# Supporting Information

## Khmaladze et al. 10.1073/pnas.1405798111

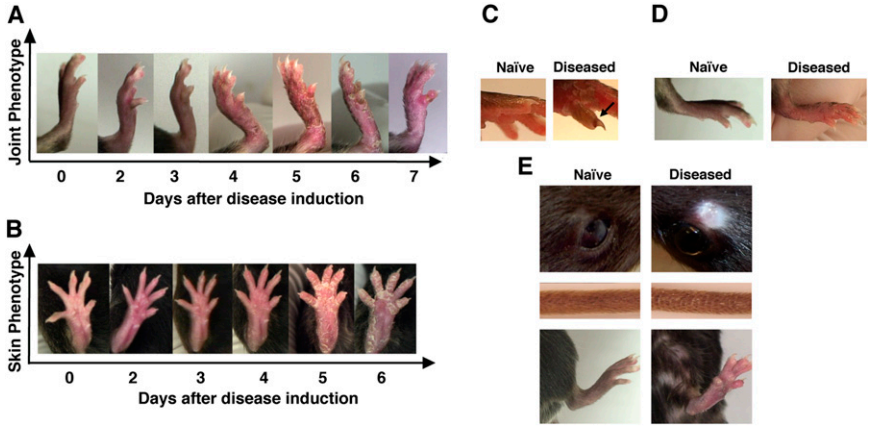


**Fig. S1.** Clinical phenotypes of mannan-induced psoriasis arthritis-like disease in mice. The arthritic joint phenotype (*A*) and psoriasis-like skin lesions (*B*) in B10Q.*Ncf1*$^{m1j/m1j}$ mice are shown. Onycholysis (*C*) and alopecia (*D*) developed during the late phase of the disease. (*E*) Representative images of pruritus above the eye (day 17), flaky skin on the tail (day 10), and alopecia on the hind leg (day 19) after the second mannan injection compared with naive mice.

