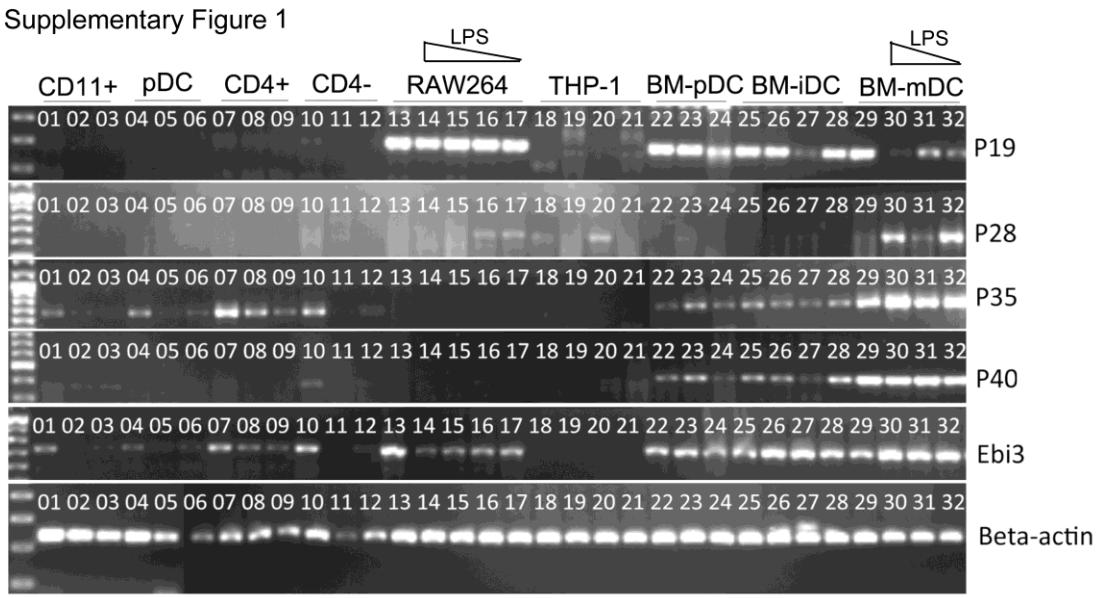
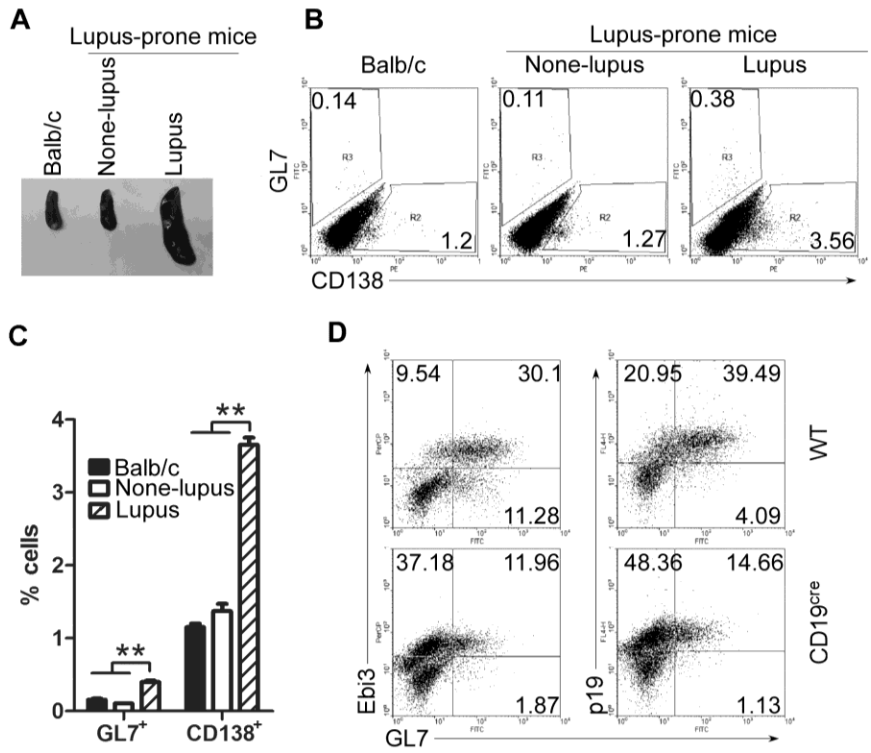


