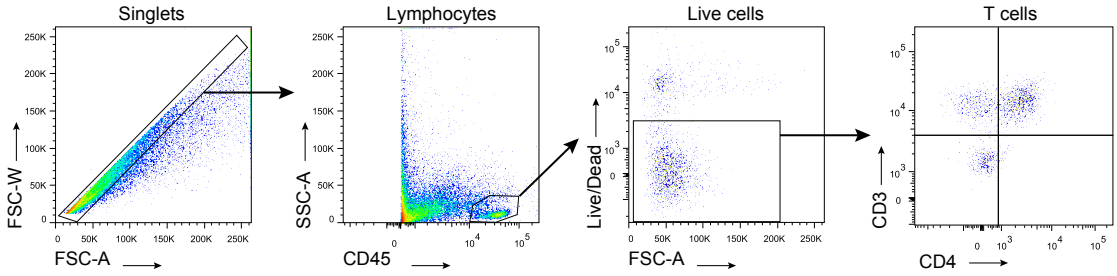
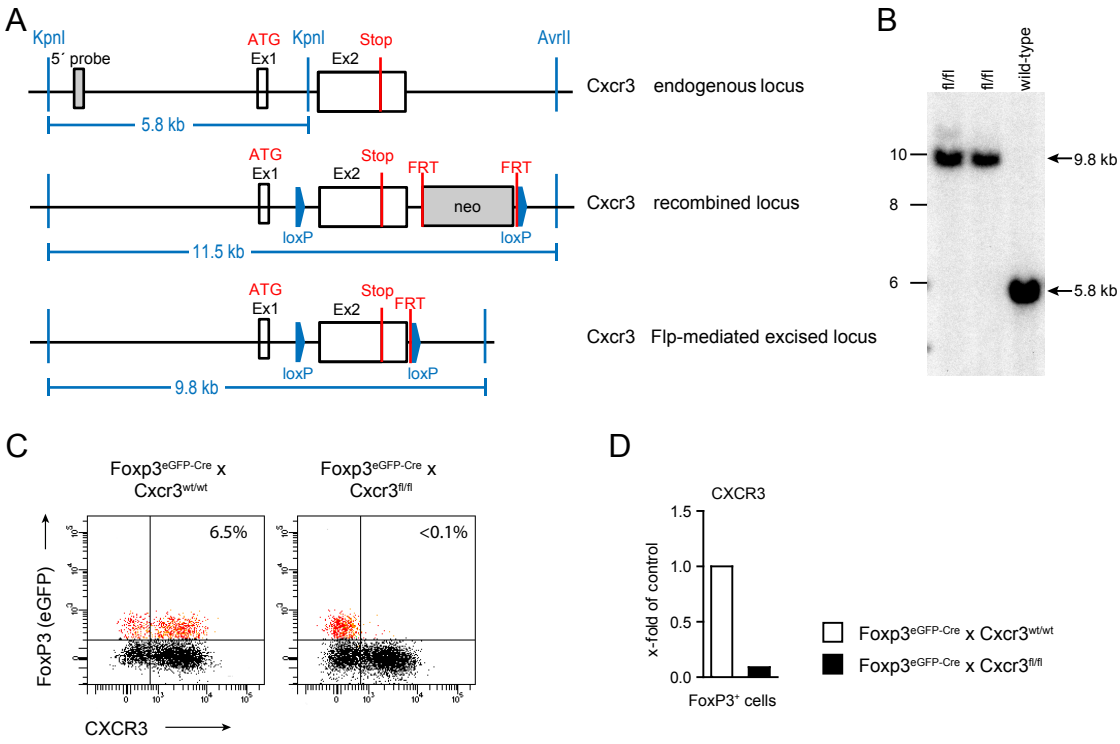


Supplemental Figure 1: Flow cytometric analysis of human renal biopsies

Lymphocytes were identified as singlets, CD45 positive, and live cells (near-infrared cells were excluded). T cells were then identified by CD3 CD4 staining and further analyzed by a panel of antibodies. Single cell suspensions were obtained from human biopsies by enzymatic digestion in RPMI1640 with collagenase D (0.4 mg/mL) and deoxyribonuclease type I (10µg/mL) (Roche Diagnostics, Mannheim, Germany) at 37°C followed by dissociation with gentleMACS (Miltenyi Biotec, Bergisch Gladbach, Germany). Samples were filtered through a 30 µm filter before antibody staining and flow cytometry.

