### Suppl. Table S1. Antibodies for flow cytometry

| target protein | supplier           | clone       | isotype       | fluorochrome |
|----------------|--------------------|-------------|---------------|--------------|
| BTLA (CD272)  | BioLegend          | 6A6         | armenian hamster IgG | PE           |
| CCR7 (CD197)  | Thermo Fisher      | 4B12        | IgG2ak        | APC          |
| CCR9 (CD199)  | Thermo Fisher      | CW-1.2      | IgG2ak        | APC          |
| CD11b          | Thermo Fisher      | M1/70       | IgG2bk        | APC          |
| CD122          | Thermo Fisher      | TM-beta1    | IgG2bk        | eFluor 450   |
| CD127          | Thermo Fisher      | A7R34       | IgG2ak        | APC          |
| CD160          | BioLegend          | 7H1         | IgG2ak        | APC          |
| CD25           | BD Pharmigen       | PC61        | IgG2aκ        | Pe-Cyanine 7 |
|                | BD Pharmigen       | PC61        | IgG2aκ        | PE           |
| CD3ε           | Thermo Fisher      | 145-2C11    | IgG2bk        | Pe-Cyanine 7 |
| CD4            | Thermo Fisher      | GK1.5       | IgG2bk        | APC-eFluor 780 |
| CD44           | Thermo Fisher      | IM7         | IgG2bk        | Pe-Cyanine 7 |
| CD45.1         | BD Pharmigen       | A20         | IgG2aκ        | v450         |
| CD62L          | BD Pharmigen       | MEL-14      | IgG2aκ        | FITC         |
| CD69           | BD Pharmigen       | H1.2F3      | armenian hamster IgG | FITC         |
| CD8a           | Thermo Fisher      | 53.6-7      | IgG2ak        | eFluor 450   |
|                | Thermo Fisher      | 53.6-7      | IgG2ak        | APC          |
| CTLA-4 (CD152) | BioLegend          | UC10-4B9    | armenian hamster IgG | APC         |
| CXCR3 (CD183)  | BioLegend          | CXCR3-173   | armenian hamster IgG | APC         |
| FOXP3          | Thermo Fisher      | FJK-16s     | IgG2ak        | APC          |
| Gr-1           | Thermo Fisher      | RB6-8C5     | IgG2ak        | eFluor 450   |
| H-2K<sup>b</sup> | Thermo Fisher     | AF-6-88.5.5.3 | IgG2aκ        | APC          |
| H-2K<sup>d</sup> | Thermo Fisher     | SF1-1.1.1   | IgG2aκ        | eFluor 450   |
| Lag-3 (CD223)  | Thermo Fisher      | eBioC9B7W   | IgG1κ         | FITC         |
| LFA-1          | Thermo Fisher      | 2D7         | IgG2ak        | PE           |
| LPAM-1         | Thermo Fisher      | DATK-32     | IgG2ak        | PE           |
| Ly-6C          | Thermo Fisher      | HK.1.4      | IgG2ak        | APC-eFluor 780 |
| Ly-6G          | BD Pharmigen       | 1A8         | IgG2ak        | v450         |
| PD-1           | Thermo Fisher      | RMP1-30     | armenian hamster IgG | PE          |
| TIGIT          | BioLegend          | 1G9         | IgG1κ         | PE           |
| Tim-3          | BioLegend          | B8.2C12     | IgG1κ         | APC          |
| target               | sequence (5'→3')                                                                 |
|---------------------|---------------------------------------------------------------------------------|
| AIP forward         | GCTCCGTATATAGATGACAGC                                                           |
| AIP reverse         | ATCTCGATGTGGAAGATGAG                                                            |
| arginase 1 forward  | TCTTTCAAAATTGTGAAGAACCCACCGTC                                                  |
| arginase 1 reverse  | AGAATCCTGGTACATCGTGAAGACTTCTT                                                  |
| CD95L forward       | TTAATGCGGCCACTCTCT                                                            |
| CD95L reverse       | ACTCGTGGAGTTCCAACACC                                                          |
| COX2 forward        | GGCGCAGTTATGTGIACTG                                                            |
| COX2 reverse        | CAAGACAGATACATACAGGGA                                                         |
| GATA3 forward       | AGGATGCTCTGGTCTCTCTT                                                          |
| GATA3 reverse       | GAGATGCTAGCGGACTGACTG                                                          |
| GzmB forward        | CATGTAAGGTAGGAGTGGG                                                          |
| GzmB reverse        | CTTCTCTGACTGACTGACTG                                                          |
| HO1 forward         | TCAAGGCGGATGAGTCAAACTTC                                                        |
| HO1 reverse         | ACAACCAGTTGAGTGGAGCT                                                          |
| IDO forward         | GGATGCTGACTGGTACG                                                            |
| IDO reverse         | TTCTTGCCAGGCTGCTG                                                            |
| IFN-γ forward       | TGCAAGGCCAGATTTTCTCTCTTCAAGCTC                                                  |
| IFN-γ reverse       | GGTGTTGAGCTCAACTGGCAGACTG                                                      |
| IL-10 forward       | CACTGCTATGCTGGCTACTG                                                        |
| IL-10 reverse       | TGGCAACCCACATGACAAAAGCTC                                                        |
| IL-13 forward       | CACACTCCAAGACTGCTG                                                            |
| IL-13 reverse       | TGGTGCTCTCTCTGAGGACTG                                                          |
| IL-2 forward        | GTCAACATCCAGAAGATGCC                                                          |
| IL-2 reverse        | AACCTGAAGACTGGGACAGACTG                                                      |
| IL-4 forward        | GGTTGGCTCTGTGCTG                                                            |
| IL-4 reverse        | TCTCGAATGCTGCCAGGGA                                                        |
| IL-5 forward        | CCCAGGACAGTGGGTAGGCT                                                         |
| IL-5 reverse        | GAATGAGACGGATAGGGCC                                                           |
| perforin forward    | TGGAGAGTTTTGGGACCAGGAG                                                         |
| perforin reverse    | TAGGAAATTGTGGAGCTG                                                            |
| STAT4 forward       | TTGAAGCAGAATTGTGAGGA                                                          |
| STAT4 reverse       | CTCTCTGTGAAGCTGAGGACG                                                         |
| STAT6 forward       | CTGCAGGCTGTTCTCTGCTG                                                          |
| STAT6 reverse       | TGGCCGGTCTCAGCTTAACCTA                                                        |
| T-bet forward       | ATCTGTAATGCTGCTG                                                            |
| T-bet reverse       | TCAACAGCAGACAGAG                                                              |
| TGF-β forward       | TCTACAGAAGAATATAGCAACAATTCT                                                  |
| TGF-β reverse       | CTGAATCAGAAGGCTGTTCCAGCT                                                    |
| TNF-α forward       | CCAGACACCTACACACTGAGCTTCA TCTTCT                                             |
| TNF-α reverse       | CTAGGTTGTTGCTTTGAGATCCATGCGGT                                                  |
| TRAIL forward       | TGGAGTCCCAGAATACTC                                                            |
| TRAIL reverse       | TCACCAACAGAGATGAAGCAG                                                          |
Suppl. Table S3: Differentially expressed genes in T cells upon rapamycin treatment compared to PBS treatment.

