Appendix

AKT2 reduces IFNβ1 production to modulate anti-viral responses and systemic lupus erythematosus

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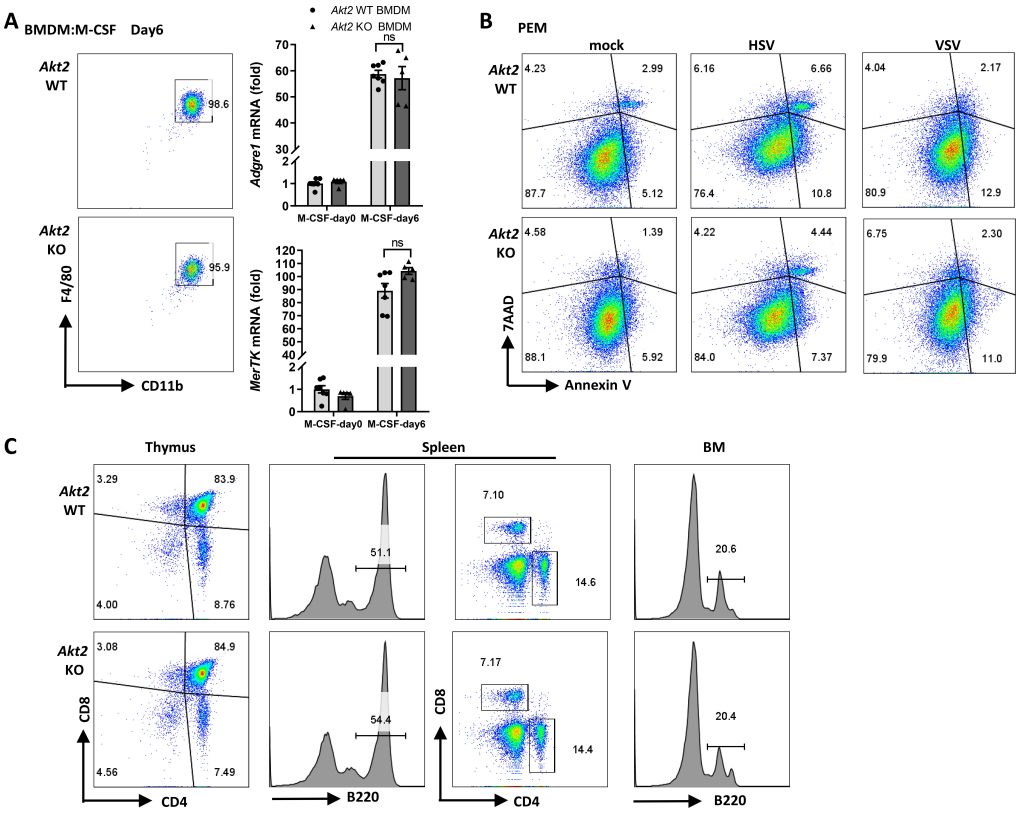


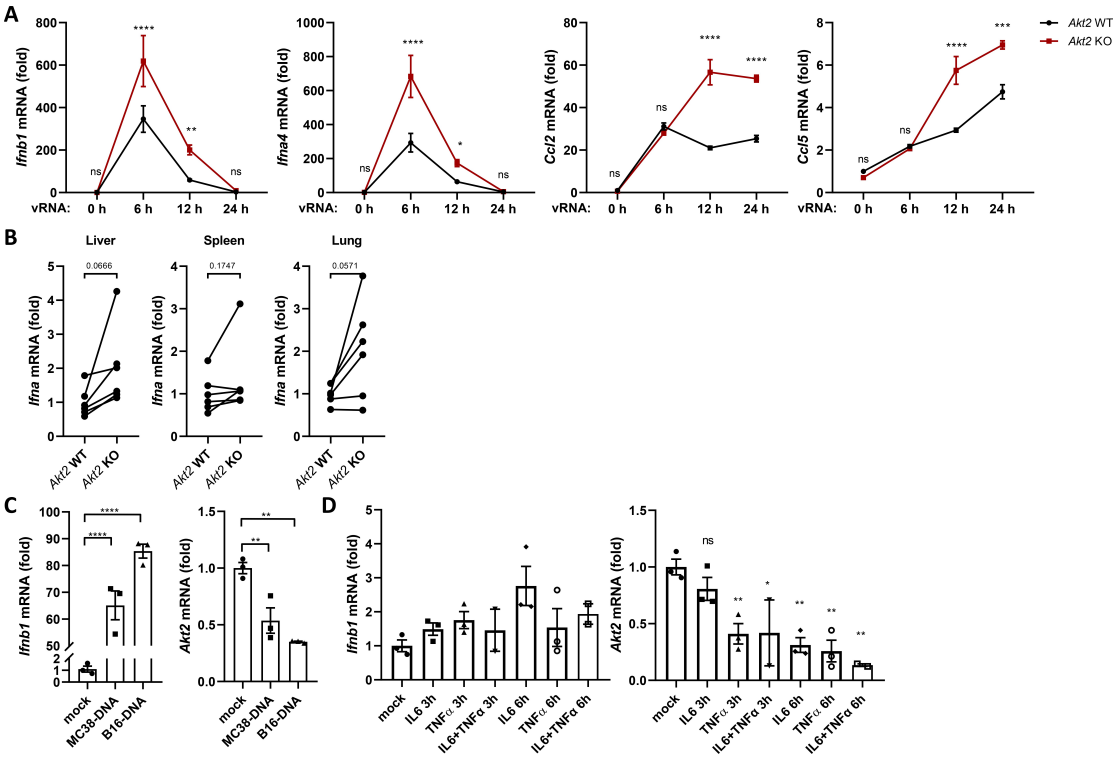
Appendix Figure S1. the absence of *Akt2* has no effect on immunocytes development and the expression and function of *Akt2* in SLE