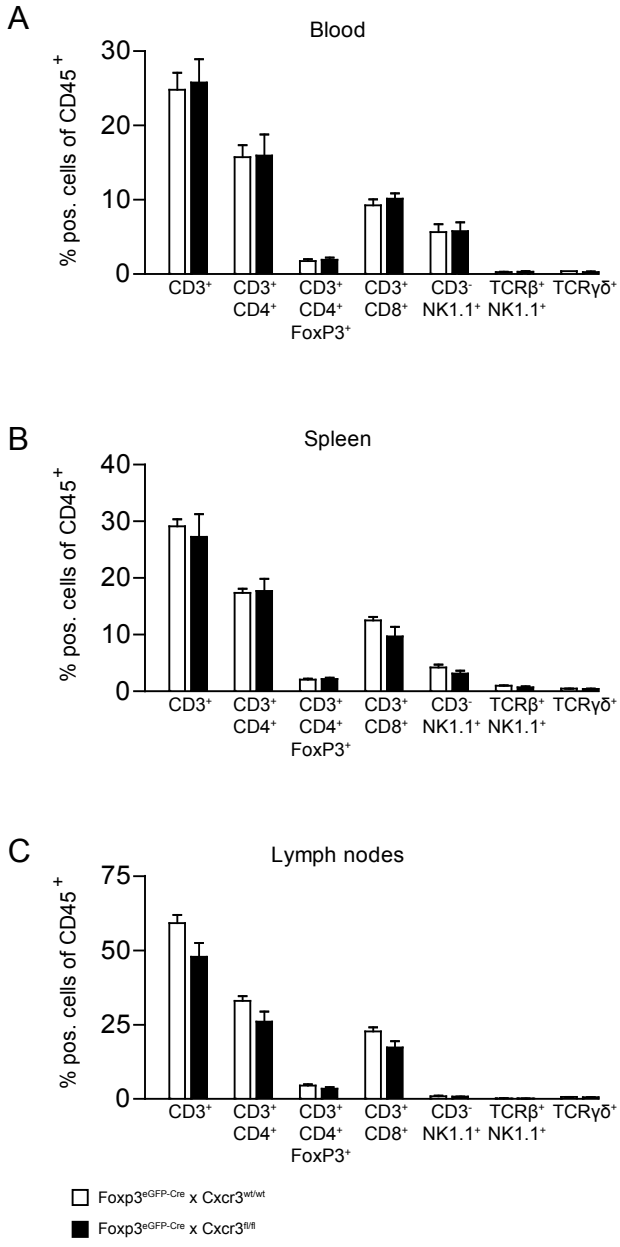
Patients	Age (years)	Sex	ANCA type	ANCA Immuno-fluorescence	PR3/MPO ELISA (U/mL)	Creatinine (mg/dL)	Proteinuria	Immunosuppression prior to biopsy
1	72	f	pANCA	10	MPO 35	3.2	1.0 g/d	None
2	67	m	cANCA	320	NA	on dialysis	1.2 g/d	Steroids
3	81	m	cANCA	320	PR3 183.9	on dialysis	6.6 g/d	Steroids
4	80	m	pANCA	160	MPO 23.6	4.5	1.5 g/d	None
5	56	m	cANCA	320	PR3 106	4.53	NA	Steroids
6	66	f	pANCA	160	MPO 117	2	NA	None
7	66	f	pANCA	160	MPO 121	1.7	3.0 g/d	Steroids
8	45	m	cANCA	160	NA	4.1	5.0 g/d	Steroids
9	67	m	cANCA	1280	NA	1.4	0.4 g/d	None
10	32	m	cANCA	80	PR3 82	3.4	3.0 g/d	Steroids
11	70	m	cANCA	100	PR3 10	2.2	0.2 g/g Creatinine	None
12	48	m	pANCA	320	MPO 7.6	1.7	0.6 g/d	None
13	53	m	cANCA	NA	PR3 >134	2.5	0.1 g/g Creatinine	None
14	36	m	cANCA	10	PR3 12	4.1	2.2 g/g Creatinine	Steroids
15	54	m	pANCA	100	MPO 51	4.2	NA	Steroids
16	65	m	cANCA	1000	PR3 109	on dialysis	NA	Steroids
17	60	m	pANCA	1000	NA	2.5	0.6 g/g Creatinine	None
18	68	f	cANCA	100	PR3 11	3.4	1.2 g/g Creatinine	Steroids
19	41	f	cANCA	NA	PR3 >200	1.7	2.1 g/d	None
20	18	f	cANCA	320	PR3 >200	0.6	0.4 g/d	Steroids
21	70	m	pANCA	NA	MPO 106	3.3	0.9 g/g Creatinine	Steroids
22	72	m	cANCA	100	PR3 47	2.9	2.5 g/d	Steroids
23	64	m	cANCA	NA	NA	7.5	0.3 g/d	NA
24	59	f	cANCA	NA	NA	6.3	NA	NA
25	31	m	cANCA	100	PR3 53	1.9	1.2 g/g Creatinine	Steroids
26	82	m	pANCA	NA	NA	1.3	1 g/d	NA
27	56	m	cANCA	NA	NA	4.2	1.3 g/d	NA
28	72	m	cANCA	100	NA	4.9	0.6 g/g Creatinine	None

