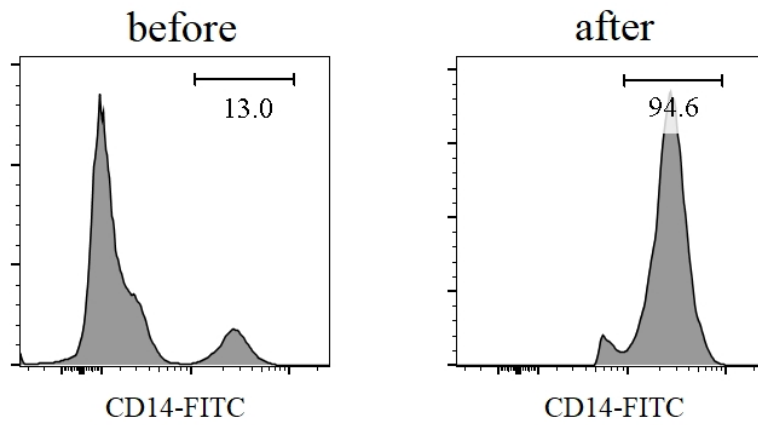
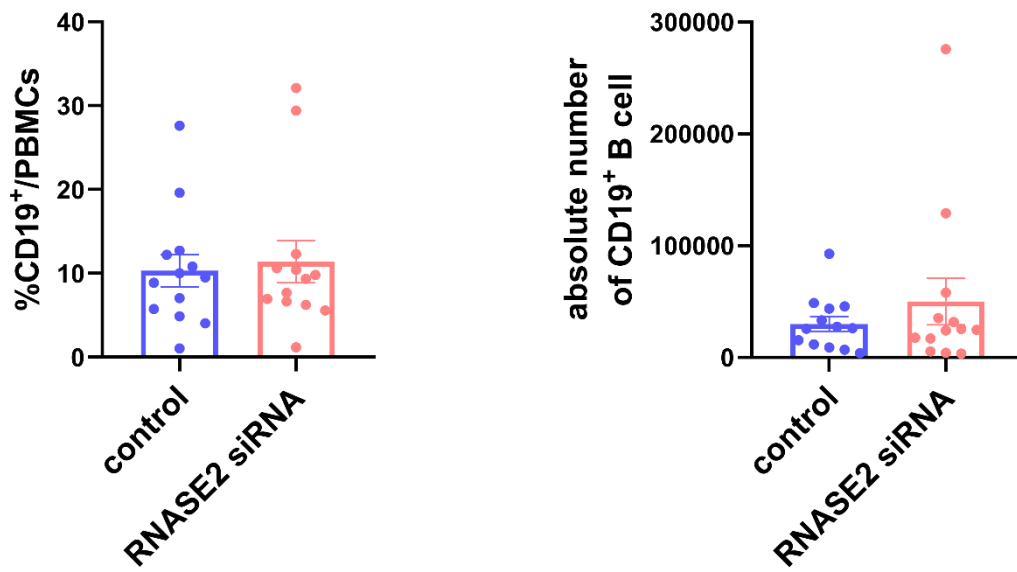


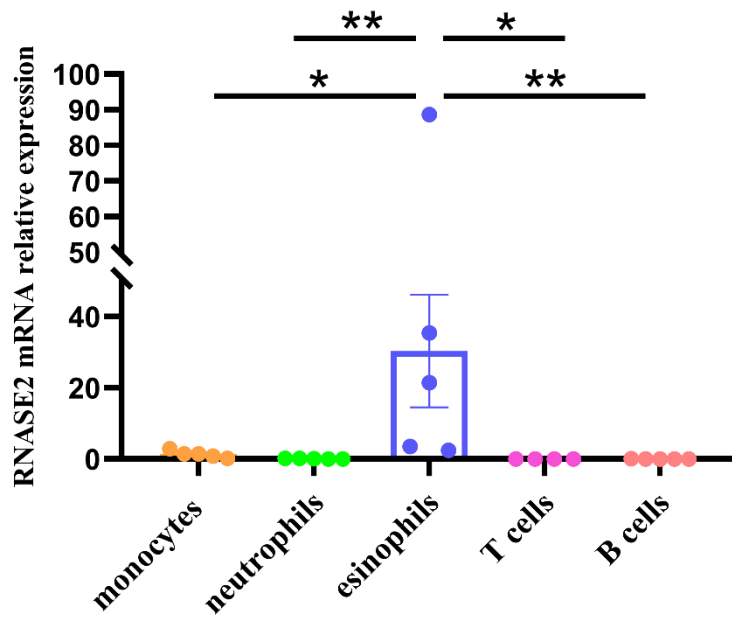
Supplementary figure 1. RNASE2 failed to modulate ABCs in B cell cultures. A, B cells were negative sorted from lupus PBMCs using magnetic beads, then CD19⁺ B cells were verified up to 90% purity by flow cytometry. B, B cells were cultured with the stimulation of anti-CD40 and anti-IgM F(ab')₂. Adding RNASE2 siRNA did not change the percentage of CD11c⁺T-bet⁺ B cells.



