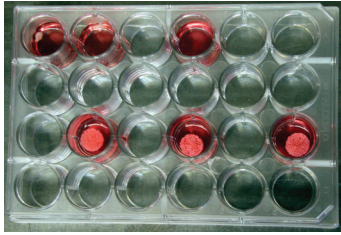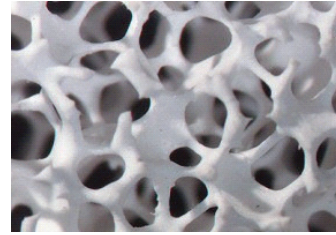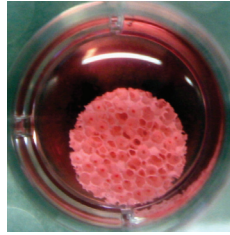**Supplementary Figure 1:** Controlling lack of HP 15 hours after in vivo transfer of naïve 2C T cells. CFSE-labeled naïve 2C T cells (5x106) were transferred into a Rag2-/-. After 15 hours, inguinal LNs were harvested, homogenized and analyzed by flow cytometry for CFSE dilution of the transferred CD8+, 1B2+ 2C T cells. Shown are results representative of two individual experiments.
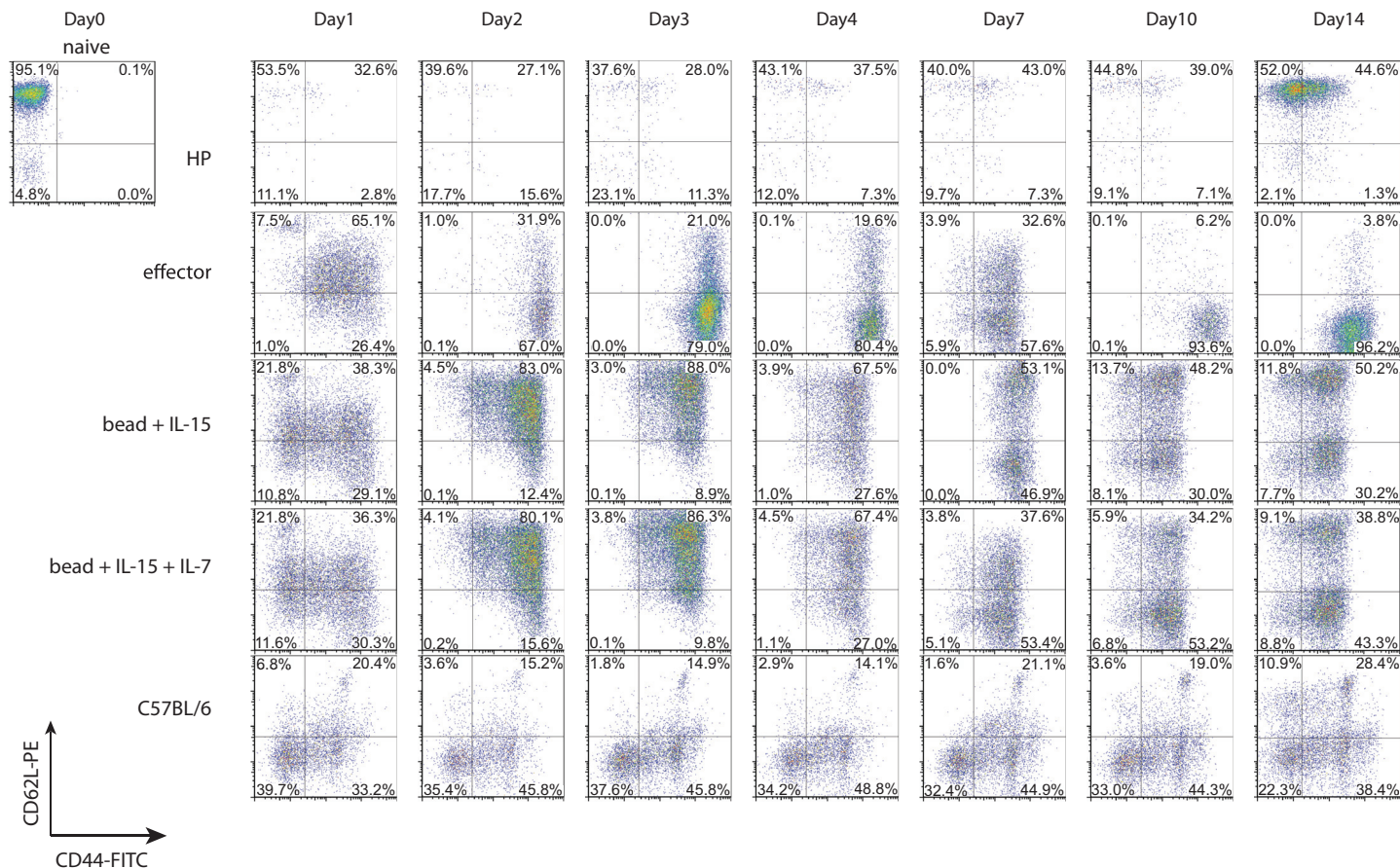
Sponceram discs in 24 well plate	Sponceram magnification

