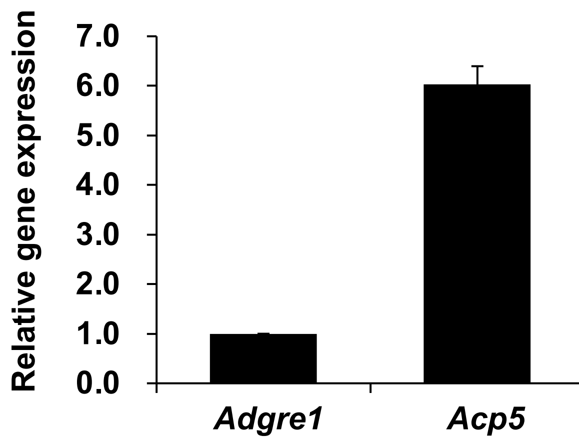
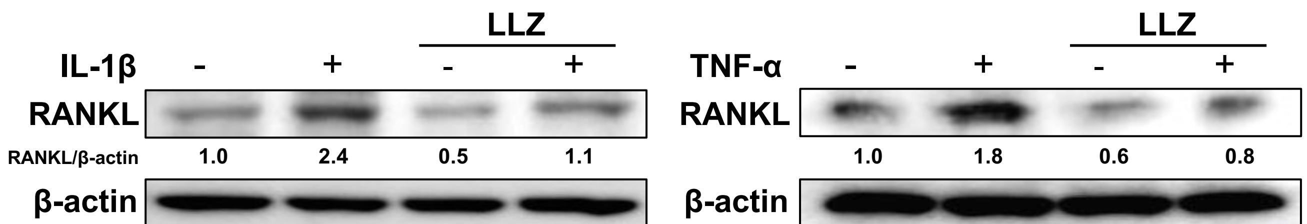


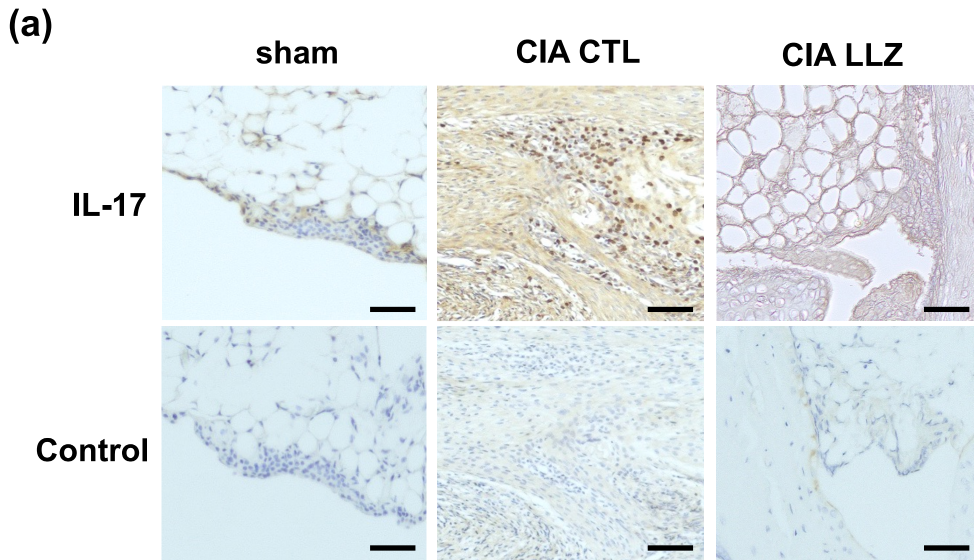
Supplementary figure 1. BMMs were cultured for 10 days with M-CSF (10 ng mL^{-1}) and RANKL (50 ng mL^{-1}) to generate OCs. After pipetting and washing, the adherent cells were subject to the assessment of the expression of *Adgre1* (F4/80) and *Acp5* (TRAP) as OCs and macrophages specific genes, respectively. Their expression (CT value) was compered. Data are expressed as mean ± SD (n =3 independent samples).