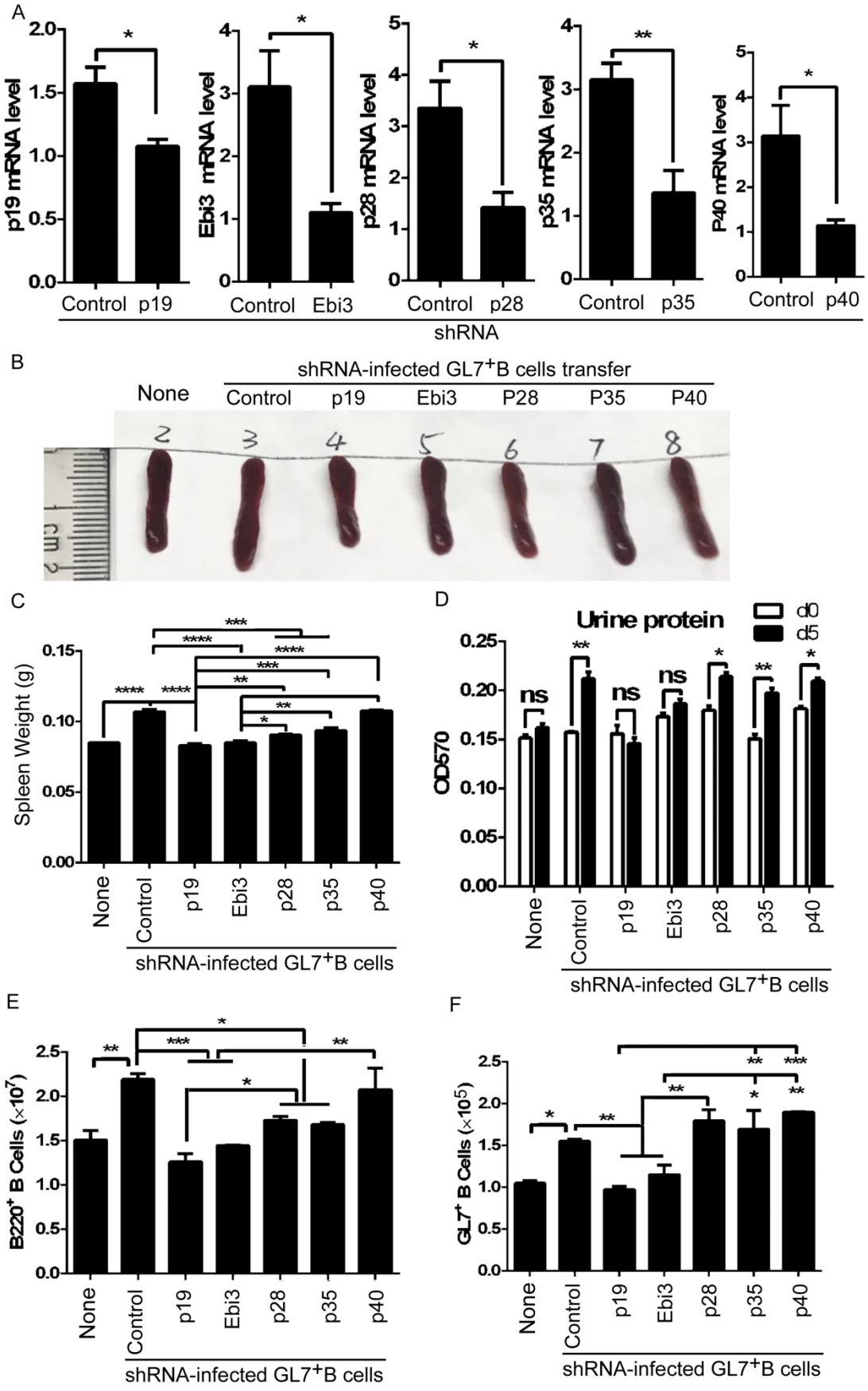
Supplementary Figure 1. IL-39 expression in DCs and Macrophages. $CD11c^+$ myeloid DCs ($CD11^+$), $CD303^+$ plasmacytoid DCs (pDC), $CD4^+$ T cells, $CD8^+$ T cells were sorted using microbeads. RAW264.7 cells: mouse macrophage line, stimulated for 1 day with LPS (10, 5, 2, 1 μg/ml); THP-1 cells: human monocytic cell line. BM-pDCs refer to Lin^-ScaI^+ cells from Bone marrow (BM) stimulated for 9 days with stem cell factor (100 ng/ml), IL-3 (20 ng/ml), M-CSF (50 ng/ml), GM-CSF (5 ng/ml), and FMS-related tyrosine kinase-3 (FLT3) ligand (25 ng/ml); BM-iDC refer to pDCs stimulated for 3 additional days with GM-CSF (100 ng/ml) plus IL-4 (1500 U/ml). BM-mDCs were obtained after overnight stimulation of iDCs with LPS (5, 2, 1 μg/ml). IL-12 family subunits p19, p28, p35, p40 and Ebi3 mRNA expression were analyzed by RT-PCR. The results are representative of three independent experiments.

