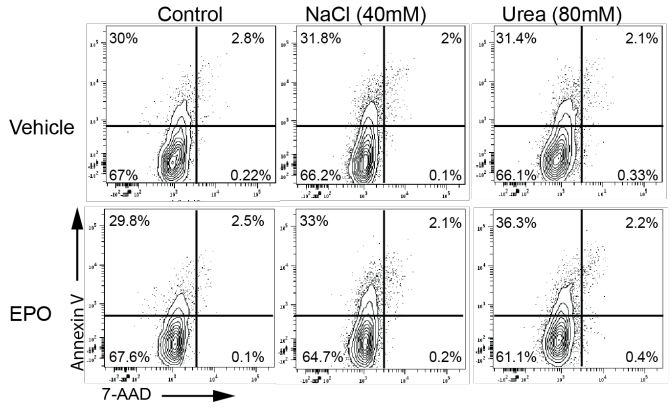

Figure S1. EPO does not affect human T_H17 survival. Enriched human naïve $CD4^+$ T cells were cultured in the presence of T_H17 polarizing conditions (see methods) in control media or in media with 20-40 mM NaCl or 40-80 mM urea added in the presence of EPO (1,000 IU/ml) or vehicle control for 5 days. Representative flow plots from 5 experiments from 7 different donors. Quantification of these data is provided in **Figure 1E**.

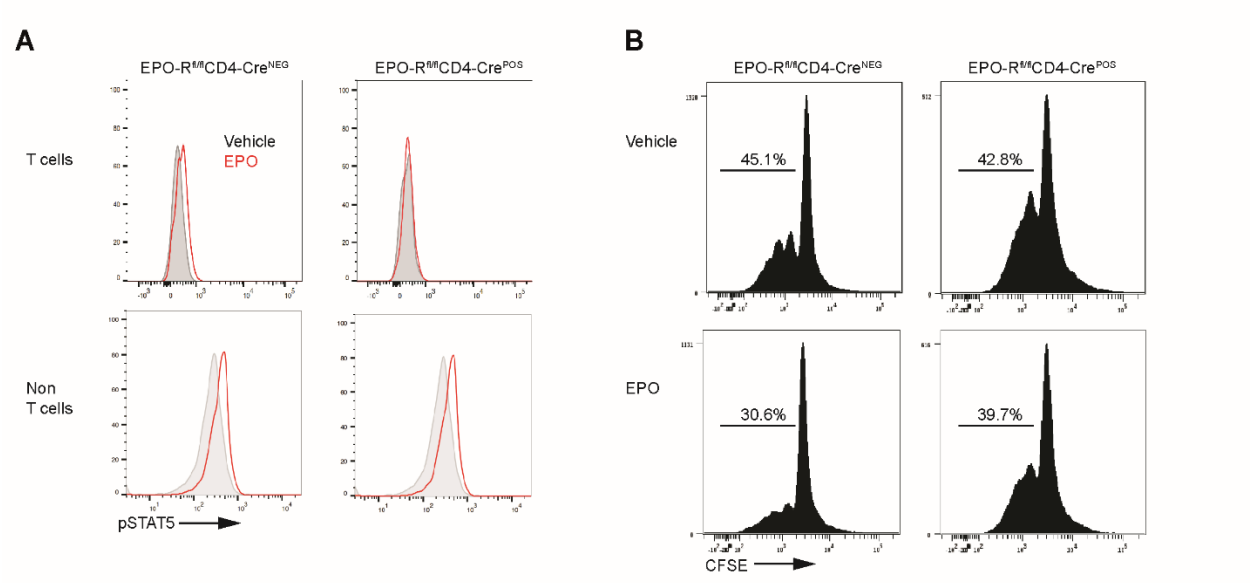

Figure S2. Lack of functional in T cells of EPO-R$^{fl/fl}$CD4-Cre^{POS} mice. (**A**) STAT5 phosphorylation in EPO-R$^{fl/fl}$CD4-Cre^{POS} and Cre^{NEG} T cells and non T cells (representative of 3 mice per group) after 15 minute stimulation with EPO (2,000 IU/ml) or vehicle. (**B**) CFSE dilution of EPO-R$^{fl/fl}$CD4-Cre^{POS} T cells activated with anti-CD3/anti-CD28 mAb and treated with EPO (1,500 IU/ml) or vehicle for 3 days (representative of 5 mice per group).