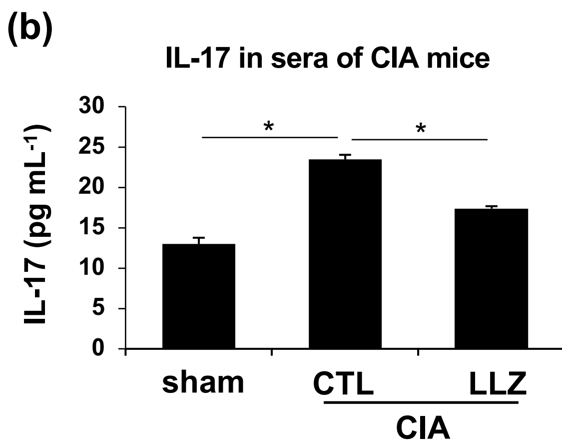
Supplementary figure 1

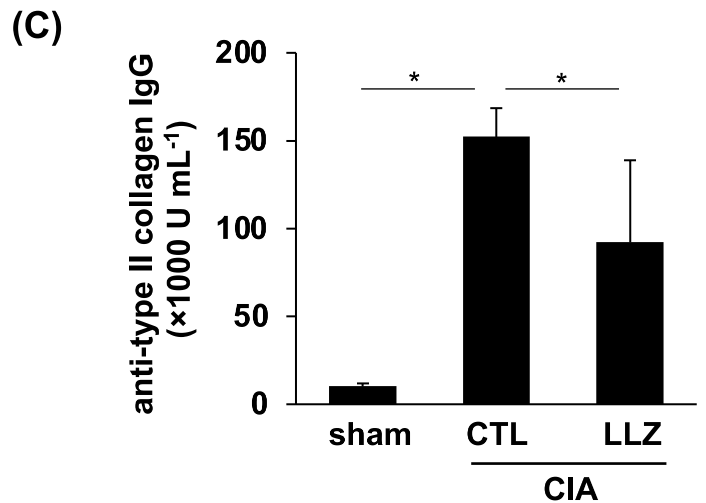


Supplementary figure 2. Synovial fibroblasts isolated from CIA mice were treated for 24 hours with IL-1β at 20 ng mL^{-1} or TNF-α at 20 ng mL^{-1} with or without LLZ at 500 nM. Protein levels of RANKL was detected by Western blotting. β-actin was used as a protein loading control. Relative changes of the band intensities standardized by respective loading controls are indicated.