Supplementary Figure 2



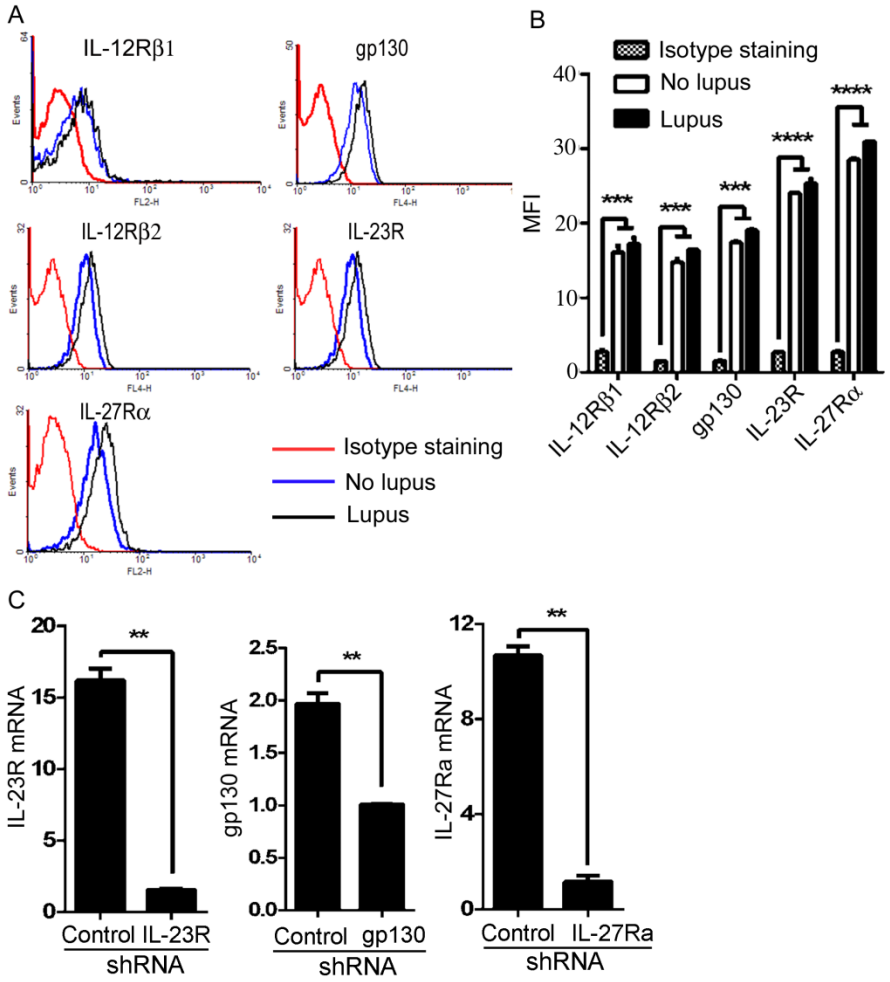
Supplementary Figure 2. Activated $GL7^+$ B cells increased in lupus-like mice or LPS-stimulated B cells. **(A)** The morphology of spleen from 8-month-old female Balb/c and none lupus MRL/+ and lupus-like MRL/lpr mice. The results are representative of 6 spleens per experiment from three independent experiments. **(B, C)** Total B cells from 8-month-old female Balb/c and none lupus MRL/+ and lupus- like MRL/lpr mice were analyzed by FACS. The percentages of GL7 and CD138-expressing total B cells **(B)**, statistical analysis of the percentage **(C)** are shown. **(C)** Data are shown as mean + SEM (n=6) and are representative of three independent experiments. **$P < 0.01$, (two tailed Student's *t*-test). **(D)** Splenic B cells from wild-type and CD19-deficient ($CD19^{cre}$) mice were stimulated for 3 days with LPS (1 μg/ml) and analyzed by the intracellular cytokine-staining assay. Quadrants indicate percentages of p19 and Ebi3-expressing $GL7^-$ and $GL7^+$ B cells. The results are representative of three independent experiments.