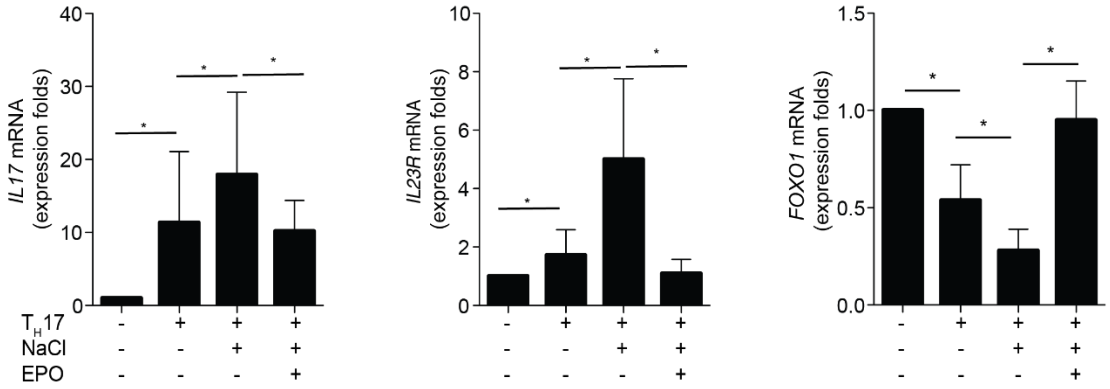

Figure S3. Effect of EPO on *IL17*, *IL23R*, and *FOXO1* mRNA in naïve CD4$^+$ T cells cultured in T_H17 polarizing conditions. Enriched human naïve CD4$^+$ T cells were cultured for 48 hours in T_H0 or T_H17 polarizing conditions with or without NaCl or EPO (1,000 IU/ml) (n = 3 donors). *P < 0.05, two-way ANOVA with Tukey test.

