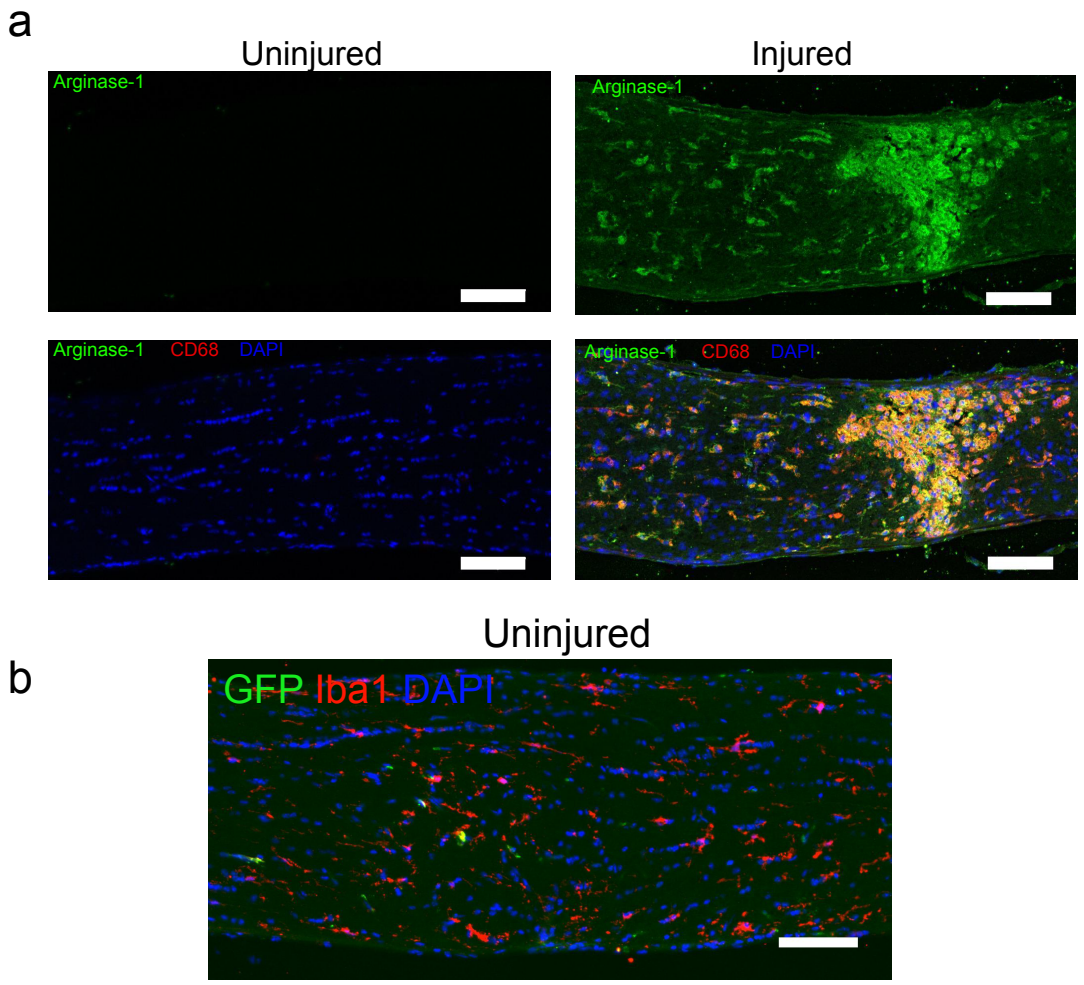
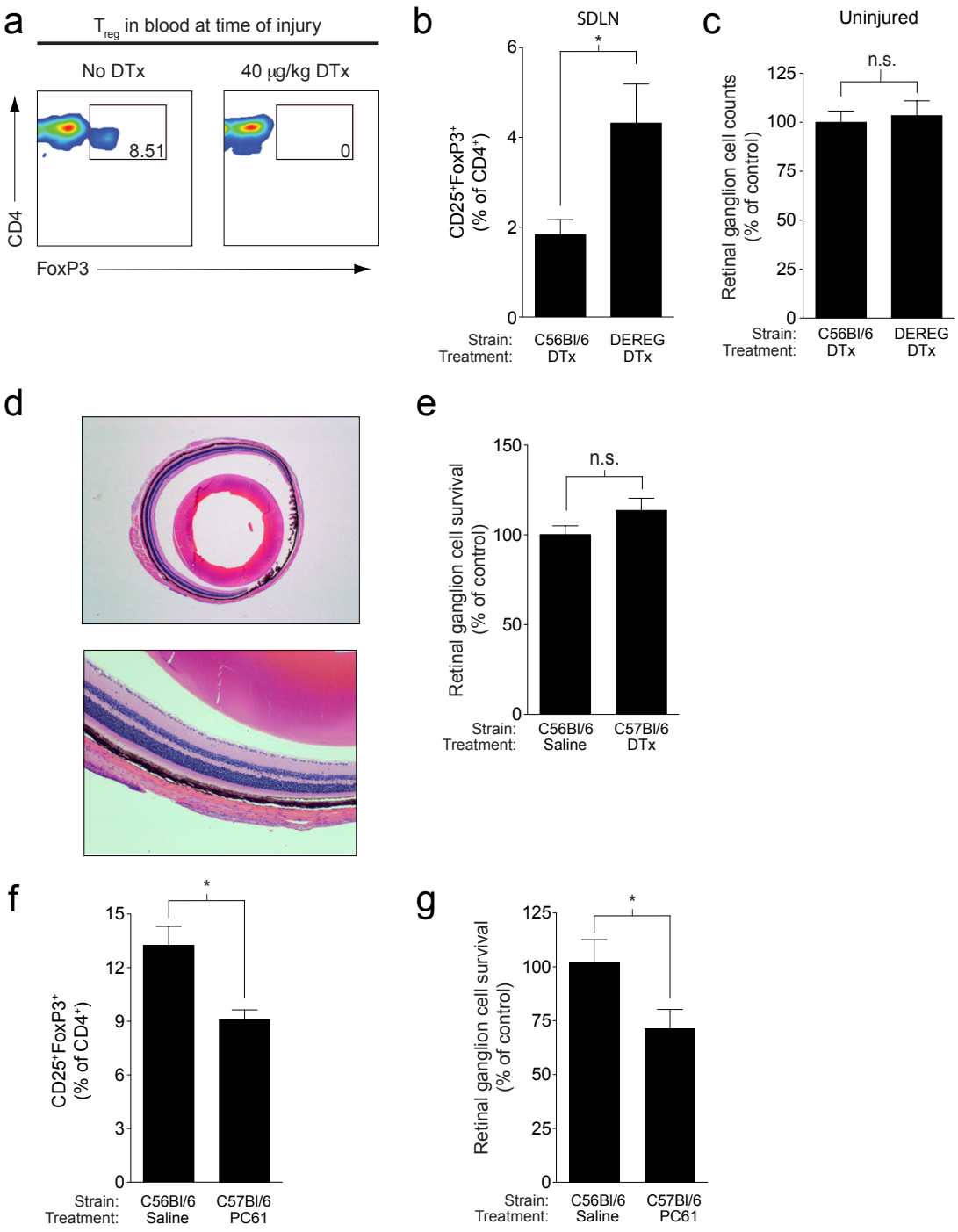
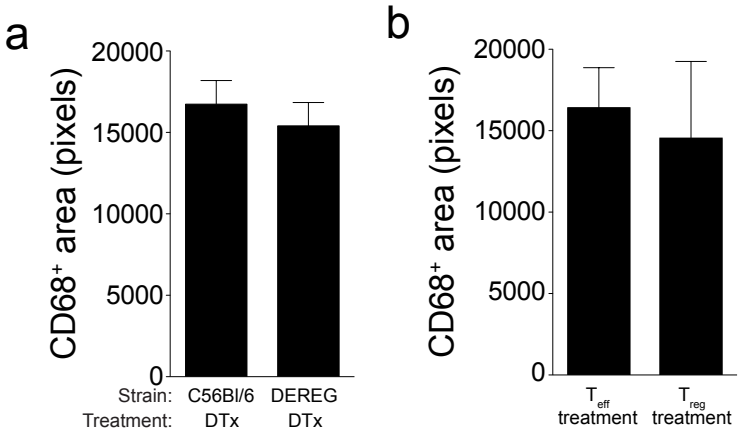


