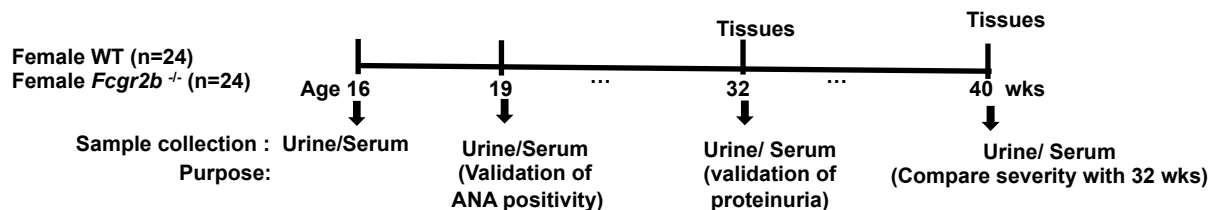
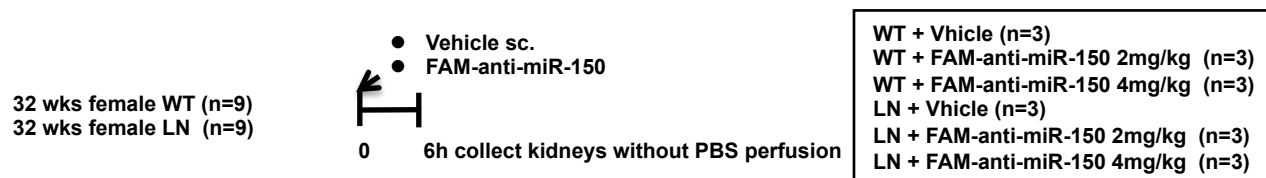


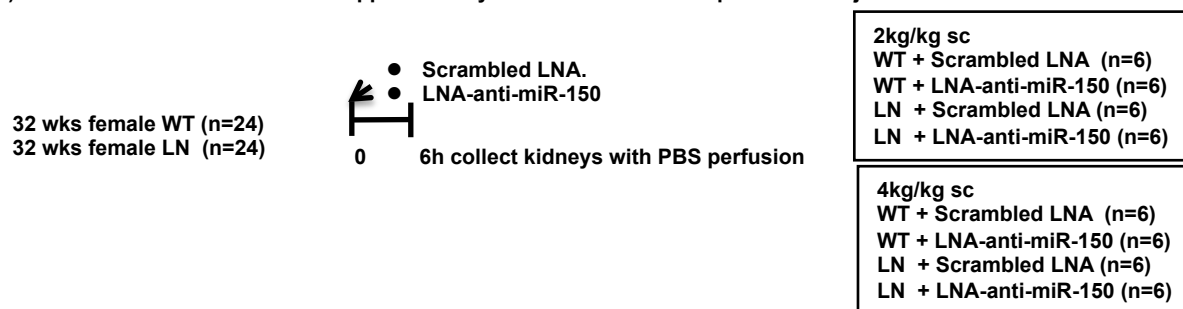
(a) Natural history of *Fcgr2b*^{-/-} mice that spontaneously developed LN



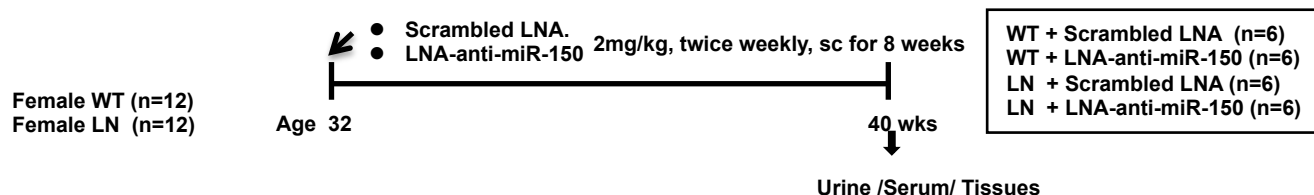
(b) Absorption of FAM labeled LNA-anti-miR-150 by mice kidneys 6h post the subcutaneous injection (sc)



(c) Confirmation of renal miR-150 suppression by LNA-anti-miR-150 6h post the sc injection