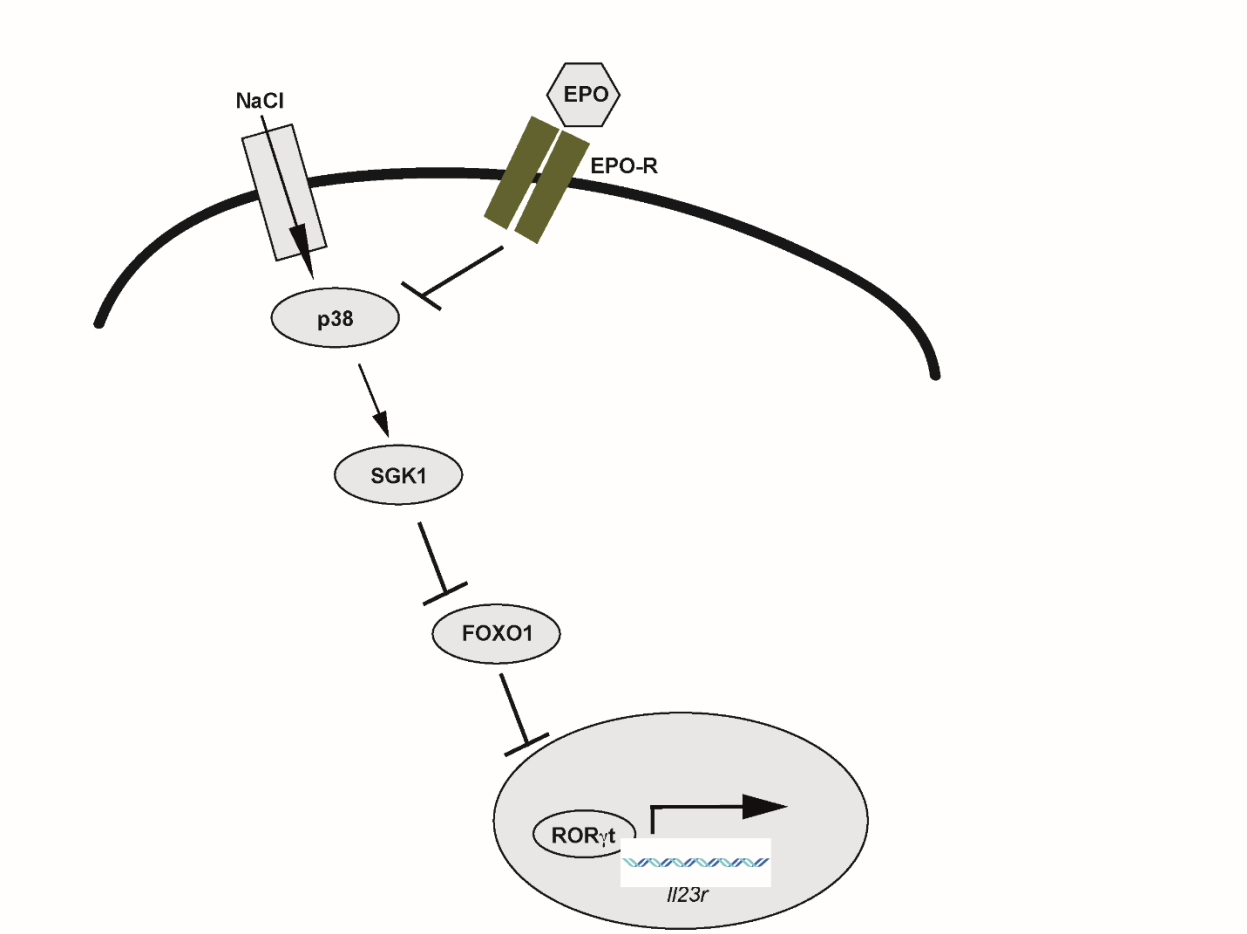

Figure S4. Schematic of EPO-induced inhibition of p38 and SGK1. In the presence of EPO, FOXO1 inhibitory effects on RORγt are unleashed, leading to reduced IL-23 receptor (IL-23R) expression and IL-17 production.

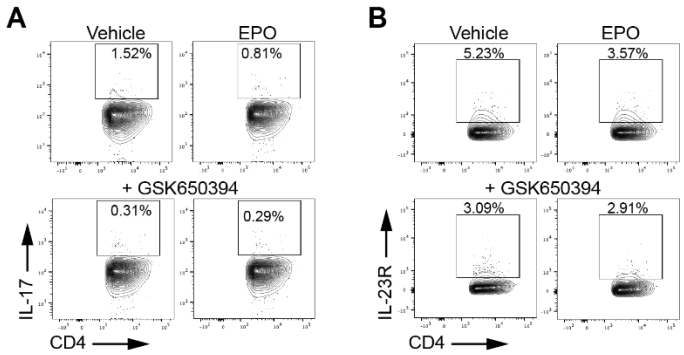

Figure S5. Effect of EPO on IL-17 and IL-23R expression in naïve CD4$^+$ T cells cultured in T_H17 polarizing conditions in the presence of SGK1 inhibitor. Enriched human naïve CD4$^+$ T cells were cultured in T_H17 polarizing conditions with or without EPO (1,000 IU/ml) and SGK1 inhibitor GSK650394 (10nM) (n = 5 donors). (**A** and **B**) Representative plots of IL-17 and IL-23R expression after 5 days of culture (data are quantified in **Figure 2L-M**).

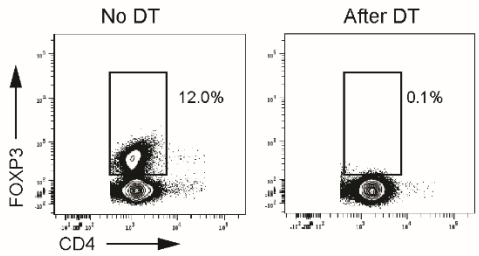

Figure S6. *Diphteria* toxin depletes T_{REG} in *Foxp3*^{DTR} mice. $CD4^+FOXP3^+$ T cells in the spleen of *Foxp3*^{DTR} mice without or after treatment with *Diphteria* toxin (DT) for 1 week (representative of 3 mice per group).