Supplementary Figure 1: *Uninjured optic nerves have few GFP$^+$Iba1$^+$ microglia and little arginase-1, but arginase-1 staining is greatly increased after injury.* (**a**) Immunohistochemical staining of arginase-1 (green) and CD68 (red) in the uninjured and injured optic nerve (scale bar = 100 μm). (**b**) Immunohistochemical staining of an optic nerve in a C57Bl/6 mouse that was lethally irradiated and transplanted with GFP bone marrow showing sparse transplanted GFP$^+$ cells (green) among plentiful resident Iba1$^+$ microglia (red). Image is from uninjured nerve 6 weeks post-transplantation (scale bar = 100 μm).

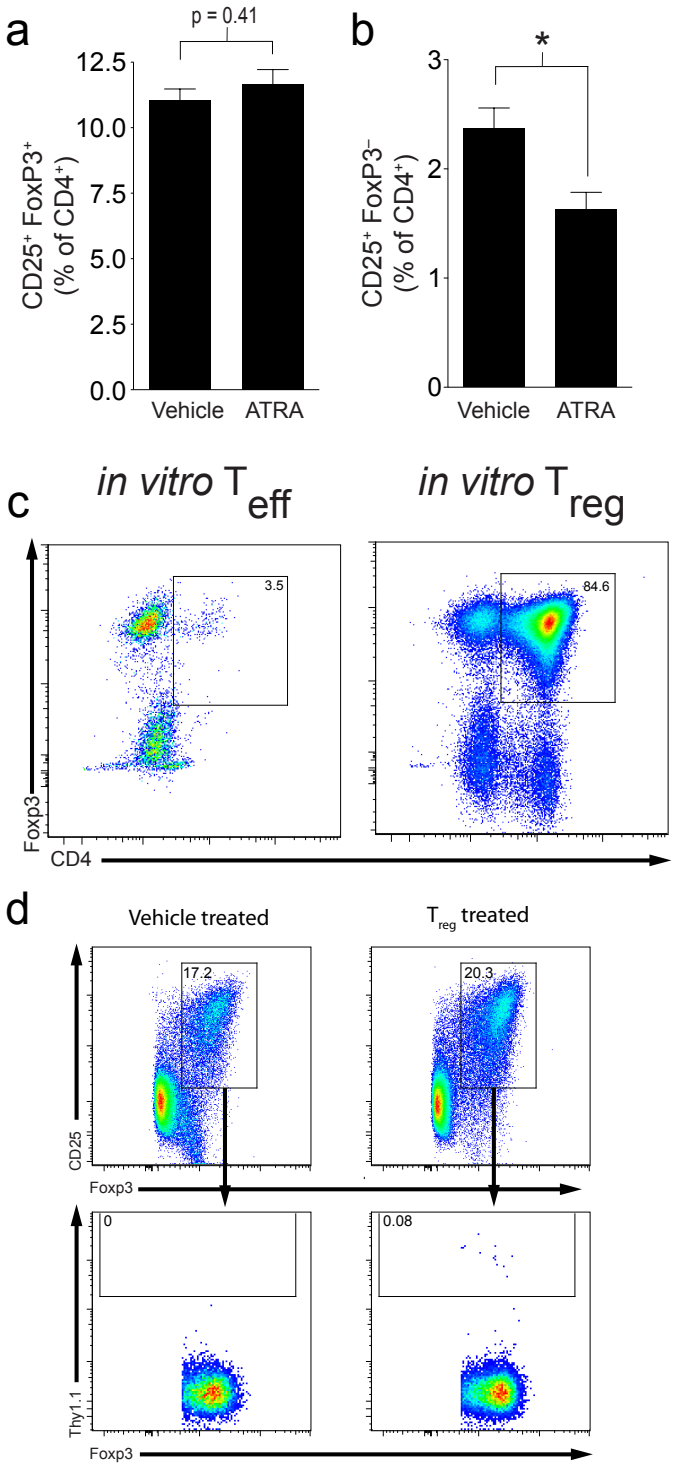


Supplementary Figure 2: *Characterization of 40 µg/kg DTx. treatment.* (**a**) Flow cytometry on the day of injury of CD4 and FoxP3 in peripheral blood of DEREG mice treated with vehicle or 40 µg/kg DTx. (**b**) Flow cytometry in the skin-draining lymph nodes of DEREG or wild type littermates treated with DTx two days before injury and on