| target gene | name                                           | fold change | FDR (false discovery rate) | parametric p-value |
|-------------|-------------------------------------------------|-------------|----------------------------|-------------------|
| Gzmc        | granzyme C                                      | 2.63        | 0.759                      | 4.03E-02          |
| Nrn1        | neuritin 1                                      | 2.38        | 0.759                      | 4.50E-02          |
| Scin        | scinderin                                       | 2.27        | 0.404                      | 3.76E-03          |
| Ermn        | ermin, ERM-like protein                         | 2.27        | 0.720                      | 1.62E-02          |
| Delk1       | doublecortin-like kinase 1                      | 1.89        | 0.759                      | 4.24E-02          |
| Filip1       | filamin A interacting protein 1                 | 1.85        | 0.759                      | 3.00E-02          |
| Dthd1       | death domain containing 1                        | 1.69        | 0.759                      | 3.72E-02          |
| Spock2      | sparc/osteonectin, cwcv and kazal-like domains  proteoglycan 2 | 0.56 | 0.720 | 1.68E-02 |
| Acpp        | acid phosphatase, prostate                       | 0.51        | 0.753                      | 2.10E-02          |
| Glp1r       | glucagon-like peptide 1 receptor                 | 0.42        | 0.0544                     | 2.53E-04          |
| Spic        | Spi-C transcription factor                      | 0.39        | 0.499                      | 6.96E-03          |

(Spi-1/PU.1 related)
**Suppl. Figure 1:** Lethally irradiated B6D2F1 recipient mice (H-2<sup>bxd</sup>) were reconstituted with T cell depleted bone marrow from B6 mice (H-2<sup>b</sup>) together with B6-derived spleen cells. Rapamycin (RAPA) or PBS i.p. injections were administered every second day until day 10 post-transplantation. (A) Total MDSCs in spleen and liver were defined by CD11b and Gr-1 expression. (B) Spleen and livers were analyzed for Tregs by analyzing CD4<sup>+</sup> CD25<sup>+</sup> cells for FoxP3 expression. (C) Granulocytic (CD11b<sup>+</sup>Ly-G<sub>high</sub>Ly-6C<sub>low</sub>) and monocytic MDSC subsets (CD11b<sup>+</sup>Ly-6G<sub>neg</sub>Ly-6C<sub>high</sub>) were defined in spleen and liver by analyzing CD11b<sup>+</sup> cells for their expression of Ly-6C and Ly-6G. (A) FACS diagrams show one representative mouse out of 12 mice analyzed/group. (B) FACS diagrams show one representative mouse out of 5-6 mice analyzed/group. (C) FACS diagrams show one representative mouse out of 6 mice analyzed/group.
**Suppl. Figure 2:** Lethally irradiated B6D2F1 recipient mice (H-2<sup>bx</sup>) were reconstituted with T cell depleted bone marrow from B6 mice (H-2<sup>b</sup>) together with B6-derived spleen cells. Rapamycin (RAPA) or PBS i.p. injections were administered every second day. 10 days after transplantation, splenic CD4<sup>+</sup> and CD8<sup>+</sup> T cells were stained for different activation, homing and adhesion markers. MFI of each marker was defined. Data represent the mean value ± SD of 3 mice/group. Mann-Whitney test. n.s.=not significant.
Suppl. Figure 3: Lethally irradiated B6D2F1 recipient mice (H-2^{bx}d) were reconstituted with T cell depleted bone marrow from B6 mice (H-2^{b}) together with B6-derived spleen cells. Rapamycin (RAPA) or PBS i.p. injections were administered until day 5 post-transplantation. 1 h after the last application, splenic T cells were stained for CD3 and phospho-S6 ribosomal protein expression was determined on CD3^{+} T cells. (A) FACS diagrams of one representative mouse/group out of 3 analyzed mice/group are shown. (B) Data represent the mean value ± SD of 3 mice/group. Mann-Whitney test. n.s.=not significant.