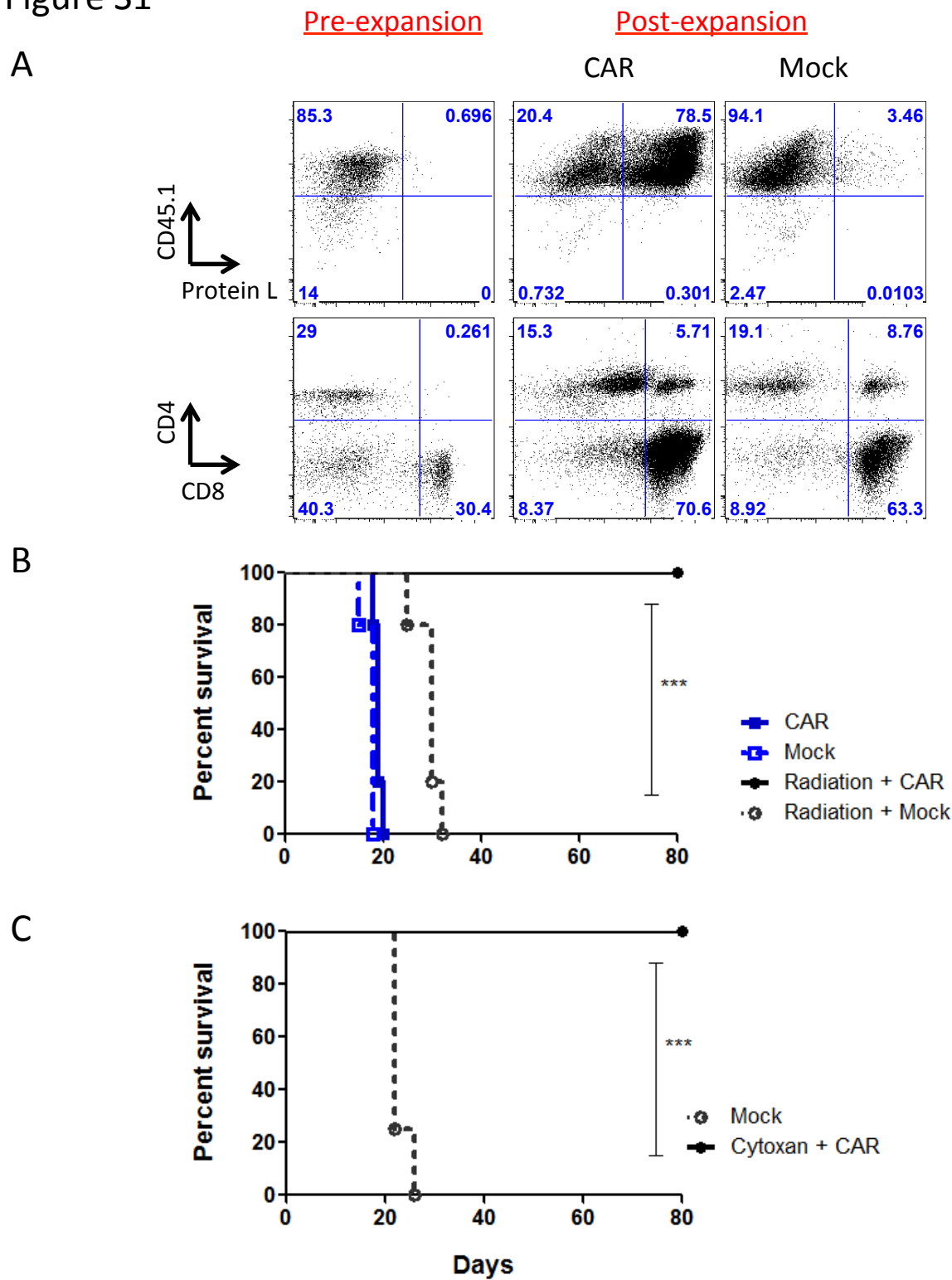


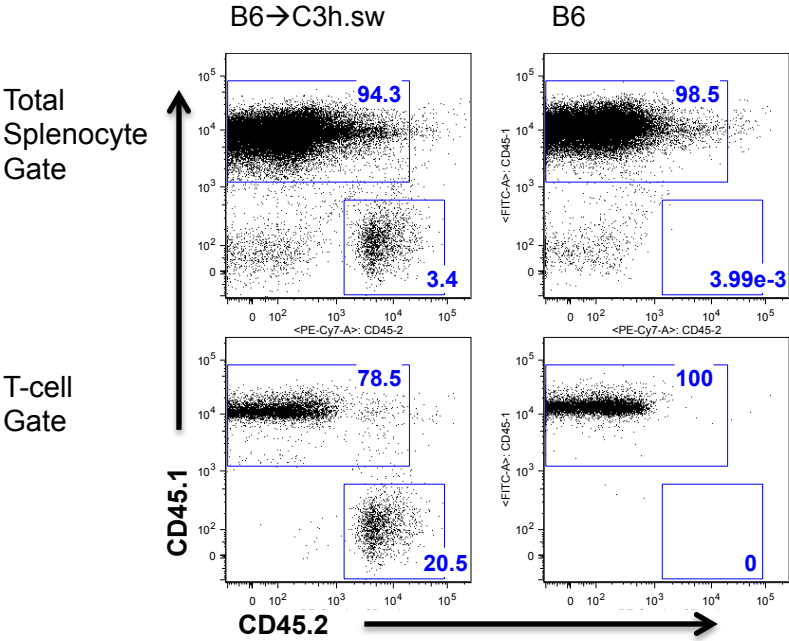
Figure S1



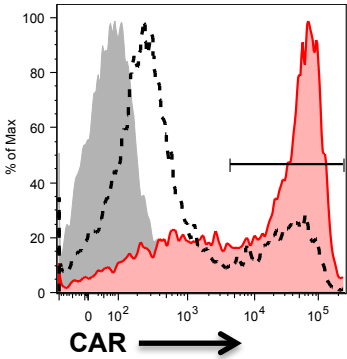
**Supplementary Figure 1: Murine CAR T cells rescues leukemia following lymphodepletion.** (A) Representative flow cytometry plots of mouse splenocytes following T cell enrichment, following expansion CD19-CAR transduction (CAR) and following expansion without CAR transduction (mock). (B) mice were IV injected on day 0 with  $10^6$  CD19+ ALL, followed by CD19-CAR T cells or Mock T cells on day 2 (blue and dashed blue), or by 500cGy radiation on day 3 and CD19-CAR T cells or mock cells on day 4 (Grey and dashed grey). (C) Similar, with cyclophosphamide 4gr/mouse as lymphodepletion prior to CD19-CAR (full line) or Mock (dashed line) T cells. \*\*\*= $p<0.001$