Supplemental Figure 2: Baseline characteristics of patients with ANCA-GN at the time of biopsy
ANCA = anti-neutrophil cytoplasmic antibody-associated ; pANCA = perinuclear ANCA; MPO = myeloperoxidase; cANCA = cytoplasmic ANCA; PR3 = proteinase 3; m = male; f = female; NA = not available.



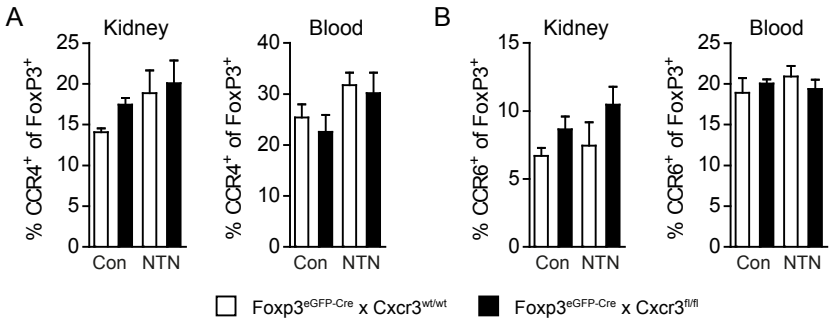
Supplemental Figure 3: Generation of Treg-specific CXCR3 KO mice

(**A**) Schematic representation of Cxcr3 targeting strategy resulting in deletion of exon 2. Rectangles represent Cxcr3 coding sequences, grey rectangles indicate non-coding exon portions, solid line represents chromosome sequence. The initition codon (ATG) and Stop codons are indicated. FRT sites are represented by red lines and loxP sites by blue lines. The size of the flanked Cxcr3 sequence to be deleted is shown. (**B**) Southern blot analysis of DNA isolated from an embryonic stem cell clone with targeted Cxcr3 allele was compared with wild-type DNA. We bred CXCR3flox mice harboring loxP sites flanking the second exon of Cxcr3 gene with Foxp3$^{eGFP\text{-}Cre}$ mice (Rubtsov *et al.*, Immunity 2008). (**C**) Flow cytometric analysis of live gated, CD45$^+$ and CD4$^+$ splenic cells of the indicated genotype showed the absence of CXCR3 specifically in Tregs from Foxp3$^{eGFP\text{-}Cre}$ x Cxcr3$^{fl/fl}$ mice (n=3). (**D**) Representative PCR analysis of CXCR3 expression in FoxP3$^+$ FACS-sorted cells from spleens of Foxp3$^{eGFP\text{-}Cre}$ x Cxcr3$^{wt/wt}$ mice and Foxp3$^{eGFP\text{-}Cre}$ x Cxcr3$^{fl/fl}$. mRNA levels are expressed as x-fold controls. Bars represent means.