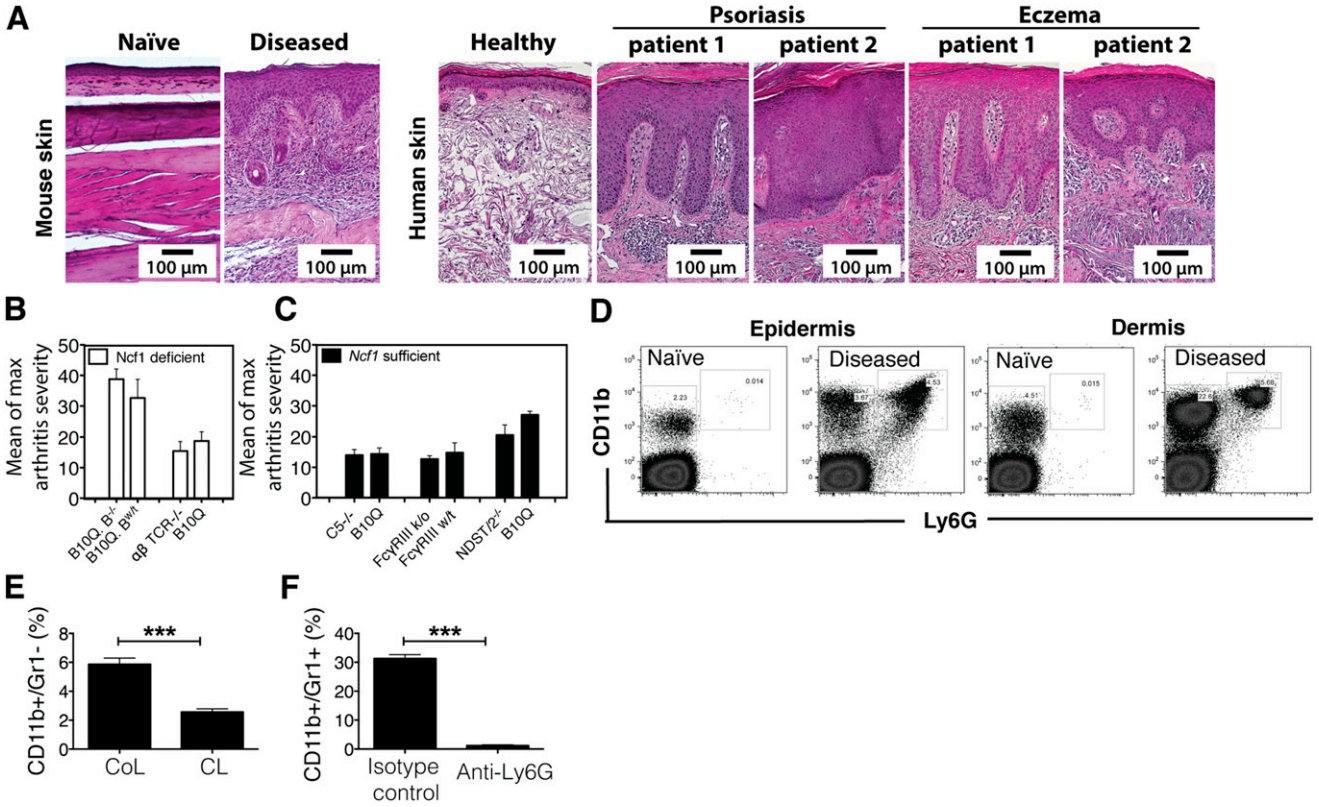


**Fig. S2.** Skin pathology, inflammatory mediators, and cell depletion. (*A*) Naive and diseased B10Q.*Ncf1*$^{m1j/m1j}$ mouse hind paw skin was compared with human skin samples from healthy patients and those with psoriasis ($n = 2$) and eczema ($n = 2$). (*B*) Mean arthritis severity in B10Q.B$^{-/-}$/*Ncf1*$^{m1j/m1j}$ ($n = 8$), B10Q.B$^{w/t}$/*Ncf1*$^{m1j/m1j}$ ($n = 5$), and B10Q.αβ T-cell receptor (TCR)$^{-/-}$.*Ncf1*$^{m1j/m1j}$, B10Q.*Ncf1*$^{m1j/m1j}$ mice ($n = 7$ mice per group). (*C*) Mean arthritis severity in B10Q.C5$^{-/-}$ ($n = 5$), B10Q ($n = 8$); B10Q.Fcγ receptor III (RIII) KO ($n = 11$), B10Q.FcγRIII WT [w/t (WT); $n = 6$]: B10Q.*NDST2*$^{-/-}$ ($n = 5$) and B10Q ($n = 5$) mice after initiation of the disease. (*D*) Flow cytometry gating plot of monocytes/macrophages (CD11b$^+$ Ly6G$^-$) and granulocytes (CD11b$^+$ Ly6G$^+$) in the skin epidermis and dermis cells of B10Q.*Ncf1*$^{m1j/m1j}$ mice. (*E*) Frequency of CD11b$^+$/Gr1$^-$ cells (flow cytometry gating was done from B220 single viable cells in lymphocyte/monocyte gating) in the blood of naive B10Q.*Ncf1*$^{m1j/m1j}$ mice on day 2 after clodronate liposome (CL) and control liposome (CoL) i.v. injection (200 μL) ($n = 5$–8 mice per group). Data is presented as mean ± SEM. ***$P < 0.001$. (*F*) Frequency of CD11b$^+$/Gr1$^+$ cells (flow cytometry gating was done from CD45$^+$ single viable cells) in the blood of mannan-immunized B10Q.*Ncf1*$^{m1j/m1j}$ mice on day 2 after injection of anti-Ly6G or the isotype control antibody ($n = 4$ mice per group). Data is presented as mean ± SEM. ***$P < 0.001$.