Figure S2

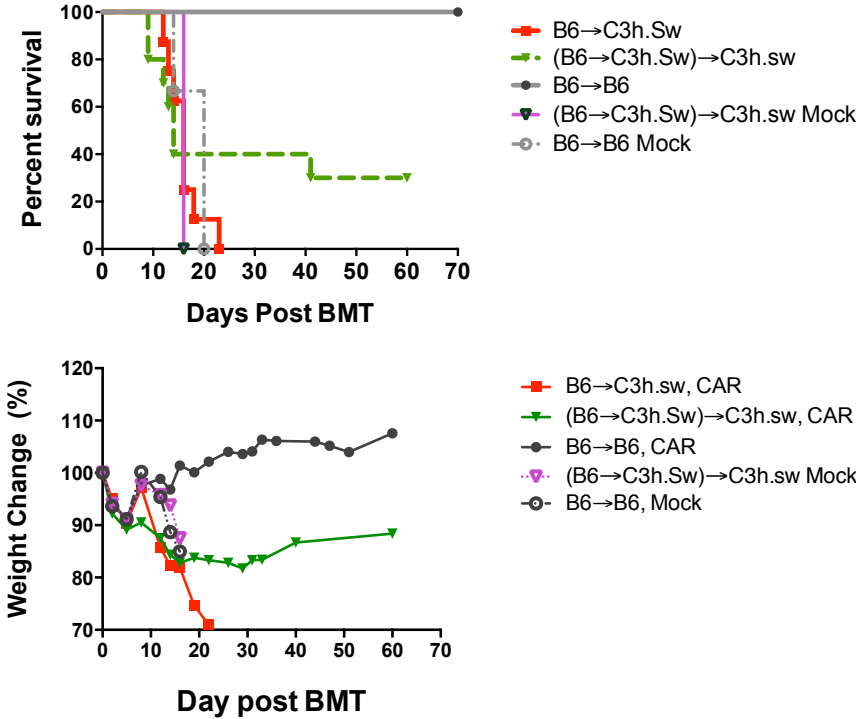
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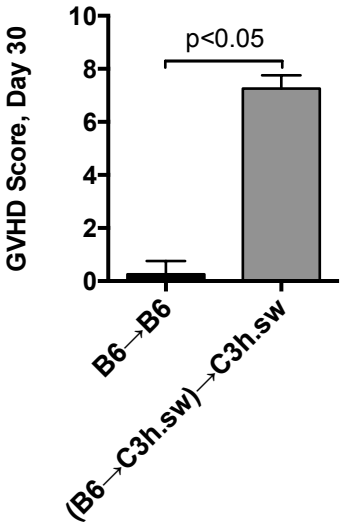
B



