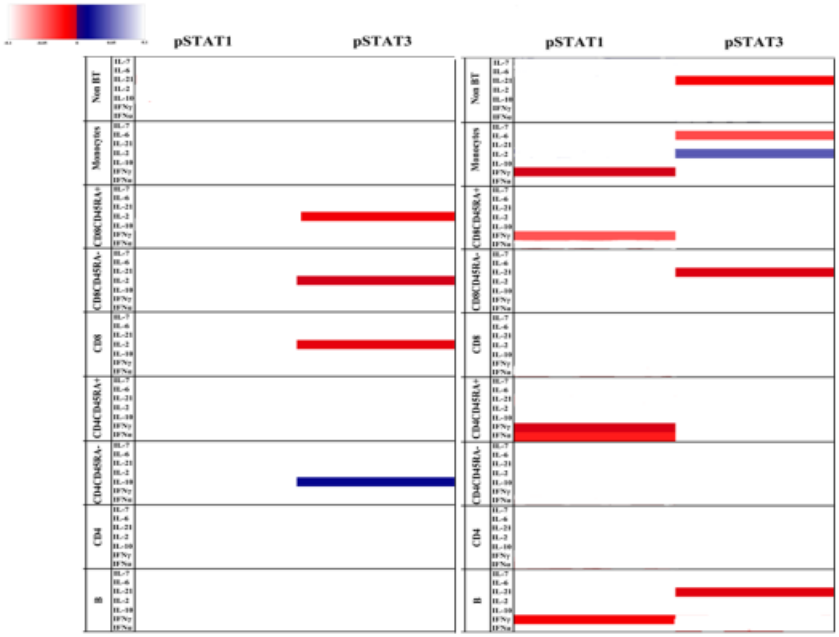
JAK-STAT Activity in Peripheral Blood Cells and Kidney Tissue in IgA Nephropathy

Supplemental Material Table of Contents

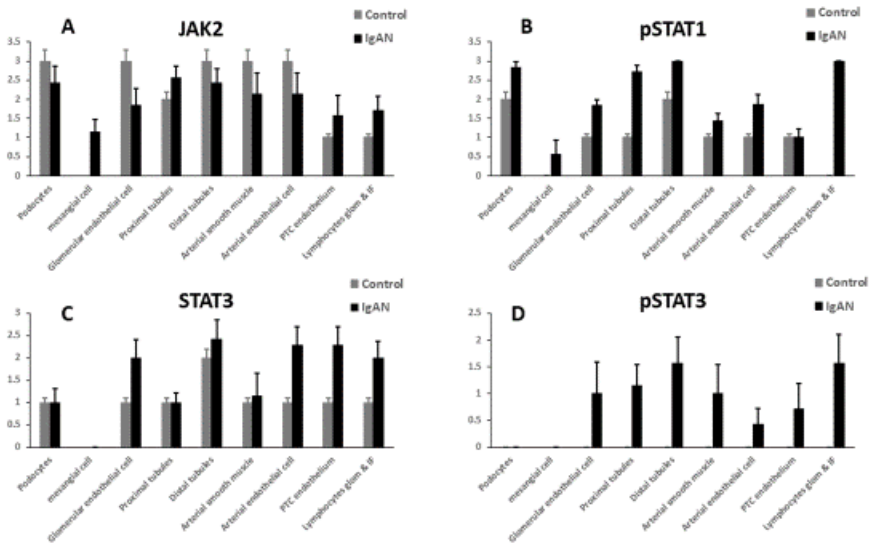
Supplemental Table 1. Percentage of subsets of PBMCs in control and IgA nephropathy patients

	Control	IgAN	P
B lymphocyte	12.33±1.11	10.12±1.13	0.175
CD4+ lymphocyte	46.94±2.30	41.69±1.89	0.09
CD4+CD45RA+ lymphocyte	44.38±3.82	34.52±2.83*	0.049
CD4+CD45 RA - lymphocyte	51.01±3.30	63.43±2.82*	0.007
CD8+ lymphocyte	25.06±1.81	27.76±1.39	0.25
CD8+CD45 RA + lymphocyte	53.18±3.32	45.54±3.20	0.11
CD8+CD45 RA - lymphocyte	43.72±3.27	51.44±3.09	0.09
Non BT lymphocyte	13.96±1.25	17.35±1.53	0.09
Monocyte	5.68±0.75	5.17±0.79	0.65