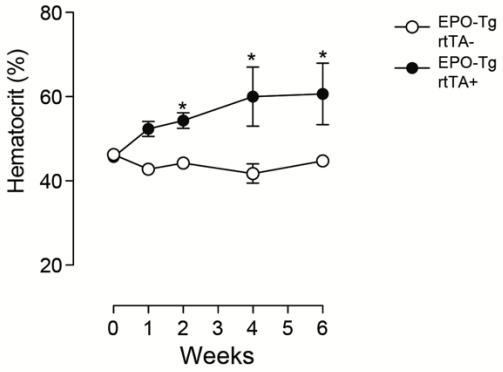

Figure S7. Hematocrit levels in EPO-Tg rtTA$^+$ mice. Hematocrit levels in EPO-Tg rtTA$^+$ and control EPO-Tg rtTA$^-$ mice over a 6-week period of DOX feeding. * $P < 0.05$ vs. rtTA$^-$ at the same time-point (n = 5 per group), two-way ANOVA with Tukey's multiple comparison test.

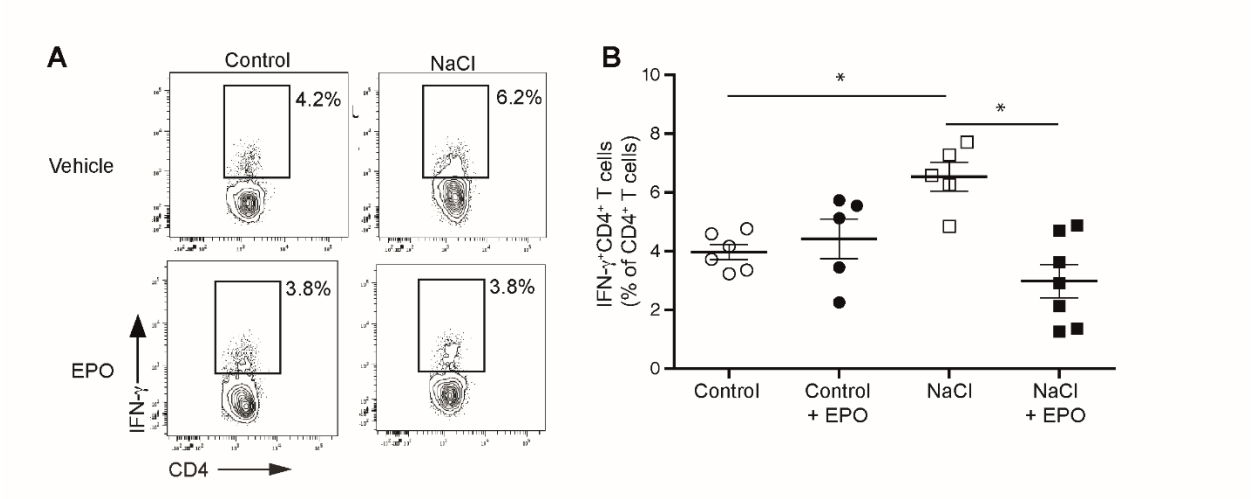

Figure S8. Effect of EPO treatment on T_H1 cells from aristolochic acid treated mice. (**A**) Representative plots and (**B**) data quantification of $CD4^+IFN\text{-}\gamma^+$ T cells at 6 weeks after aristolochic acid treatment in B6 male mice receiving saline or EPO and fed on normal versus high-NaCl diet. *P < 0.05, two-way ANOVA with Tukey test.