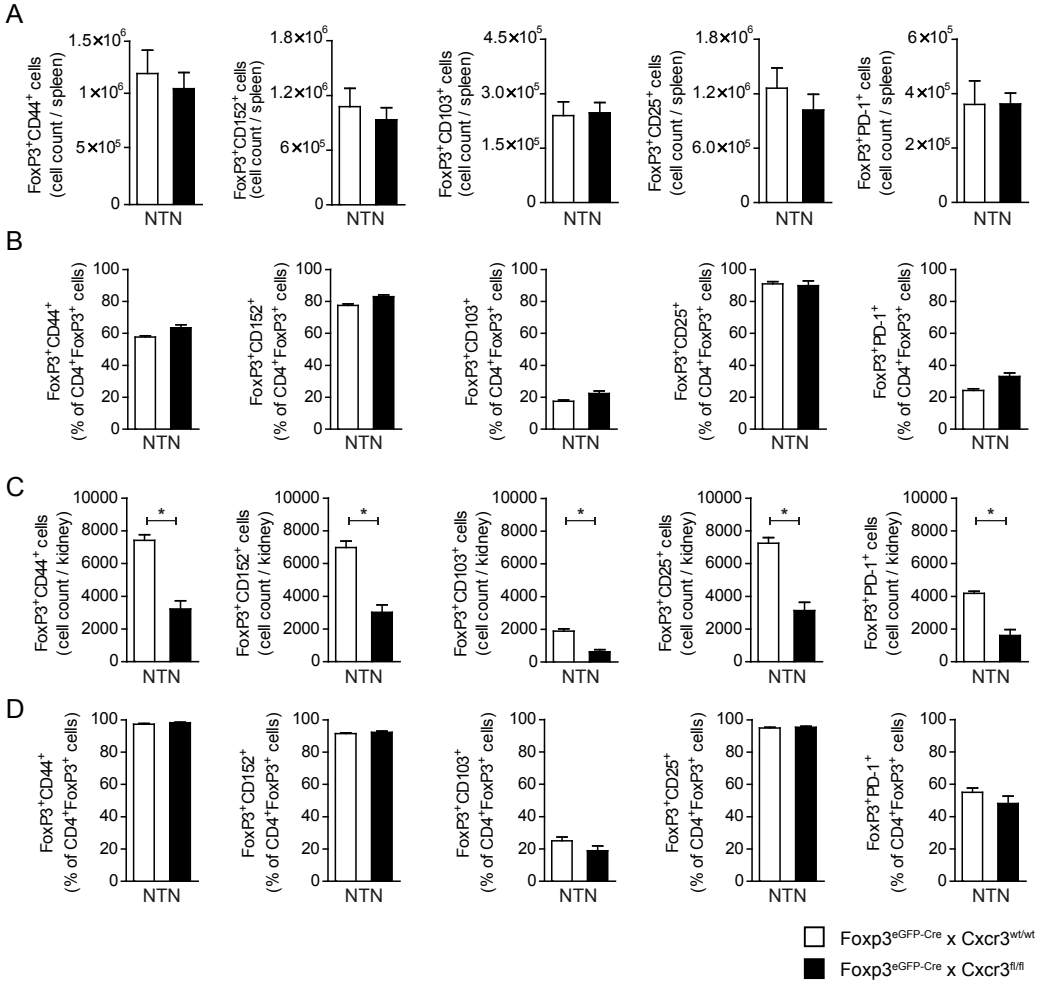


Supplemental Figure 4: CXCR3 ablation in Tregs does not affect their numbers in blood, spleen, and lymph nodes

FACS based quantification of leucocyte subsets isolated from blood (**A**), spleen (**B**), and lymph nodes (**C**) from naïve $Foxp3^{eGFP\text{-}Cre}$ x $Cxcr3^{wt/wt}$ (n=4) and $Foxp3^{eGFP\text{-}Cre}$ x $Cxcr3^{fl/fl}$ (n=3) mice expressed as % of $CD45^+$ cells. Bars represent means ± SEM.