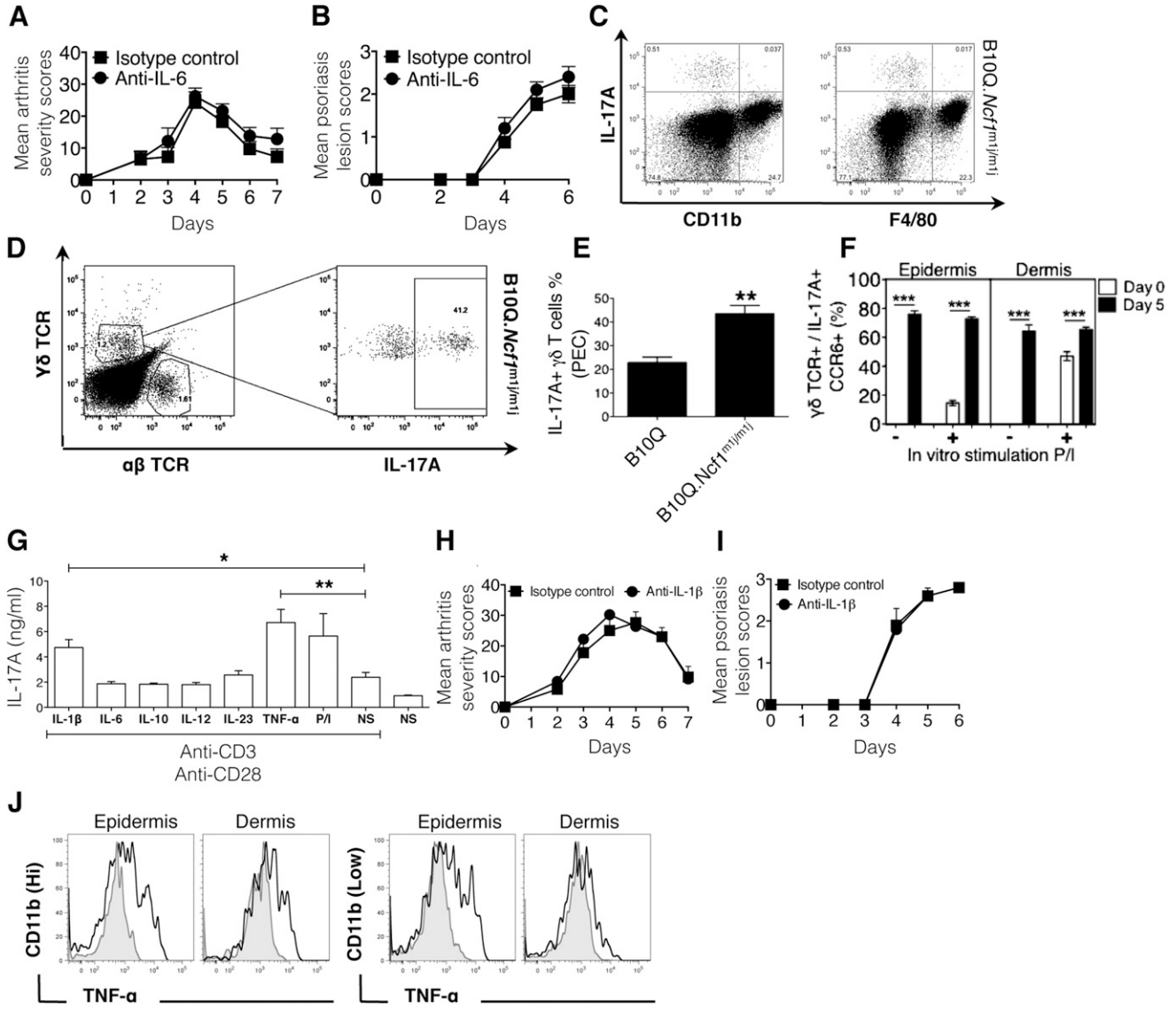


**Fig. S3.** Cytokine expression and neutralization. Mean arthritis (*A*) and Ps lesion (*B*) severity in B10Q.*Ncf1*$^{m1j/m1j}$ mice during IL-6 in vivo neutralization ($n = 4$–5 mice per group). (*C*) Flow cytometry gating for IL-17A, combined with CD11b and F4/80 ($n = 5$ mice per group), showing that IL-17A is not produced by these cell types. (*D*) Gating strategy for IL-17A$^+$ γδ T cells (pregated on F4/80-, CD11b-, and αβ TCR-peritoneal cells) from B10Q.*Ncf1*$^{m1j/m1j}$ mice. (*E*) IL-17A$^+$ γδ T-cell frequencies in the peritoneum of B10Q and B10Q.*Ncf1*$^{m1j/m1j}$ mice. PEC, peritoneal exudate cell. (*F*) Frequency of IL-17A$^+$/γδ TCR$^+$ and IL-17A$^+$/γδ TCR$^+$/C-C chemokine receptor 6 (CCR6)$^+$ cells in the epidermis and the dermis on day 0 and day 5 after mannan injection. P/I, phorbol 12-myristate 13-acetate/ionomycin. (*G*) IL-17A level (nanograms per milliliter) was measured in PEC culture supernatant from mannan-injected mice after in vitro stimulation for 72 h at 37 °C with different cytokines and plate-bound anti-CD3/CD28. Mean arthritis (*H*) and Ps lesion (*I*) severity in B10Q.*Ncf1*$^{m1j/m1j}$ mice during IL-1β in vivo neutralization ($n =$ 5 mice per group). (*J*) MFI (geometric mean) of TNF-α expression in epidermal and dermal CD11b (Low) and CD11b (Hi) cells (gated on Ly6G$^-$ cells) after mannan injection.