Supplementary Figure 3



Supplementary Figure 3. IL-39-deficient $GL7^+$B did not induce inflammation in lupus-like Mice. **(A)** $GL7^+$ B cells were sorted from 8-months-old female lupus-like MRL/lpr mice were sorted by FACS and infected with control shRNA or IL-12 family subunits p28, p35 or p40, p19 or Ebi3-specific shRNA. On day 1 after infection, p28, p35, p40, p19 and Ebi3 mRNA expression were analyzed by qPCR. Data are shown as mean + SEM (n=8) and are representative of three independent experiments. **(B-F)** 5 X 10^6 control, p28, p35, p40, p19 and Ebi3-specific shRNA-infected $GL7^+B220^+$ B cells per mouse were *i.v.* injected into 8-weeks-old female lupus-like MRL/lpr mice (6 mice per group). None cells and control shRNA-infected $GL7^+$B cells-transferred 8-weeks-old female lupus-like MRL/lpr mice were used as none cells transfer (None) and shRNA (Control) control, respectively. **(B, C)** On days 14 after cell transfer, the morphology **(B)** and weight **(C)** of the spleen are shown; **(D)** Proteinuria was measured on day-0 and day-5 after cell transfer; **(E, F)** On days 14 after cell transfer, the absolute numbers of $B220^+$ **(E)** and $GL7^+$ **(F)** B cells per spleen are shown. **(C-F)** Data are shown as mean + SEM (n=6) and are representative of three independent experiments. $*P < 0.05$, $**P < 0.01$, $***P < 0.001$, $****P < 0.0001$ (two tailed Student's *t*-test).

Supplementary Figure 4



Supplementary Figure 4. The expression and depletion of IL-12 subunits on the surface of B cells. **(A, B)** IL-12Rβ1, IL-12Rβ2, IL-23R, gp130 or IL-27R expression **(A)** and the mean fluorescence intensity (MFI) **(B)** on the surface of the splenic B cells from 8-months-old female none lupus MRL/+ and lupus-like MRL/lpr were analyzed by FACS. Isotype antibody was used as the staining control. **(C)** $B220^{+}$ B cells were sorted from 8-weeks-old female C57BL/6 mice by B220 microbeads and infected with control or IL-23R, IL-27Ra, gp130-specific shRNA. On day 2 after infection, IL-23R, IL-27Ra and gp130 mRNA expression was determined using qPCR assay. **(B, C)** Data are shown as mean + SEM (n=5) and are representative of three independent experiments. $^{**}P < 0.01$, $^{***}P < 0.001$, $^{****}P < 0.0001$, (two tailed Student's *t*-test).