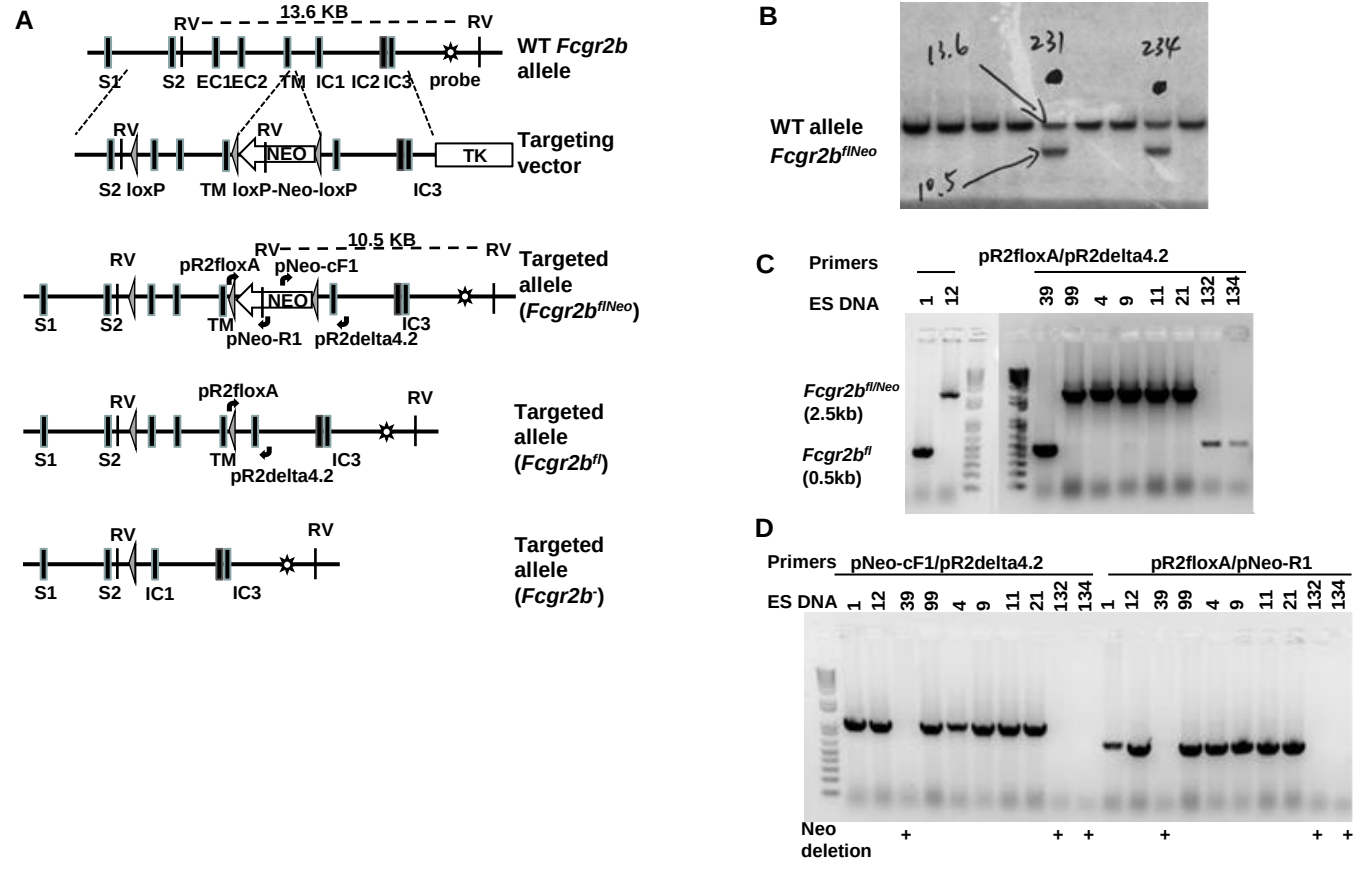
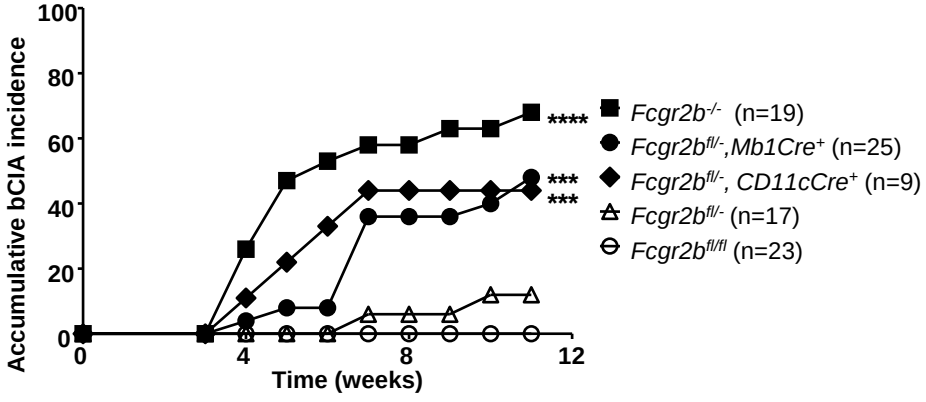
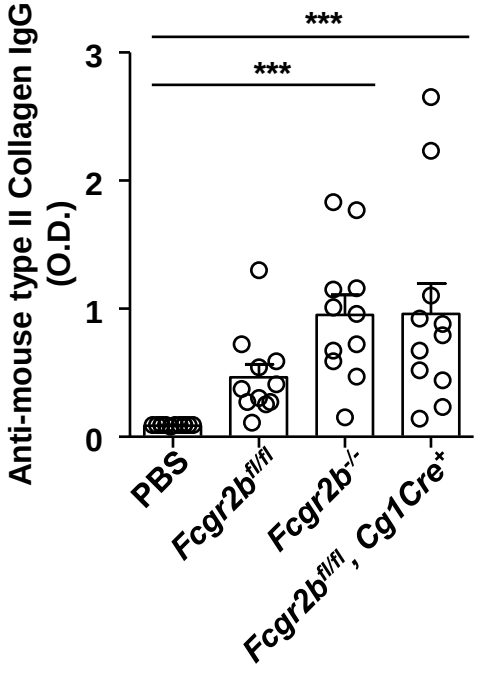