A FACS analysis of the percentages of $CD11b^+$ $F4/80^+$ BMDMs (left panel), and qRT-PCR analysis for the mRNA expression of *Adgre1* and *MerTK* (right panel) in M-CSF induced BMDMs (n≥5).

B FACS analysis of the 7AAD and Annexin V for determination of the apoptotic WT or *Akt2* KO PEMs which were stimulated with or without HSV-1 or VSV for 8 hours.

C FACS analysis of the percentages of $B220^+$, $CD4^+$ and $CD8^+$ cells in the thymus (left panel), spleen (middle panel) or bone marrow (right panel) from WT and *Akt2* KO mice.

Data information: **p < 0.01 and ns, not significant (P > 0.05); using a two-way ANOVA test (A right panel). Data are pooled from three independent experiments (A right panel) or representative of three independent experiments (A left panel, B, C). Error bars (A, mean ± SEM). Source data are available online for this figure.



Appendix Figure S2. The other effects of *Akt2* and the decreased expression of *Akt2* under the mimic of TME

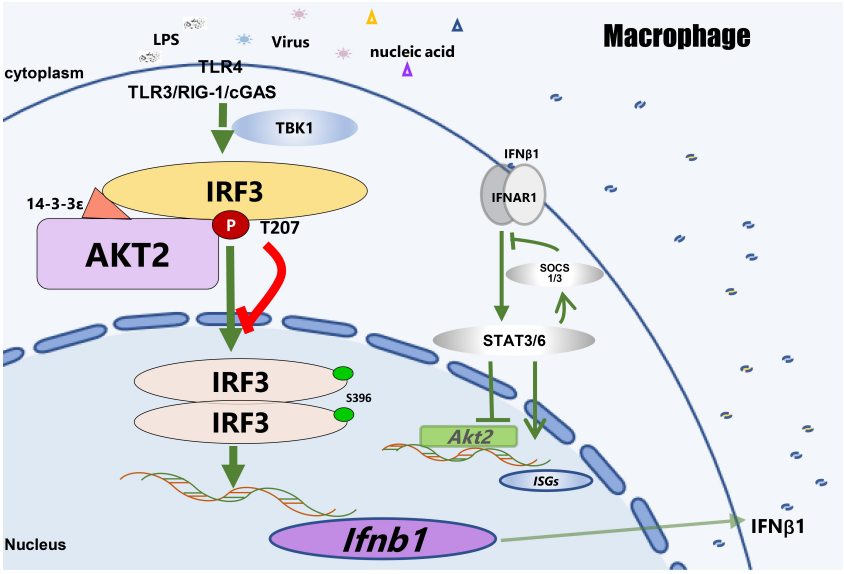
A The mRNA of *Ifnb1*, *Ifna4*, *Ccl2*, *Ccl5* were detected by qRT-PCR in WT and *Akt2* KO PEMs with stimulation of vRNA (500 ng/mL, with Lipo2000) for the indicated time. n=3, respectively.

B qRT-PCR analysis of the *Ifnα* mRNA expression in the liver, spleen and lung of WT (n=6) or *Akt2* KO mice (n=6) 6 hours after the injection of VSV (1×10^6 PFU/g, i.v.).

C *Ifnb1* (n=3) and *Akt2* (n=3) mRNA were detected by qRT-PCR in PEMs (n=3) that were transfected with MC38 and B16 genome DNA (0.5 μg/mL) with Lipo2000.

D *Ifnb1* and *Akt2* mRNA were examined by qRT-PCR in PEMs (n=2 or 3) after TNF-α (20 ng/mL) or/and IL-6 (20 ng/mL) treatment for 3 or 6 hours.

Data information: *p < 0.05, **p < 0.01, ****p < 0.0001 and ns, not significant (P > 0.05); using a paired *t*-test (B), one-way ANOVA test (C and D) or two-way ANOVA test (A). Data are from two or three independent experiments (A, C, D) or representative of three independent experiments (B). Error bars (A, C, D, mean ± SEM). Source data are available online for this figure.



Appendix Figure S3. A schematic diagram of the AKT2 function on suppressing IFNβ1 induction.

Together with 14-3-3ε, AKT2 binds IRF3 and phosphorylates IRF3 at Thr207 to restrain IRF3 nuclear translocation in latent macrophage. Once the virus or nucleic acids were recognized by PRRs, IFNβ1 is induced and downregulates *Akt2*, leading to the translocation of IRF3 into the nucleus and triggering a positive feedback regulation of IFNβ1.