(d) Effects of LNA-anti-miR-150 on kidney injury in LN mice



(e) The renal expression of miR-150 and its regulated proteins in human subjects

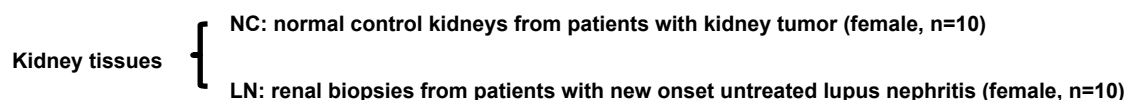


Figure S1. Study design. (a) Natural history of *Fcgr2b*^{-/-}-spontaneous lupus nephritis (LN). (b) The absorption of FAM-labeled locked nucleic acid (LNA)-anti-miR-150 by kidney 6 hours after the subcutaneous injection. (c) The suppression of renal miR-150 levels (d) The effect of LNA-anti-miR-150 on kidney injury in LN mice. (e) Renal miR-150 expression in LN patients.

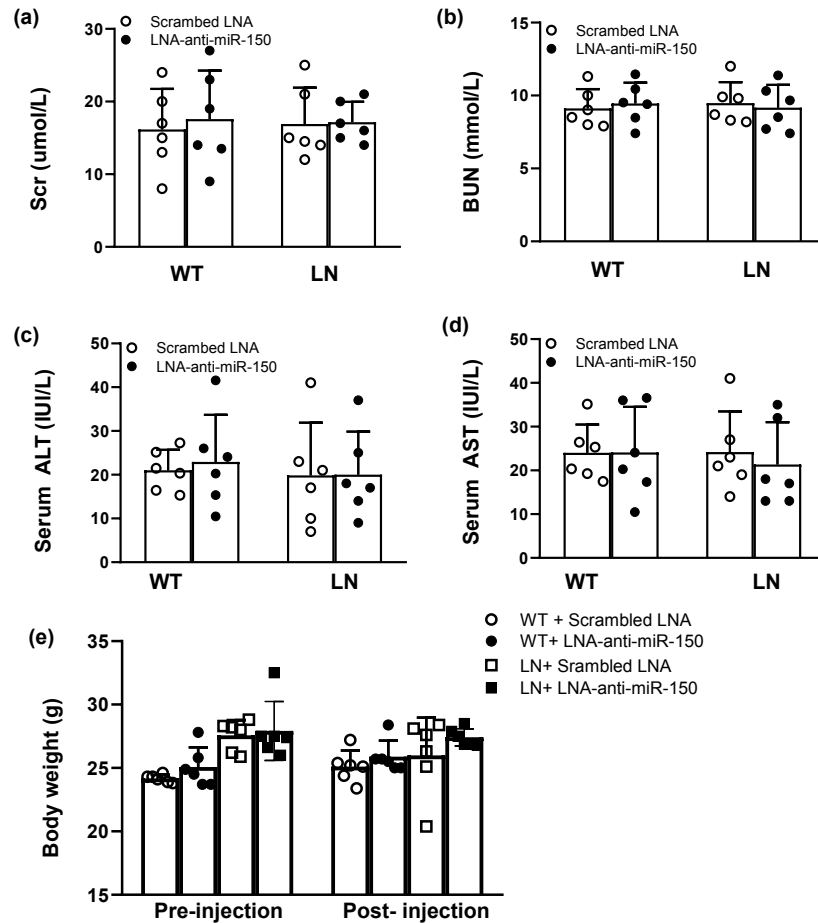
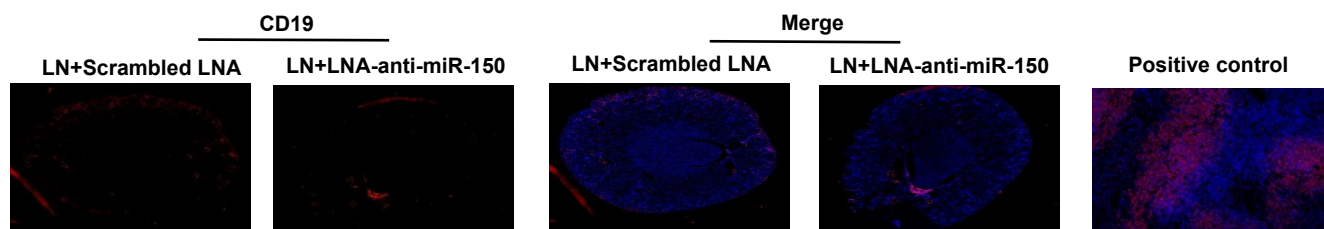
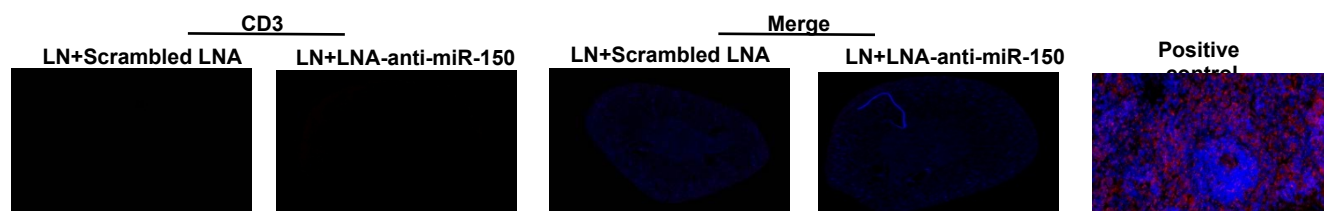