Supplementary figure 2

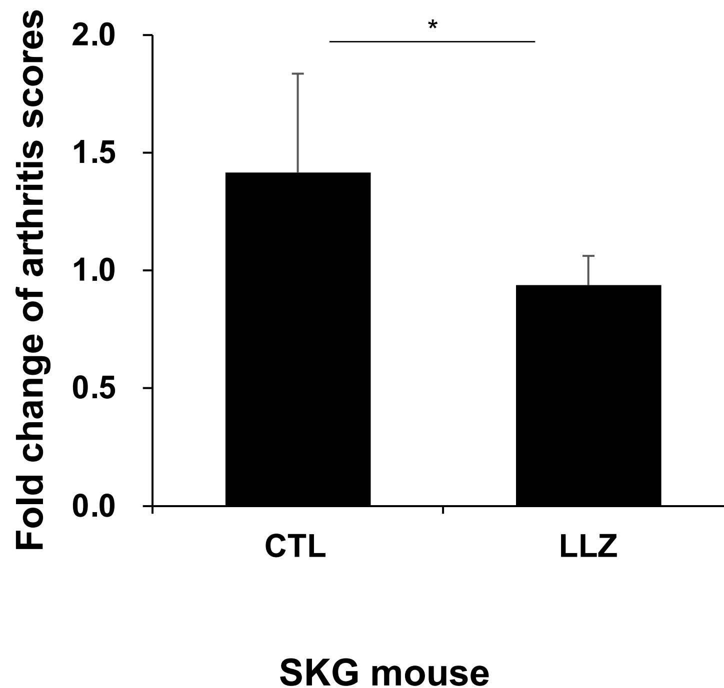






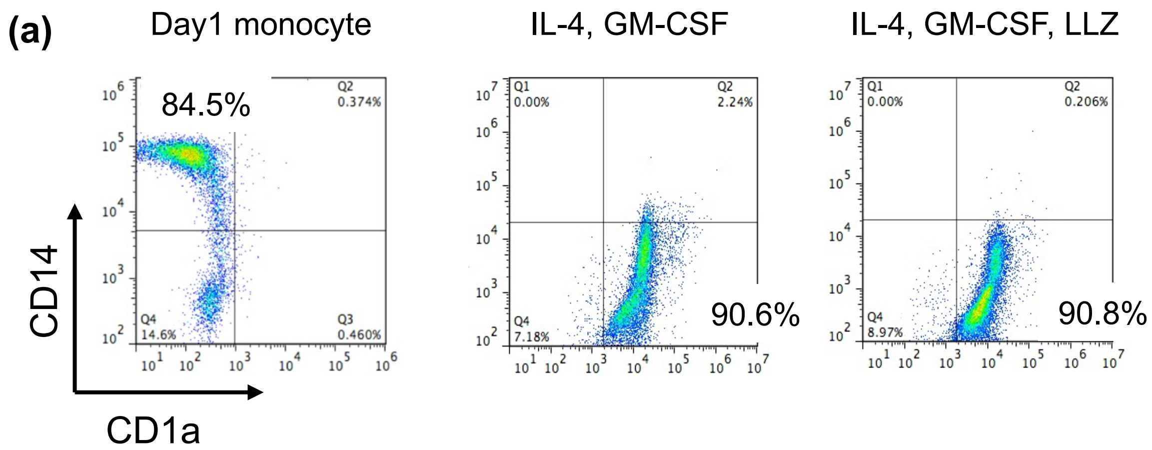
Supplementary figure 3. (a) Th17 cell infiltration to synovial tissues in knee joints of sham and CIA mice treated with or without LLZ. Scale bar, 100 µm. Original magnification x200. Serum concentrations of IL-17A **(b)** and anti-type II collagen IgG **(c)** in respective mice were quantified by ELISA. Data are expressed as mean SD (n=4 for each group). *$P < 0.05$ by one-way ANOVA with Tukey's test.

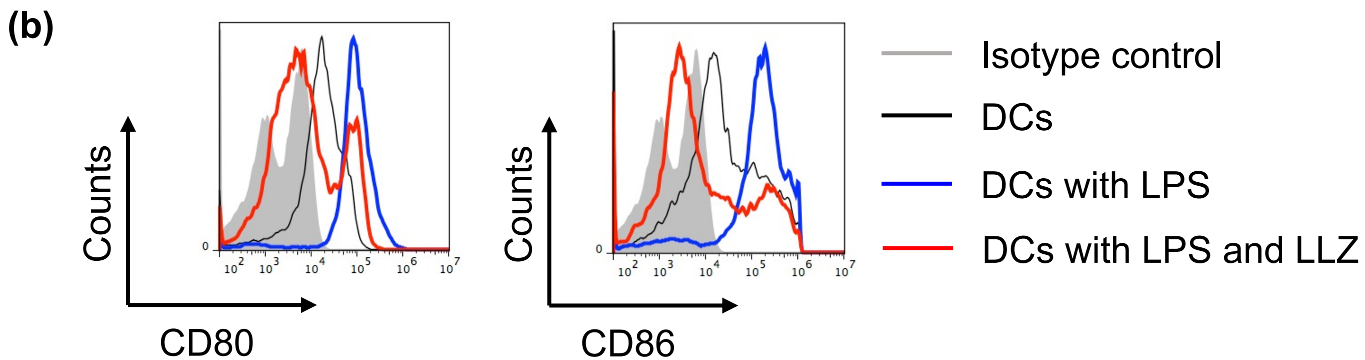
Supplementary figure 3



Supplementary figure 4. SKG mice were treated with mannan (10 mg/mouse) to induce arthritis. Two weeks later, the mice were divided two groups (n=4 for each group). LLZ (20 mg kg^{-1}) or PBS as a vehicle control were intraperitoneally administered every other day for additional 2 weeks. Joint swelling was monitored by inspection and arthritis score was counted at 2 and 4 weeks as in Methods. Fold changes of the arthritis scores at 4 weeks from those at 2 weeks are indicated (mean ± SD). *$P < 0.05$ by Student's *t*-test.

Supplementary figure 4





Supplementary figure 5. (a) Immature DC were differentiated from $CD14^+$ cells from healthy donors in the presence of IL-4 (50 ng mL^{-1}) and GM-CSF (25 ng mL^{-1}) in combination with or without LLZ (5 μM). Immature DCs were identified by a $CD14^-$, $CD1a^+$ fraction. **(b)** Immature DCs were further treated with LPS (100 ng mL-1) in the presence or absence of LLZ (5 μM) for 24 hours. The expression of CD80 and CD86 was analyzed by flow cytometry.

Supplementary figure 5