the day of injury, showing percent of $CD25^{+}Foxp3^{-}$ T_{eff} cells, graphed as a percentage of $TCR\beta^{+}CD4^{+}$ cells (n = 12 wild type and 9 DEREG treated mice; *, $p < 0.05$, Student's t-test; representative of three experiments). (**c**) Representative images of H&E staining in eyes of DEREG mice treated with 40 μg/kg DTx. Abnormal architecture or immune cell infiltration was found in 0/17 C57Bl/6 and 0/21 B6AF1 mice. (**d**) Retinal ganglion cell counts from DEREG and wild type mice injected with 40 μg/kg DTx two days before injury and on the day of injury (n = 19 wild type and 25 DEREG; Student's t-test; representative of three experiments). (**e**) No difference was observed in RGC survival of C57Bl/6 mice treated with 40 μg/kg DTx or saline 2 days before injury and on the day of injury (n = 10 mice per group; Student's t-test; representative of 2 experiments). (**f**) Flow cytometry in the skin-draining lymph nodes of wild type mice treated with 250μg anti-CD25 or IgG 8 days before injury, showing percent of $CD25^{+}Foxp3^{+}$ T_{reg} cells, graphed as a percentage of $TCR\beta^{+}CD4^{+}$ cells (n = 4 per group; *, $p < 0.05$, Student's t-test; representative of three experiments). (**g**) RGC survival of C57Bl/6 mice treated with 250 μg anti-CD25 or IgG 8 days before injury (n = 6 IgG and 7 anti-CD25; *, $p < 0.05$, Student's t-test; representative of 2 experiments).



Supplementary Figure 3: *There is no change in CD68$^+$ area after injury with T_{reg} manipulation.* (**a**) Quantification of CD68$^+$ area in immunohistochemical staining of injured optic nerves of C57Bl/6 treated with DTx or DEREG mice treated with DTx (n = 3 C57Bl/6 treated with DTx and 9 DEREG treated with DTx Student's t-test; representative of two experiments). (**b**) Quantification of CD68$^+$ area in immunohistochemical staining of injured optic nerves of C57Bl/6 mice injected with $1x10^6$ T_{eff} or T_{reg} cells 2 days before injury and on the day of injury (n = 9 T_{eff} injected and 6 T_{reg} injected; Student's t-test; representative of two experiments).



Supplementary Figure 4: *ATRA treatment leads to decreased T_{eff} proportion in the skin-draining lymph nodes and to increased T_{reg} proportion in vitro.* (**a, b**) Flow cytometry in the skin-draining lymph nodes of wild type treated with vehicle or ATRA showing percent of $CD25^+Foxp3^+$ T_{reg} cells (**a**) and of $CD25^+Foxp3^-$ T_{eff} cells (**b**), graphed as a percentage of $TCR\beta^+CD4^+$ cells (n = 7 vehicle treated and n = 9 ATRA treated; *, p <

0.05, Student's t-test; representative of two experiments). (**c**) Representative flow cytometry plots of viable cells in lymph node cultures that have been treated with 10 nM ATRA, 5 ng/mL TGFβ, 250 U/mL IL-2, 1 μg/mL anti-CD3, and 1 μg/mL anti-CD28 (T_{reg}) or only 1 μg/mL anti-CD3, and 1 μg/mL anti-CD28 (T_{eff}) for 5 days. The boxes denote the $CD4^{+}Foxp3^{+}$ T_{reg} population, and numbers represent percent of viable cells that are $CD4^{+}Foxp3^{+}$. (**d**) Representative flow cytometry plots of viable cells in the deep cervical lymph node cultures after injection of 1 X 10^{6} Thy1.1 T_{reg} cells or vehicle. The gates on the top plots denote the $CD4^{+}Foxp3^{+}$ T_{reg} cells, and the gates on the bottom denote the $Thy1.1^{+}$ fraction of T_{reg} cells.