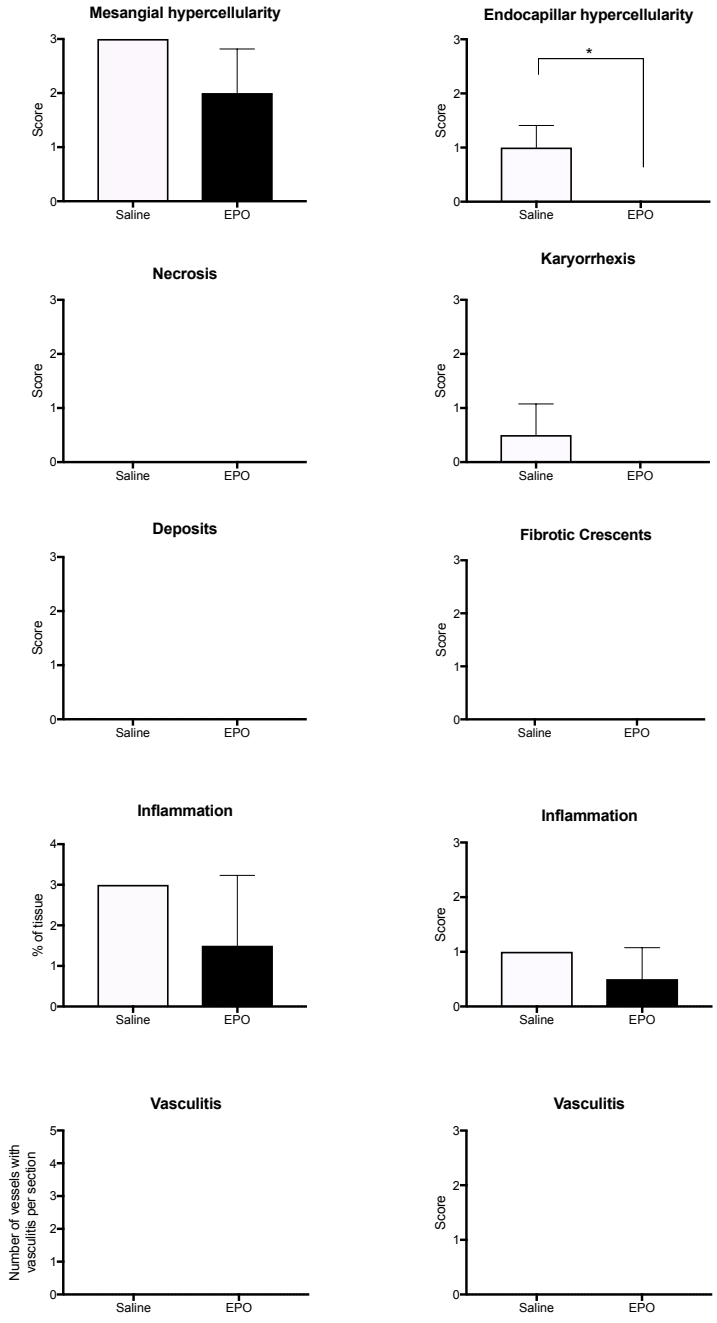

Figure S9. Effect of EPO treatment on histological scores in pristane treated mice. Histological scores of mice shown in **Figure 8**. B6 male mice (*n* = 3-4 per group) were treated with pristane at the age of 2 months and either EPO or vehicle control for 2 additional months and then sacrificed. Each parameter was scored from 0 to 3 depending on the percentage of glomeruli affected by the various lesions (such that 0=0, <25% = 1, 25-50% = 2; >50% = 3). Inflammation was quantified both as the percentage of cortical parenchyma with interstitial inflammation and as a score (0-3). Similarly, vasculitis has been quantified as the number of arteries with arteritis per tissue section because and as a score (0-3). All kidney sections were quantified by a pathologist blinded to the group assignment. *P < 0.05, unpaired t-test.