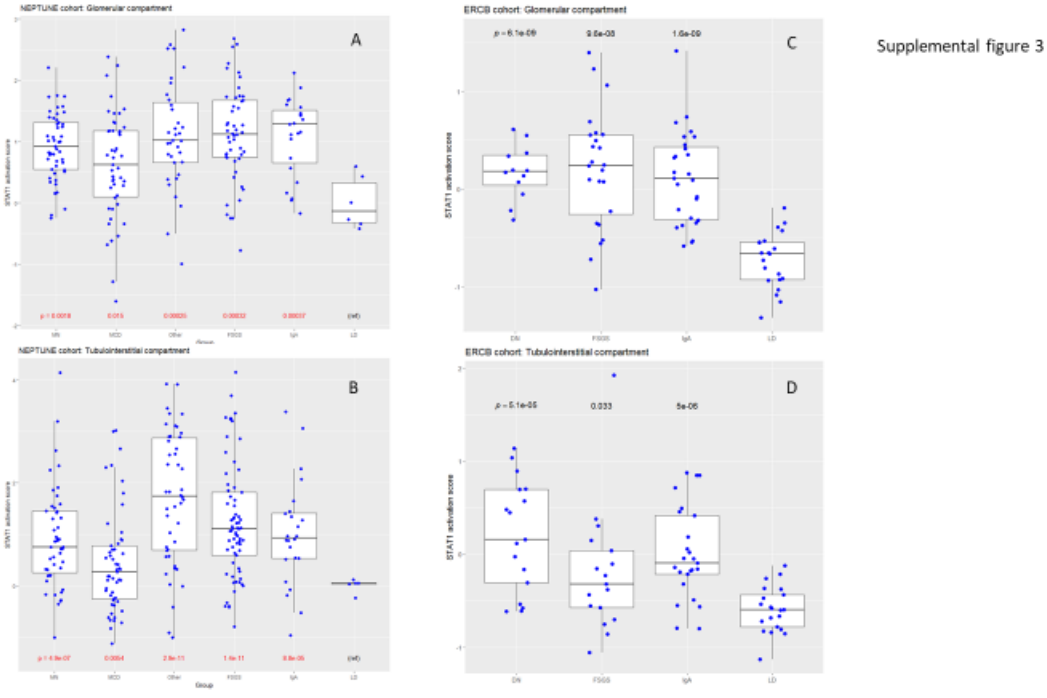
Supplemental Figure 1

Supplemental Figure 1. Correlation analysis between 24 hour urine protein excretion (mg) (left panel), or serum creatinine (mg/dl) (right panel) with pSTAT1, and pSTAT3 of B lymphocytes, CD4+, CD4+CD45RA+, CD4+CD45RA-, CD8+, CD8+CD45RA+, CD8+CD45RA-, NK cells, and monocytes stimulated by IFNα, IFNγ, IL-6, IL-7, IL-10, IL-2, and IL-21. P values determined by Pearson correlation analysis were presented in this heatmap format. Direction of positive correlation or negative correlation was represented by blue (positive) or red (negative).



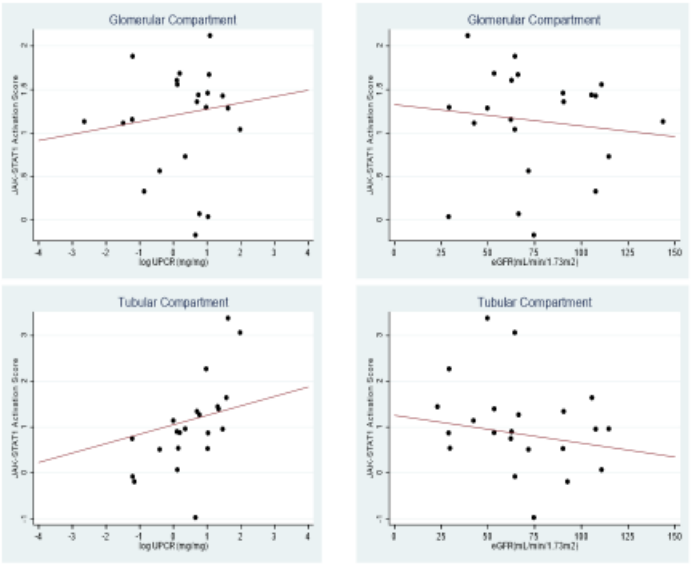
Supplemental Figure 2

Supplemental Figure 2. Semi-quantification of the JAK2, pSTAT1, STAT3, and pSTAT3 immunohistochemistry staining in IgAN patients (n=7). Healthy kidney dissected from the margin of removed human renal tumor was used as control. For JAK2 (A), the scoring was used as 0: none; +1 <25% cells positive with weak intensity; +2 26-100% cells positive with weak intensity; +3 26-100% cells positive with strong intensity. For pSTAT1 (B), the scoring was used as 0: none; +1 <50% cells positive with weak intensity; +2 51-100% cells positive with a stronger intensity ; +3 51-100% cells positive with further stronger intensity. For STAT3 (C), the scoring was used as 0: none; +1 100% cells positive with weak intensity; +2 100% cells positive with a stronger intensity and the similar intensity between nuclear staining and cytoplasmic staining; +3 51-100% cells positive with a strong intensity and stronger intensity in nuclear staining than cytoplasmic staining. For pSTAT3 (D), the scoring was used as 0: none; +1 <10% cells positive with weak intensity; +2 11%-74% cells positive with weak intensity; +3 >75% cells positive with a strong intensity. Graphs depict mean and standard error of the mean.



Supplemental figure 3

Supplemental Figure 3. Tertile boxes of pSTAT 1 activation scores of glomerular disease subjects vs healthy living donor kidneys in glomerular sections from NEPTUNE and ERCB (A and B), and in tubule- interstitial sections from NEPTUNE and ERCB (C and D). NEPTUNE cohorts include previously described FSGS and DN cohorts and minimal change (MCD) and membranous nephropathy (MN) cohorts (ref 23) and ERCB includes previous described FSGS and DN cohorts (ref 23)



Supplemental Figure 4

Supplemental Figure 4. Spearman correlation between STAT1 activation score in the glomerular sections and baseline proteinuria (rho = 0.091, p-value 0.6874, n = 22) and eGFR from NEPTUNE patients (rho = - 0.107, p value 0.64, n = 22). Spearman correlation between STAT1 activation score in the interstitium and baseline proteinuria (UPCR: rho = 0.71, p-value <0.001, n = 22) and eGFR (rho = -0.31, p-value 0.16, n = 22) from NEPTUNE patients.