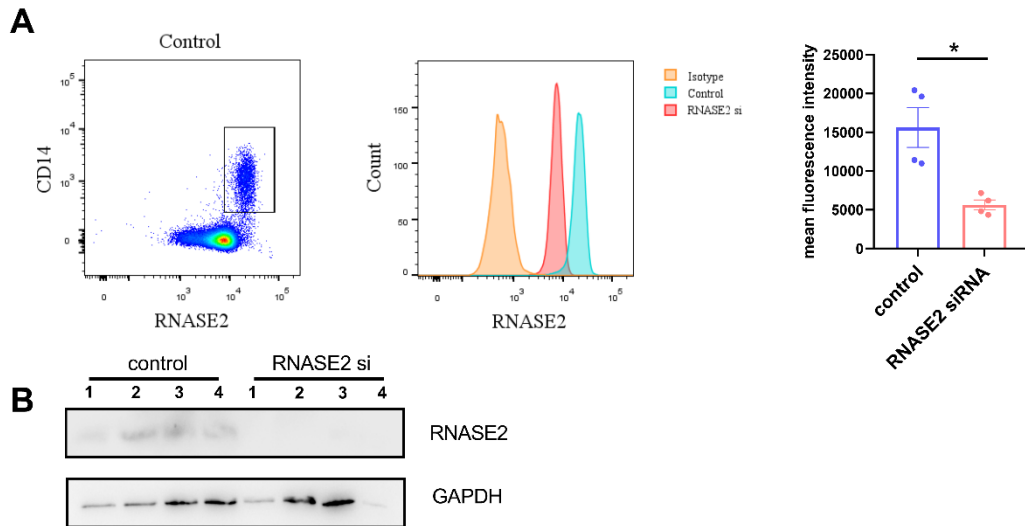
Supplementary figure 2. Purification of monocytes using magnetic beads. CD14⁺ monocytes were positively sorted using magnetic beads, and an over 90% purity was detected by flow cytometry.



Supplementary figure 3. RNASE2 silence effect on total B cells. The proportion and absolute number of total B cells in PBMCs showed no significant difference after RNASE2 silencing by flow cytometry (n=13)



Supplementary figure 4. RNASE2 was mainly derived from eosinophils in normal subjects. The mRNA expression level of RNASE2 in monocytes (CD45⁺CD14⁺), neutrophils (SSC^{high}CD45⁺CD14⁻CD16⁺), T cells (CD45⁺CD3⁺) and B cells (CD45⁺CD19⁺) were almost undetectable. *p < 0.05, **p < 0.01.



Supplementary figure 5. RNASE2 protein level decreased in SLE monocytes after RNASE2 silence. A, Decreased mean fluorescence intensity of RNASE2 protein level in CD14⁺ monocytes after RNASE2 silence by flow cytometry (n=4). B, Reduced RNASE2 protein level after RNASE2 silence by western blot (n=4).

Supplementary table 1. siRNA sequences of RNASE2 and non-targeting control.

	sense	antisense
RNASE2-1	5'-GACCUGUCCUAGUAACAAA-3'	5'-UUUGUUACUAGGACAGGUC-3'
RNASE2-2	5'-CCCAUCUCUCCAUAUACUU-3'	5'-AAGUAUAUGGAGAGAUGGG-3'
RNASE2-3	5'-UACCUGGGCUCAAUGGUUU-3'	5'-AAACCAUUGAGCCCAGGUA-3'
RNASE2-4	5'-CAGUUCACCUGGAUAGAAU-3'	5'-AUUCUAUCCAGGUGAACUG-3'
Non-targeting siRNA	5'-UUCUCCGAACGUGUCACGU-3'	5'-ACGUGACACGUUCGGAGAA-3'

Supplementary table 2. Primers for mRNA detection.

gene	GenBank number	Primer sequence
RNASE2	NM_002934	F: 5'-ACCTCACAACCTCCAAGTCCA-3'
		R: 5'-GGATACTGTGGAGGGTCTCG-3'
IL-10	NM_000572.3	F: 5'-TACGGCGCTGTCATCGATTT-3'
		R: 5'-ACTCATGGCTTTGTAGATGCCT-3'
GAPDH	NM_002046	F: 5'-ATGGGGAAGGTGAAGGTCG-3'
		R: 5'-GGGGTCATTGATGGCAACAATA-3'

Supplementary table 3. Demographics of the patients.

Characteristics	SLE (n=60)	RA (n=20)	SS (n=20)
Age, mean±SD (years)	39.5±13.3	58.4±14.0	46.9±13.0
Sex, no. male/female	4/56	3/17	1/20
Disease duration (months)	8.7±9.0	—	—
SLEDAI score	6.1±4.0	—	—
BILAG score	5.3±3.7	—	—
Clinical Characteristics			
Malar Rash	35(58.3%)	—	—
Photosensitivity	15 (25%)	—	—
Oral ulcers	8 (13.3%)	—	—
Arthritis	34 (56.7%)	—	—
Pleuritis or Pericarditis	10 (16.7%)	—	—
Renal Disorder	45 (75%)	—	—
Neurologic Disorder	2 (3.3%)	—	—
Hematologic Disorder	13 (21.6%)	—	—
Laboratory test			
WBC, mean±SD (x10 ⁹ /L)	6.5±1.7	—	—
IgG, mean±SD (g/L)	10.0±2.6	—	—
IgM, mean±SD (g/L)	1.0±0.2	—	—
C3, mean±SD (g/L)	0.9±0.3	—	—
C4, mean±SD (g/L)	0.1±0.0	—	—
ESR (mm/h)	41.8±16.8	—	—
CRP (mg/L)	31.7±15.1	—	—
Urine protein (mg/24h)	1067.0±398.4	—	—
Positive ANA, n (%)	56(93.3%)	—	—