

Figure S1. Patients with DN exhibit additional severe inflammation in the kidneys and serum. (A) TNF- α , IL-1 β , and MCP-1 expression was detected by ELISA. *P<0.05 vs. control group. (B) Immunohistochemical analysis of TNF- α expression in the kidney tissue. Scale bar, 50 μ m. *P<0.05 vs. control group. (C) Immunohistochemical analysis of CD68 expression in the glomerulus and tubulointerstitium. Scale bar, 50 μ m. *P<0.05 vs. control group. DN, diabetic nephropathy; MCP-1, monocyte chemoattractant protein-1.

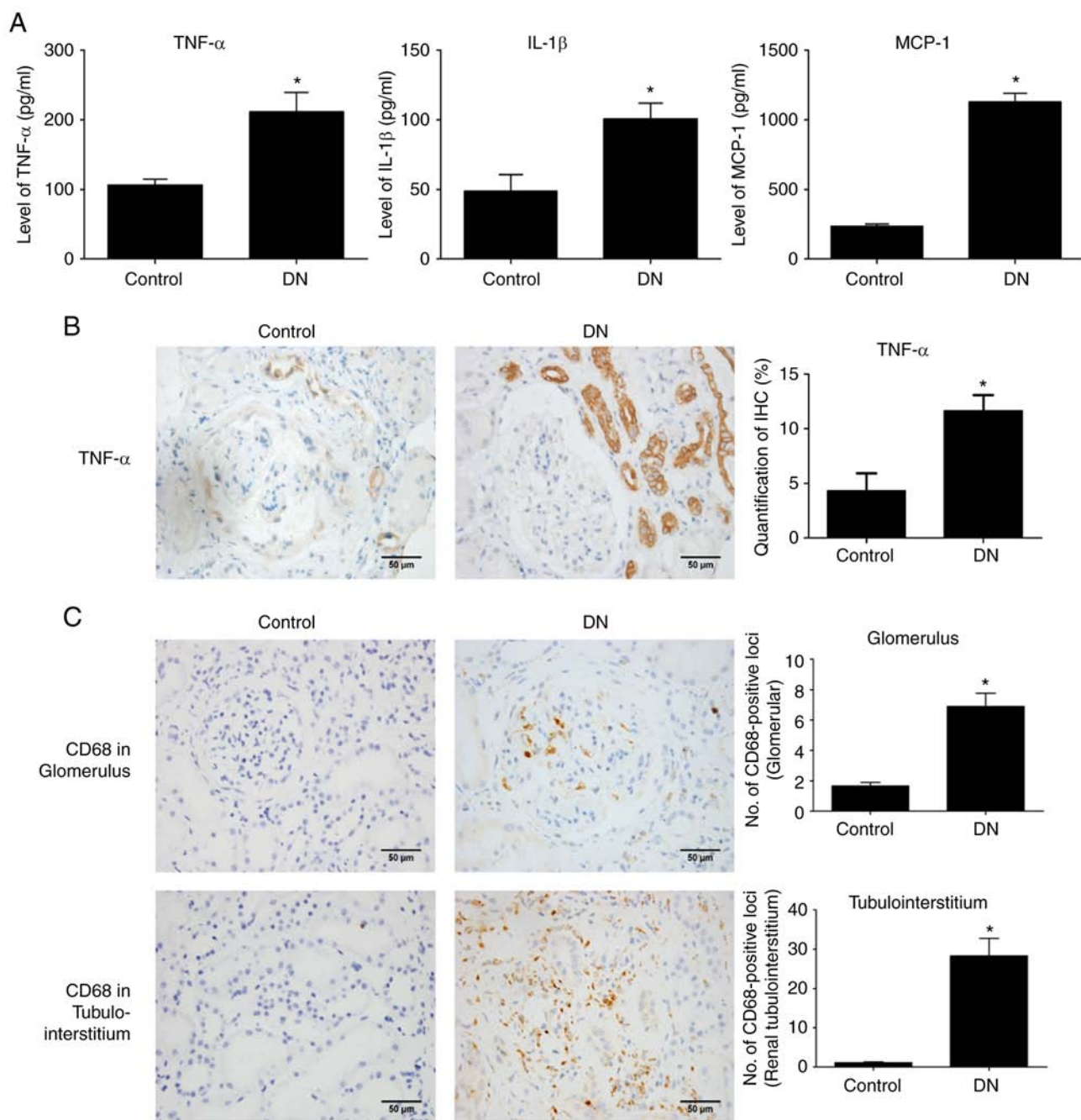


Figure S2. iNOS and NLRP3 are notably activated in renal macrophages in the kidneys of patients with DN. (A) CD68 was co-stained with iNOS in the kidney. Scale bar, 20 μ m. (B) CD68 was co-stained with NLRP3 in the kidney. The white arrows indicate the co-positive staining area of (A) CD68 with iNOS and (B) CD68 with NLRP3 in the kidney. Scale bar, 20 μ m. DN, diabetic nephropathy; NLRP3, NLR family pyrin domain containing 3.

