or with IL-7 plus mAb against IL-7, or IL-7 plus isotype Ab. For details, see M&M and the legends for Figure 2, 3, and 6.

†. Various chimeras were sacrificed at week 5 post-immune-reconstitution and viral challenge (and cytokine treatment). The different organs were collected.

‡. The experimental and analysis scheme for detecting the co-receptor-expressing NKT cells and T cells in various organs from different hu-thy/liv-SCID chimeras was illustrated in Figure 2, 3, and 6. Empty CD1d tetramer and isotype matched control Abs, which were used as staining controls, were not presented in this table.

§. For simplicity,  $\alpha\beta$ T cells (thymocytes) in thymus were only shown total, CD4<sup>+</sup> and CD8<sup>+</sup> subsets, but not CD4<sup>-</sup>CD8<sup>-</sup> and CD4<sup>+</sup>CD8<sup>+</sup> subsets.

¶. The absolute numbers of various cells were estimated by the formula: percentage of positive cells  $\times$  total volume of cell suspension harvested = the total number of the cells. Data were presented as mean  $\pm$  s.d. ( $\times 10^4$ ).  $n = 7$  or  $8$ . For simplification, only total cells, CD4<sup>+</sup> or CD8<sup>+</sup> cells were shown, the standard deviation values were not shown in the table.

||.  $p < 0.001$  by the Student  $t$  test, EBV-challenged chimeras vs. non-challenged or HTLV-1-challenged chimeras; DP~Ch+DC or DP~Ch+BMDC chimeras vs. DP~Ch or DP~Ch-DC chimeras; SCh/EBV<sup>+</sup>/IL-7 chimeras vs. SCh/IL-7+Ab or SCh/IL-7+Iso chimeras.

||||.  $p < 0.05$ .

#. VL, very low level (below detectable levels).