Supplementary Figure 1 Generation of *Fcgr2b*^{fl} and *Fcgr2b*$^{-}$ *mice*. (A) Strategy used to generate mice with loxP-flanked *Fcgr2b* alleles (*Fcgr2b*^{fl}). Shown are schematic maps of the wild-type *Fcgr2b* allele, targeting vector, targeted alleles before (*Fcgr2b*^{flNeo}) and after (*Fcgr2b*^{fl}) the loxP-flanked neomycin-resistant gene (neo) cassette is deleted by Cre, as well as the *Fcgr2b*$^{-}$ allele. The exons of the *Fcgr2b* gene (S1, S2, EC1, EC2, TM, IC1, IC2, IC3) are shown as vertical bars; grey triangles represent loxP sites; wide empty arrow labeled with "NEO" is the neomycin-resistant gene; vertical lines labeled as "RV" represent EcoR V restriction sites and the relevant EcoR V fragments are shown using dashed line labeled with the sizes; spiky circles represent probe for Southern blot; the sites of two forward PCR primers (pR2floxA and pNeo-cF1) and two reverse primers (pNeo-R1 and pR2delta4) are shown as bended arrows. The targeting vector is designed to generate a targeted *Fcgr2b* allele (*Fcgr2b*^{flNeo}) with a loxP site inserted between the S1 and EC1 exons, and a loxP flanked neo cassette between the TM and IC1 exons after the desired recombination between the targeting vector and the WT *Fcgr2b* allele in ES cells. The loxP-flanked neo cassette can be deleted by Cre in ES cells to generate the *Fcgr2b*^{fl} allele that has two loxP sites flanking the region between the S2 and TM exons. The region between the two distal loxP sites can be deleted by Cre to generate the *Fcgr2b*$^{-}$ allele. (B) Identification of ES clones containing the *Fcgr2b*^{flNeo} targeted allele (after the endogenous WT *Fcgr2b* gene recombines with the targeting vector) by Southern blot using EcoR V digested ES cell genomic DNA the probe shown in (A). One of the positive clones, #231 was picked for the downstream experiments. (C) Identification of ES clones with the *Fcgr2b*^{fl} allele (after ES clone #231 was transiently transfected with a Cre-expression construct) by PCR using primers pR2floxA and pRdelta4.2, which generate a 0.5 kb product specific from the *Fcgr2b*^{fl} allele, and a 2.5kb product from the *Fcgr2b*^{flneo} allele, and no product from other alleles. (D) Confirmation of the deletion of the neo cassette by PCR using the indicated primers. Among several clones that are positive for the *Fcgr2b*^{fl} allele and the deletion of neo cassette, #39 was picked for further development of mice carrying the *Fcgr2b*^{fl} allele.



Supplementary Figure 2 Susceptibilities of mice with germline or conditional knockout of *Fcgr2b* to bovine type II collagen induced arthritis (bCIA). Accumulative bCIA incidences in WT (*Fcgr2b*$^{fl/fl}$) and the indicated mutant male mice with germline or conditional knockout of *Fcgr2b* on the heterozygous *Fcgr2b*^{fl} background are presented. "n" values are the numbers of mice in each group. *** $p < 0.001$, **** $p < 0.0001$, Chi-square test (*vs* the "*Fcgr2b*$^{fl/fl}$" mice).



Supplementary Figure 3. Mouse type II collagen-specific IgG responses in mice with germline or conditional knockout of *Fcgr2b* in the chicken type II collagen induced arthritis (cCIA) model. *Fcgr2b*$^{fl/fl}$, *Fcgr2b*$^{-/-}$, and *Fcgr2b*$^{fl/fl}$*Cg1Cre*$^{+}$ mice were treated with chicken type II collagen in adjuvant to induce arthritis. Levels of mouse type II collagen-specific IgG were analyzed two months later by ELISA and presented as O.D. values (mean±s.d. and individual values plotted). *** $p < 0.001$, ANOVA with Tukey's post hoc (additional statistical test results: "*Fcgr2b*$^{-/-}$" vs "*Fcgr2b*$^{fl/fl}$", $p < 0.05$ in *t*-test; "*Fcgr2b*$^{fl/fl}$*, Cg1Cre*$^{+}$" vs "*Fcgr2b*$^{fl/fl}$", $p < 0.01$ in F-test).

Supplementary table: premature mortality and proteinuria phenotypes in FcγRIIB-deficient mice

Strain	Age (month)	Total number of mice	Mortality	Sick[a]	Mortality and sick (%)
WT B6	10	18	0	0	0
Fcgr2b$_{B6}^{-/-}$	10	22	1	0	5
B6.Fcgr2b$_{129}^{-/-}$ (N12)	10	29	18	9	93

[a] "sick" is define as proteinuria levels 100 mg/dL or above.