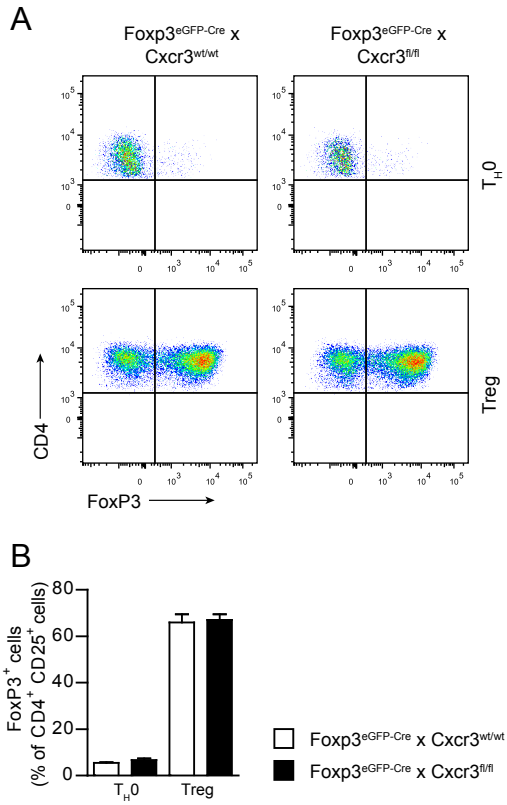


Supplemental Figure 5: CCR4⁺ and CCR6⁺ Tregs in control and nephritic animals
(**A**) Quantification of CCR4⁺ Tregs from kidney and blood of control and nephritic Foxp3$^{eGFP\text{-}Cre}$ x Cxcr3$^{wt/wt}$ and control and nephritic Foxp3$^{eGFP\text{-}Cre}$ x Cxcr3$^{fl/fl}$ mice, respectively (n=4-7 per group). (**B**) Quantification of CCR6⁺ Tregs from kidney and blood of control and nephritic Foxp3$^{eGFP\text{-}Cre}$ x Cxcr3$^{wt/wt}$ and control and nephritic Foxp3$^{eGFP\text{-}Cre}$ x Cxcr3$^{fl/fl}$ mice, respectively (n=4–7 per group). Bars represent means ± SEM.



Supplemental Figure 6: Phenotype of Tregs from spleen and kidney of nephritic wildtype and nephritic Foxp3$^{eGFP\text{-}Cre}$ x Cxcr3$^{fl/fl}$ mice

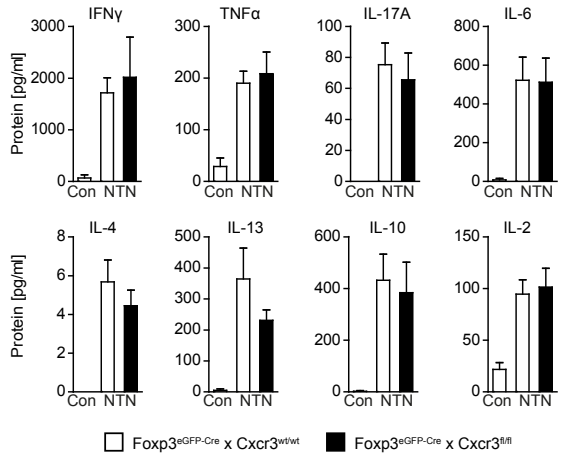
(**A**) Absolute numbers of FoxP3$^+$ Tregs per spleen and (**B**) relative frequency of FoxP3$^+$Tregs expressing CD44, CD152, CD103, CD25 or PD-1, respectively. (**C**) Absolute numbers of FoxP3$^+$ Tregs per kidney and (**D**) relative frequency of FoxP3$^+$Tregs expressing CD44, CD152, CD103, CD25 or PD-1, respectively. FACS analyses were performed 30 days after nephritis induction (n = 4 per group). Bars represent means ± SEM (* P<0.05).