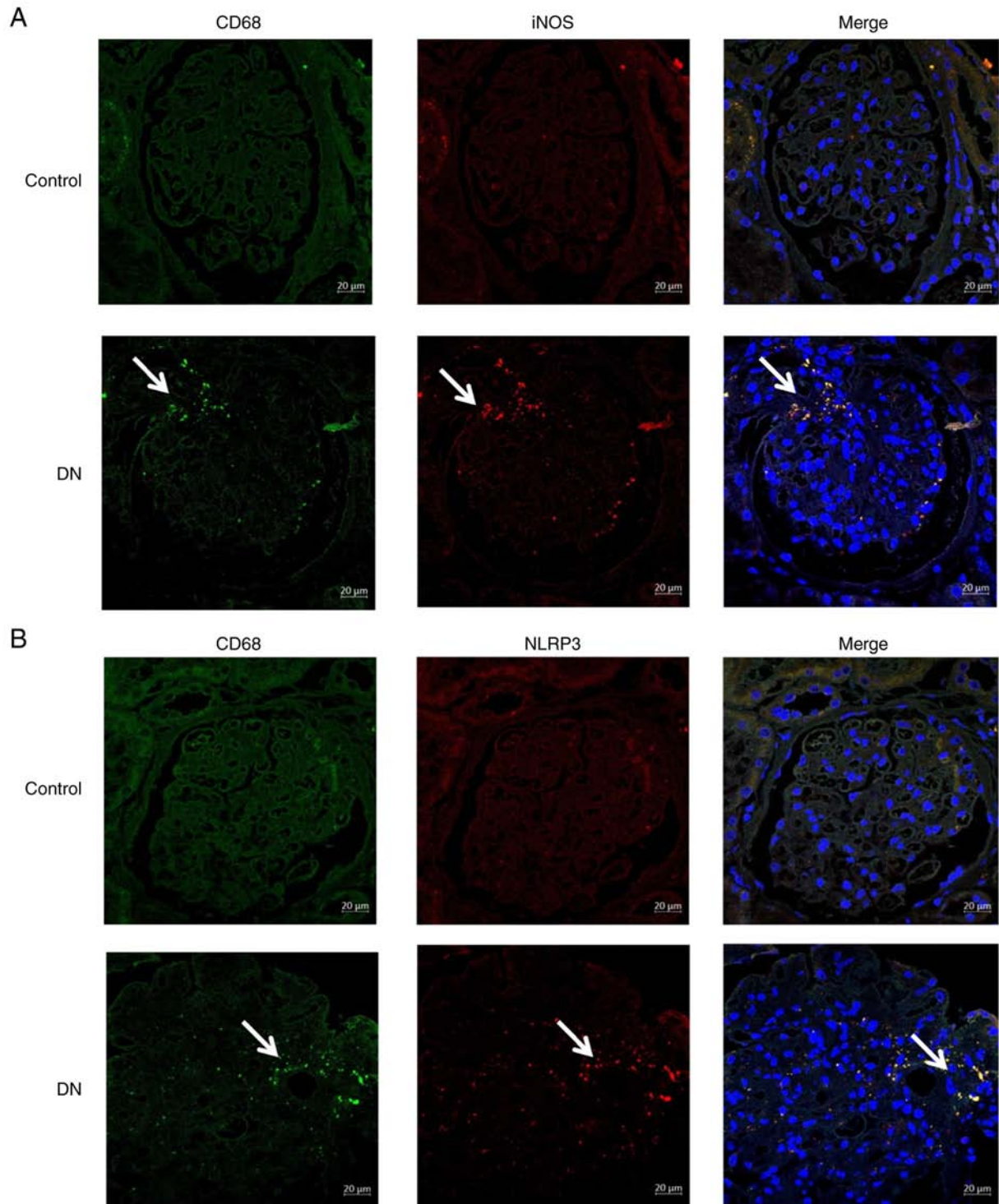


Figure S3. Genotype identification of BTK knockout mice. 1.5% agarose gel electrophoresis was used for the genotype identification in BTK knockout mice. BTK, Bruton's tyrosine kinase.