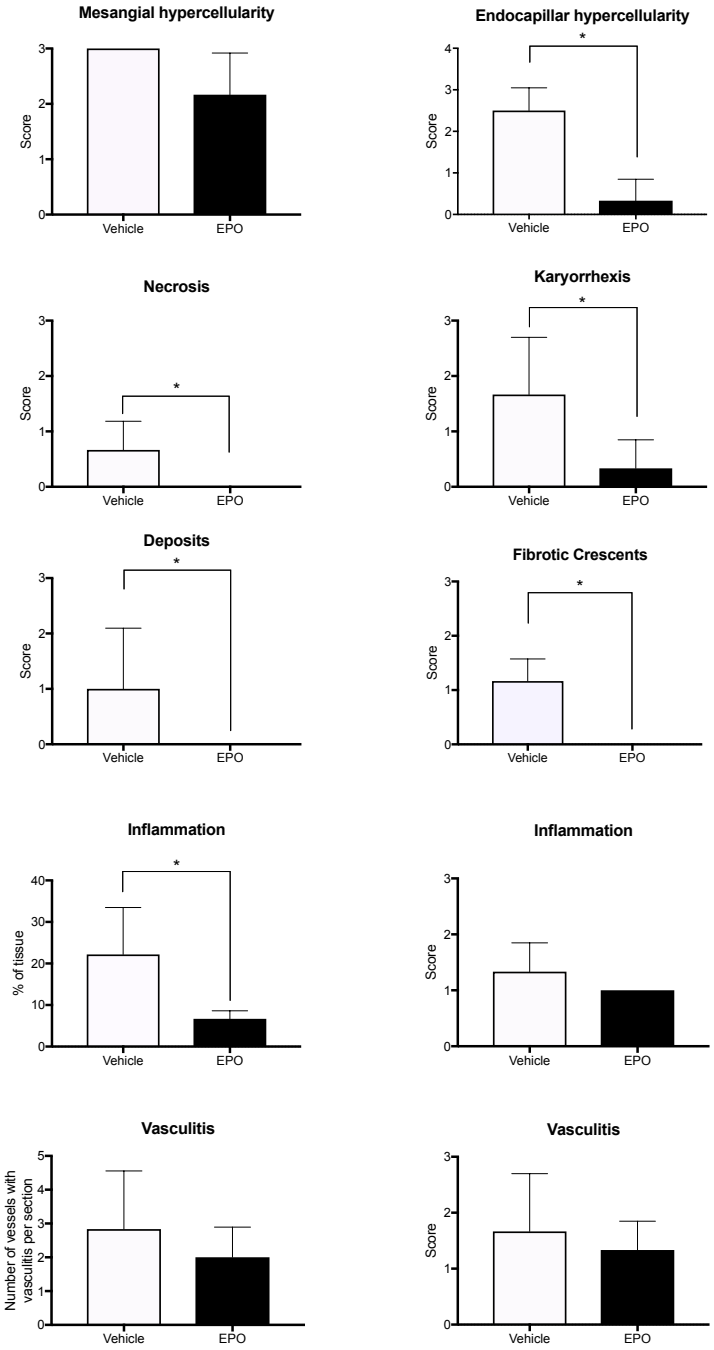

Figure S10. Effect of EPO treatment on histological scores in MRL-*lpr* mice. Histological scores of mice shown in **Figure 9**. Four-month old MRL-*lpr* mice were treated with saline or rEPO from the age of 2 months (n = 6-9 per group). Each parameter was scored from 0 to 3 depending on the percentage of glomeruli affected by the various lesions (such that 0=0, <25% = 1, 25-50% = 2; >50% = 3). Inflammation was quantified both as the percentage of cortical parenchyma with interstitial inflammation and as a score (0-3). Similarly, vasculitis has been quantified as the number of arteries with arteritis per tissue section because and as a score (0-3). All kidney sections were quantified by a pathologist blinded to the group assignment. *P < 0.05, unpaired t-test

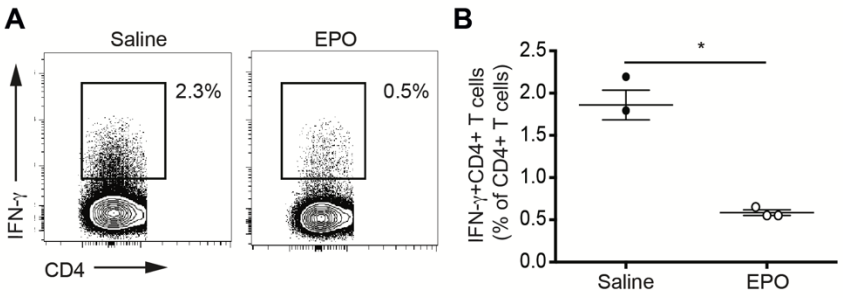

Figure S11. Effect of EPO treatment on T_H1 cells in MRL-*lpr* mice. (**A**) Representative plots and (**B**) data quantification of T_H1 cells in female MRL-*lpr* mice treated with saline or EPO from month 2 to month 4 of age. *P < 0.05, unpaired t-test.