C

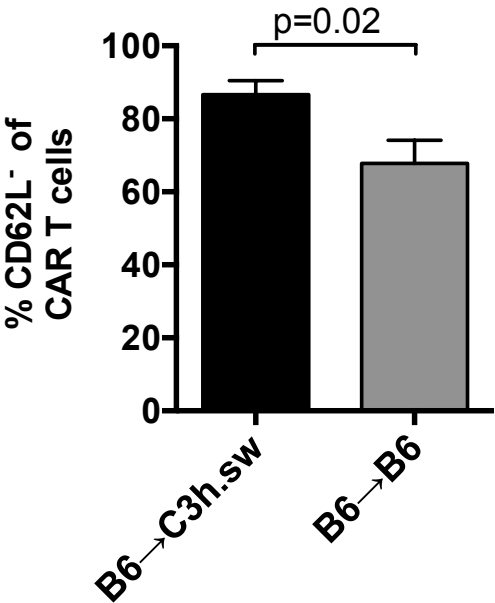


D



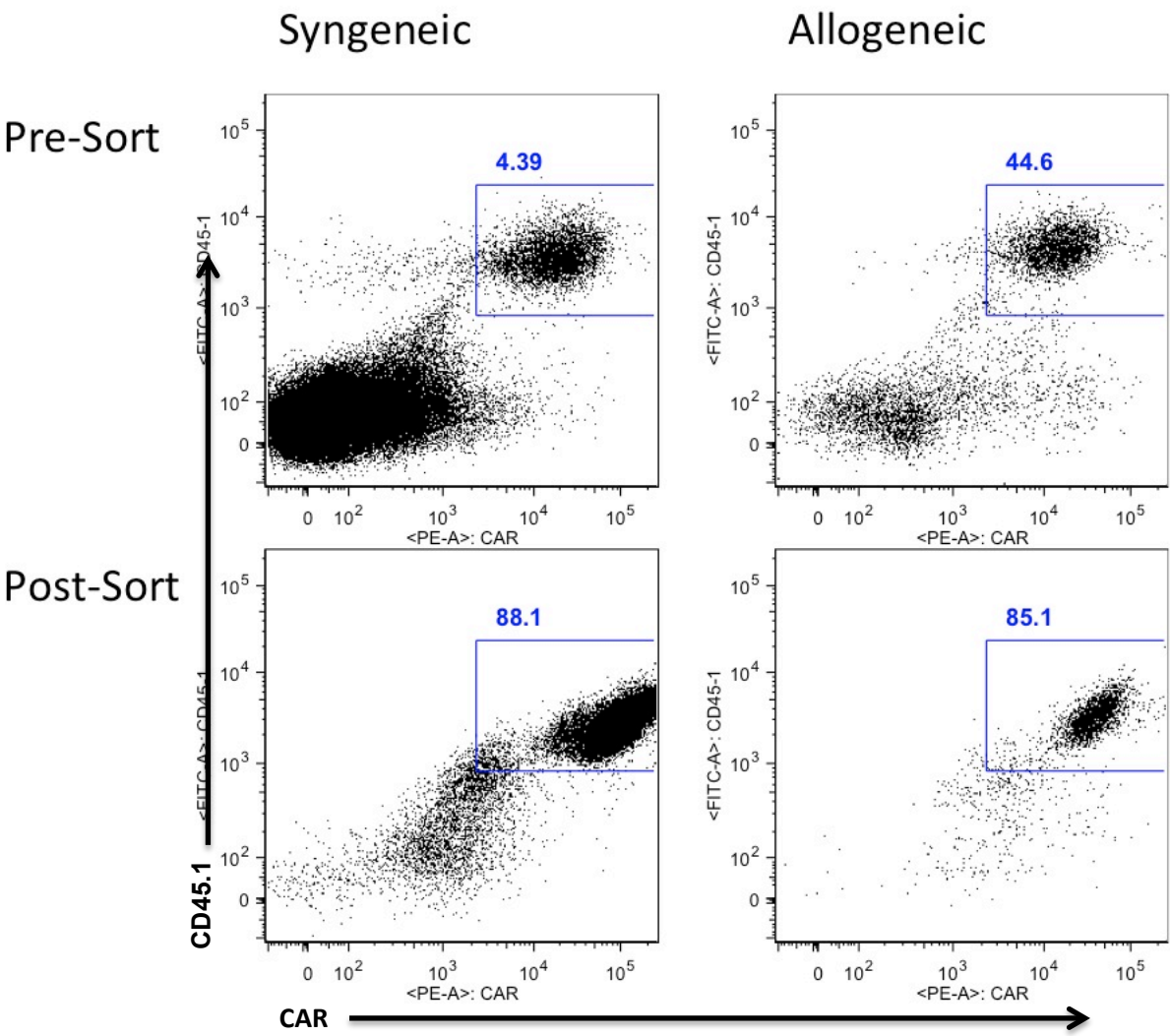
**Supplementary Figure 2: Tolerized T cells partially rescues acute GVHD.** (A) Splenic chimerism status by CD45 isoforms of B6/CD45.1 to C3h.sw mice compared with B6/CD45.1 mice, in total splenocytes and T cells. These mice were used as T cell donors for the following experiments. (B) CD19-CAR transduction efficiency of B6 CAR T cells (red), B6 to C3h.sw tolerized CAR T cells (dashed) and mock T cells (grey). (C) Survival curves and weight change of mice treated as in figure 1A, when CAR T cells are allogeneic donor derived (B6 to C3h.sw, red), tolerized ((B6 to C3h.sw) to C3h.w, green) or syngeneic (B6 to B6, grey), along with mock treated syngeneic (B6 to B6, grey open circles) and mock treated tolerized ((B6 to C3h.sw) to C3h.sw, violet). (D) GVHD clinical score on day 30 of survivors of B6 to B6 CAR vs (B6 to C3h.sw) to C3h.sw CAR.

Figure S3



**Supplementary Figure 3:** Proportion of CD62L<sup>-</sup> of total CD45.1<sup>+</sup> CAR<sup>+</sup> T-cells in the spleen of B6→C3h.sw allogeneic CAR recipients or B6→B6 controls, on day 9 post BMT.

Figure S4



**Supplementary Figure 4: CAR expression on sorted donor-derived cells on day 7.** Spleens were harvested on day 7 from B6→B6 recipients (Syngeneic) or B6→C3h.sw recipients (Allogeneic). Flow cytometry plots of CD45.1 and CAR (measured by protein-L staining) on splenocytes and following CD45.1+ MACS sorting.