Supplemental Figure 7: *In vitro* polarization of naïve CD4⁺ T cells into Tregs

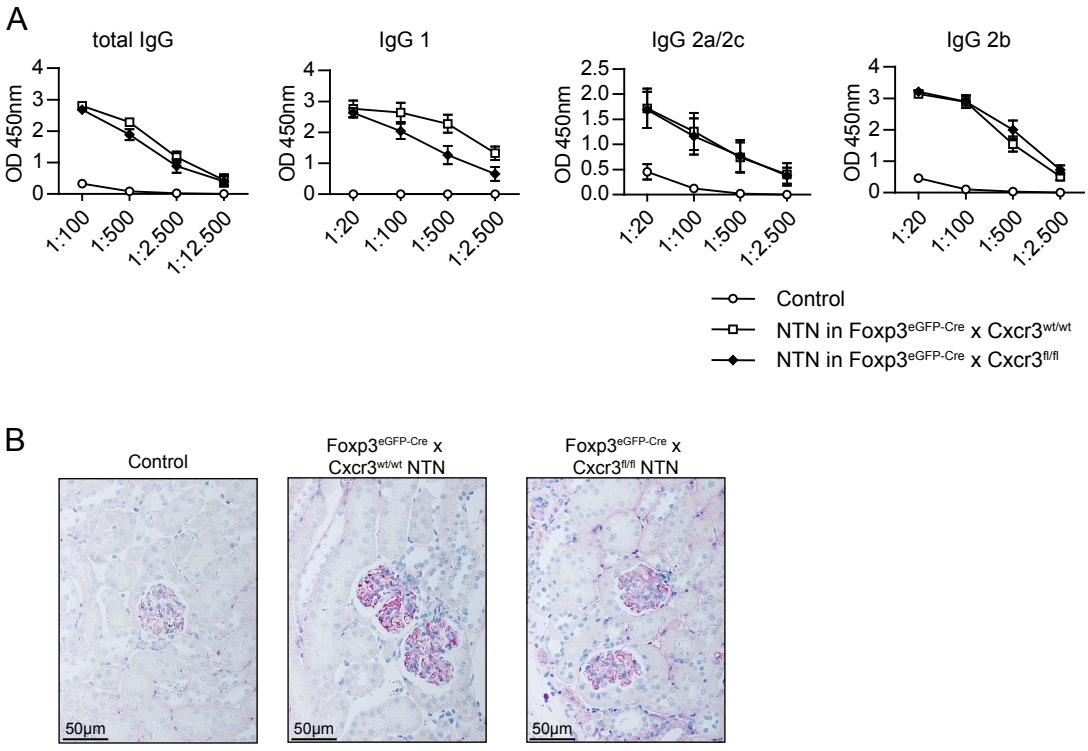
(**A**) Representative FACS analysis and (**B**) quantification of polarization experiment (n=4/group). For polarization of naïve CD4⁺ cells, splenocytes were isolated from naïve Foxp3$^{eGFP-Cre}$ x Cxcr3$^{wt/w}$ or Foxp3$^{eGFP-Cre}$ x Cxcr3$^{fl/fl}$ mice using MACS CD4⁺ T Cell Isolation Kit II (Milteny Biotec, Bergisch-Gladbach, Germany). A total of 5×10^5 cells/well was plated in anti-CD3 antibody-coated 96-well plates (eBioscience, San Diego, CA) and incubated for 65 hours with soluble anti-CD28 (Biolegend, San Diego, CA). For T_H0 conditions anti–IFN-γ (Biolegend) was added, and for Treg conditions TGFβ (Biolegend), and IL-2 (PeproTech, Rocky Hill, NJ) were additionally added. Bars and lines represent means ± SEM.

A



Supplemental Figure 8: Systemic cytokine levels

(**A**) CBA-measured cytokine levels of supernatants of sheep IgG-stimulated splenocytes cultured for 72h from nephritic Foxp3eGFP-Cre x Cxcr3wt/wt (n=11), nephritic Foxp3eGFP-Cre x Cxcr3fl/fl (n=10), and control mice (n=4) at day 30. Lines and bars represent means ± SEM.



Supplemental Figure 9: Humoral immune response

(**A**) ELISA analysis of circulating serum mouse anti-sheep IgG-, IgG1-, IgG2a/2c-, and IgG2b-levels at different dilutions from control (n=5), nephritic Foxp3$^{eGFP\text{-}Cre}$ x Cxcr3$^{wt/wt}$ (n=13) and nephritic Foxp3$^{eGFP\text{-}Cre}$ x Cxcr3$^{fl/fl}$ (n=14) mice 30 days after induction of NTN. (**B**) Representative photographs of glomerular mouse IgG deposition of the three above-mentioned groups. Original magnification x200. Symbols represent means ± SEM.