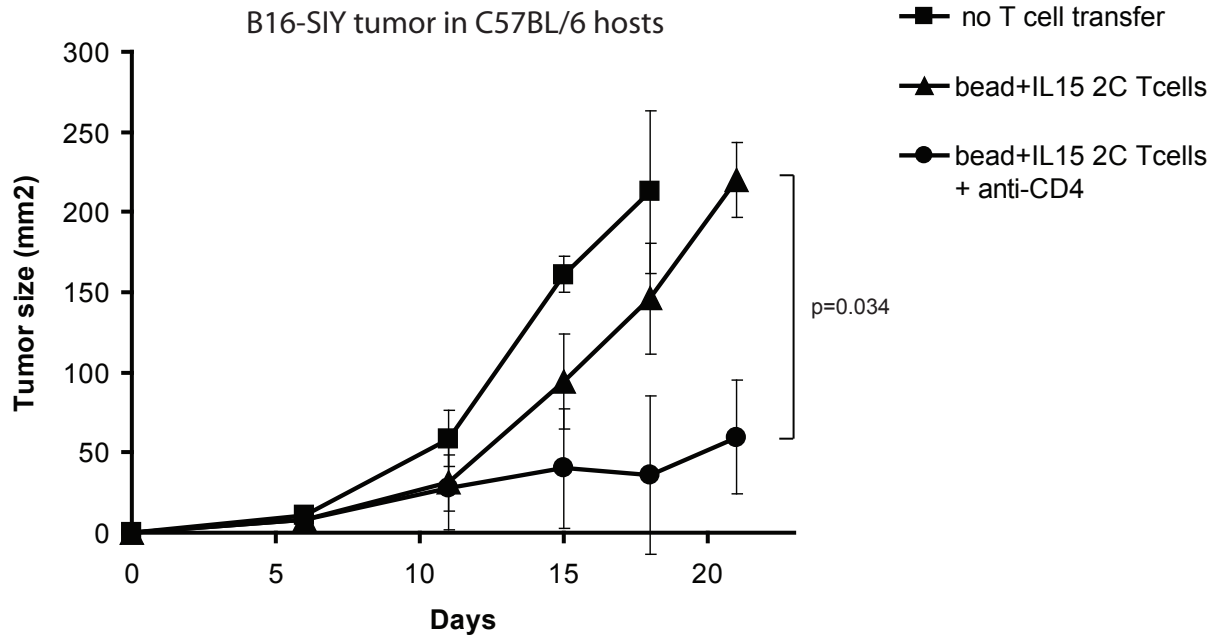**Supplementary Figure 2:** Three-dimensional culture system. Collagen-coated Sponceram® discs were loaded with FRCs (day -2) or DCs (day -1) before adding naïve CFSE-labeled 2C T cells. Represented are the discs in culture medium. A microscopical picture of the structure provided by the company is shown in the magnification.

Supplementary Figure 3: Kinetic analysis of 2C T cell phenotypes during HP and in vitro stimulations. Flow cytometry analysis of CD62L and CD44 is shown for CD8+, 1B2+ lymphoid cells at the indicated days. Day 0 shows naïve T cells. HP represents analysis from the blood of Rag2-/- mice that received 3-5x106 naïve 2C T cells on day 0. The effector group shows naïve T cells in vitro stimulated with P815.B7.1 (at a ratio 1:5). The bead groups include T cells stimulated in vitro with a 3 times excess of anti-CD3/CD28 coated beads in the presence of 200 ng/ml IL-15, 400 ng/ml IL-15RFcIg in combination with 50 n/ml IL-7 when indicated. Aliquots of cryopreserved C57BL/6 splenocytes were used as a control for performing the surface staining on various days.

Supplementary Figure 4: Tumor growth control in wild type C57BL/6 is mediated by in vitro generated memory-like T cells in synergism with CD4 T cell depletion. On day 0, C57BL/6 mice were inoculated s.c. with 5×10^5 B16-SIY tumor cells (stably gene modified to express the SIY peptide presented in H2-Kb which is also recognized by the 2C TCR). On day 1, 1×10^6 bead + IL-15 stimulated 2C T cells were transfered i.v.. Where indicated, mice recived 100ug anti-CD4 depleting antibody i.v. on days 0, 3 , 7 and 10. Results are shown as mean +/- SEM. Differences between the indicated groups are significant (P=0.034) as calculated by Wilcoxon rank sum test.