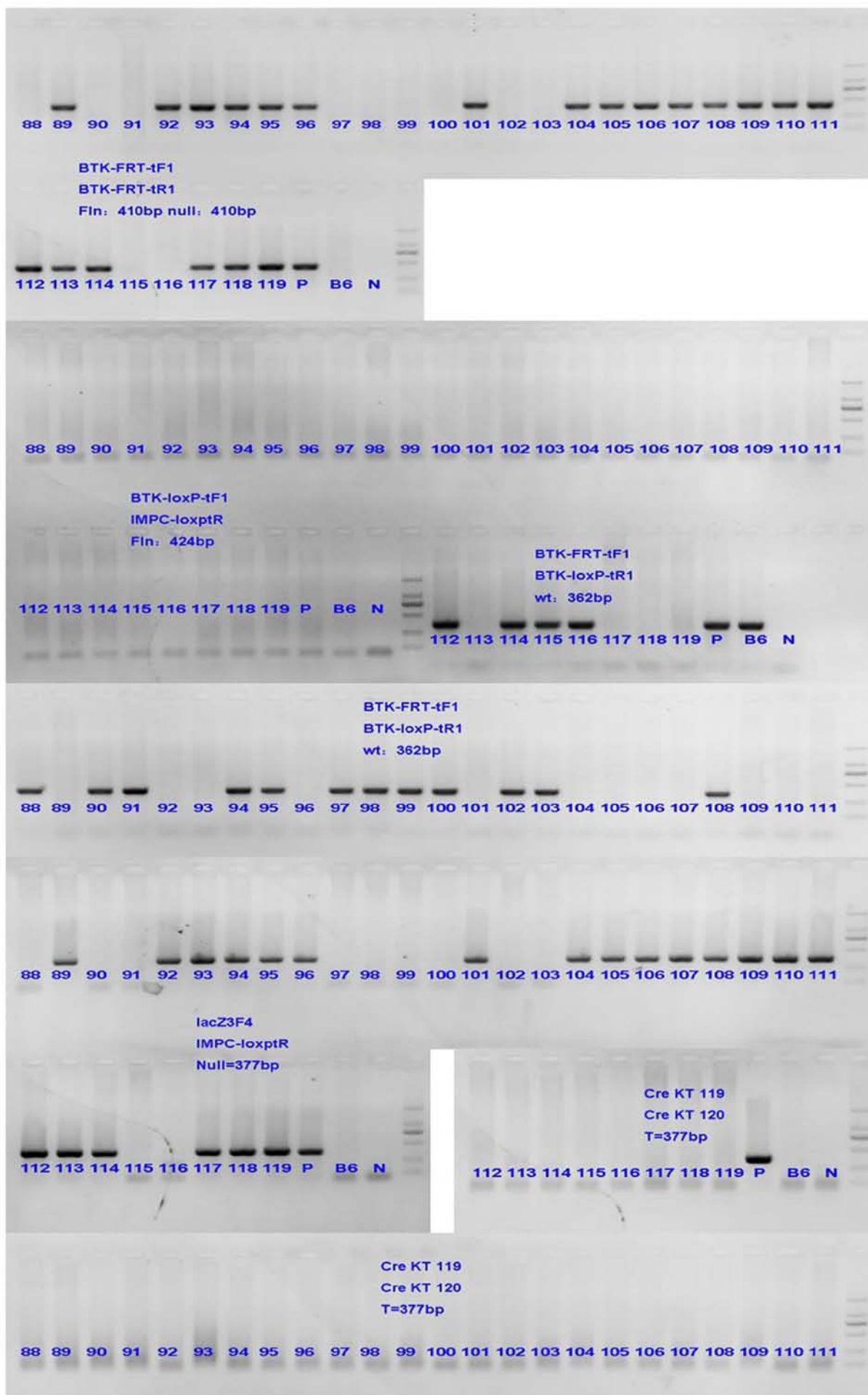


Figure S4. Renal fibrotic changes in mice. MASSON staining kit was used to detect the renal fibrotic changes in mice. Scale bar, 50 μ m. Significant differences were analyzed via a one-way ANOVA with Bonferroni's post hoc analysis. No statistically significant differences were found between the groups.

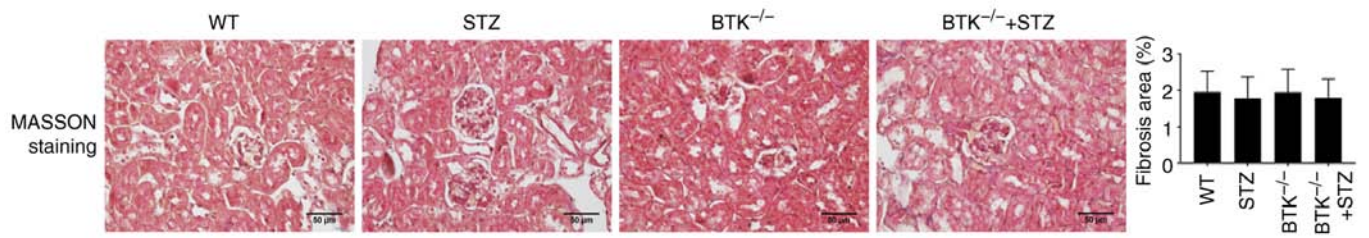


Table SI. Clinical characteristics of patients with type 2 diabetic nephropathy.

Clinical indicators	Control (n=18)	DN (n=49)
Sex (male/female)	10/8	34/15
Age (years)	45.67±10.27	49.12±8.04
HbA1c (%)	4.49±0.66	7.56±1.63 ^a
BMI (Kg/m ²)	24.39±3.50	25.76±3.22
SBP (mmHg)	129.00±2.66	144.10±20.77 ^a
DBP (mmHg)	79.67±7.68	86.88±12.94 ^a
MAP (mmHg)	96.11±7.56	105.95±13.99 ^a
Proteinuria (g/24 h)	0.07±0.05	2.63 (0.08, 13.32) ^a
Serum creatinine (μmol/l)	57.98±17.09	104.00 (58.78, 312.92) ^a
Blood urea nitrogen (mmol/l)	4.92±0.95	8.75±3.26 ^a
eGFR (ml/min/1.73 m ²)	119±11.19	72.45±30.01 ^a
Serum uric acid (mmol/l)	293.22±32.71	379.98±84.16 ^a

Data are presented as the mean ± SD and as the median (P25,P75). BMI, body mass index; DBP, diastolic blood pressure; eGFR, estimated glomerular filtration rate; SBP, systolic blood pressure; MAP, mean arterial pressure. ^aP<0.05 vs. control.

Table SII. Tervaert classification of patients with type 2 diabetic nephropathy (n=49).

Tervaert classification (n)	No. of patients
I	7
IIa	11
IIb	5
III	26
Interstitial fibrosis and tubular atrophy (n)	
0	3
1	24
2	22
Interstitial inflammation (n)	
0	3
1	26
2	20