Figure S2. The safety of LNA-anti-miR-150 as a therapeutic agent in LN mice. (a) Serum creatinine (Scr) , (b) blood urea nitrogen (BUN), (c-d) hepatic enzymes was assayed by an Architect c1600 device and (e) body weight was measured in WT and LN mice treated with the scrambled LNA or LNA-anti-miR-150 (subcutaneous injection twice weekly for eight weeks, six mice per group). Data are expressed as mean $\pm$ SD from six mice per group. Statistical significance was determined using two-way ANOVA ($\#p < 0.05$, LN vs. WT. $*p < 0.05$, LNA-anti-miR-150 vs. the scrambled LNA).

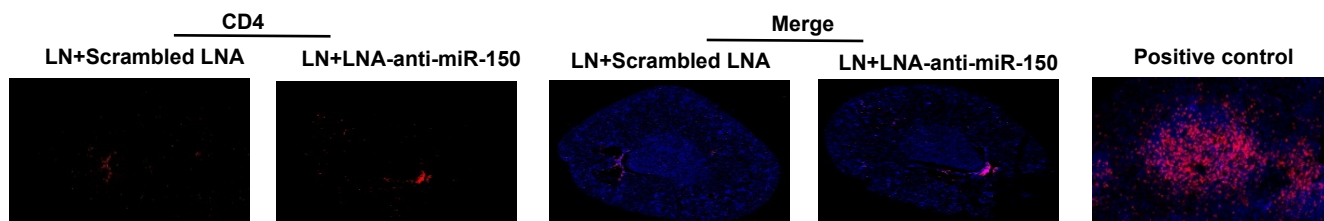
(a) B lymphocytes



(b) CD3⁺ total T lymphocytes



(c) CD4⁺ subset T lymphocytes



(d) CD8⁺ subset T lymphocytes

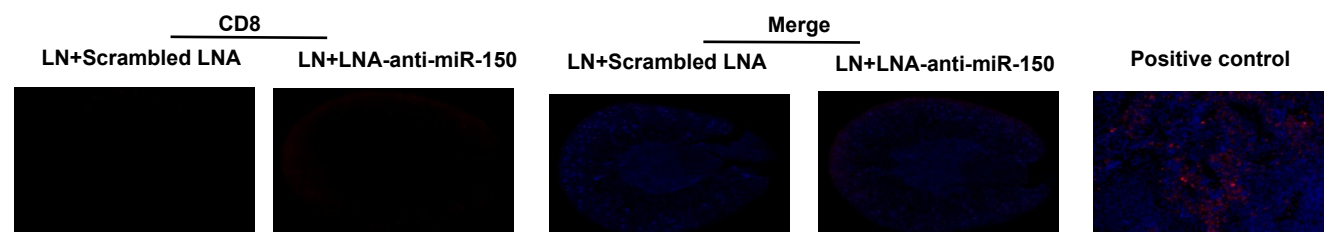


Figure S3. The effect of LNA-anti-miR-150 on the infiltration of B and T cells in kidneys of LN mice. Renal expression of B lymphocytes (a) and CD3⁺ total T lymphocytes (b) as well as subset CD4⁺ T (c) and CD8⁺ T lymphocytes (d) was detected by immunofluorescent (IF) staining in LN mice treated with the scrambled LNA or LNA-anti-miR-150 (subcutaneous injection twice weekly for eight weeks, six mice per group) (Magnification, 1.5X). Spleen was used as positive control of IF staining for B and T lymphocytes (magnification, 200X).

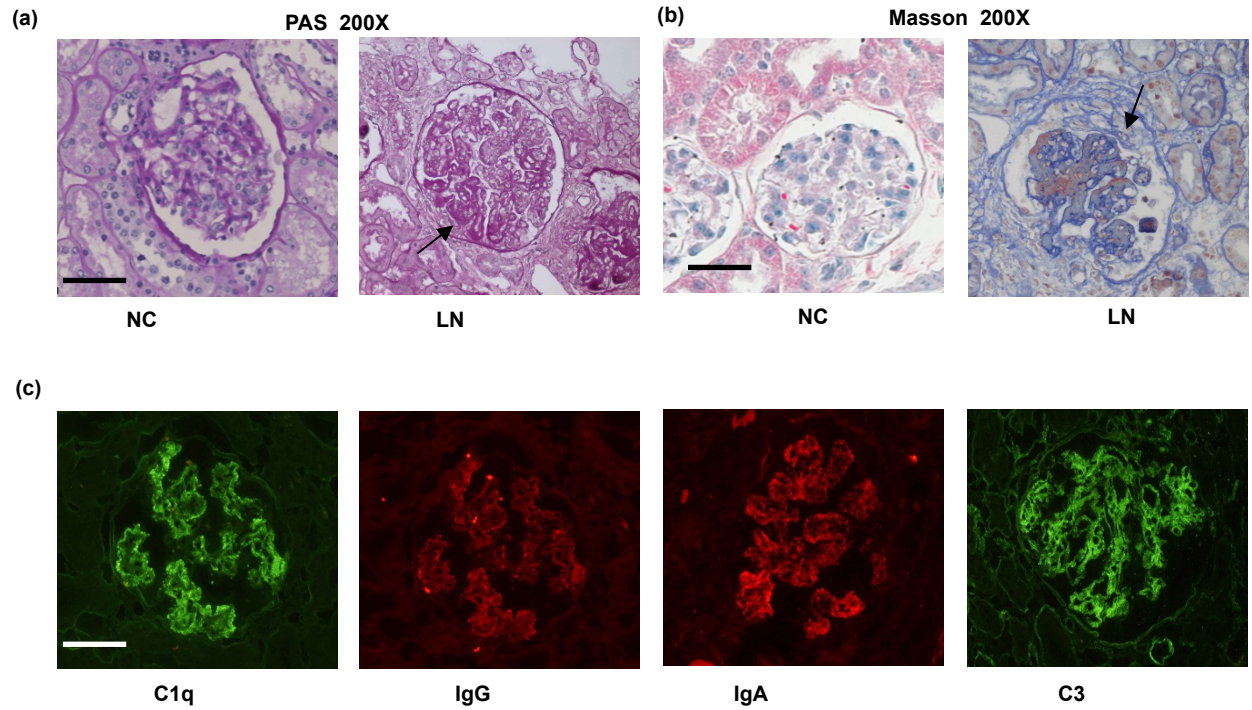


Figure S4. Pathological features on renal biopsies of LN patients. (a-b) PAS and Masson staining of paraffin-embedded kidney sections taken from renal biopsies of LN patients showed typical endocapillary proliferation, lobular capillary tufts, and small crescents (black arrows) compared to normal control kidney tissue (NC). (c) Immunofluorescent staining of renal biopsies from LN patients showed “Full house” with positive stained C1q, IgG, IgA, and C3 (magnification $\times 200$, bar=60 μ m).