## Supplementary data

**Supplementary Fig. S1:** Increased levels of AIM2 in RA FLSs. The expression of AIM2 in RA FLSs and HC FLSs was measured by RT-qPCR (**A**) and western blot (**B**). Data show the mean  $\pm$  SD from at least 3 independent experiments. \*P < 0.05 versus HC.

**Supplementary Fig. S2:** The efficiency of AIM2 knockdown. RA FLSs were subjected to RT-qPCR analysis (A) and Western blotting (B). A representative blot is shown. The data show the mean  $\pm$  SD of samples from at least 3 independent experiments. \*P < 0.05, \*\*P < 0.01 vs. CTR.

**Supplementary Fig. S3:** Immunohistochemical staining was used to measure the expression of IL-6, IL-8, CCL2, MMP-1, MMP-3, MMP-13 in synovial tissues from CIA mice. Representative images were from normal mice, DMSO-treated mice, and Myr-treated mice (original magnification, ×200).

**Supplementary Fig. S4:** Immunohistochemical staining was used to measure the expression of p-AKT in synovial tissues from mice. Representative images were from normal mice, DMSO-treated mice, and Myr-treated mice (original magnification, ×200).

**Supplementary Fig. S5.** Detection of surface molecules and phagocytosis of FLSs. The surface molecules CD11b,  $Fc\gamma RII$ , and  $Fc\gamma RII$  receptor were detected by flow cytometry(A). Phagocytosis of FLSs were evaluated by fluorescent bead uptake assay. Representative images were shown(B) (original magnification, ×100).







## Fig. S3



## Fig. S4



Fig. S5



В



| gene    | sequences |                         |  |
|---------|-----------|-------------------------|--|
| AIM2    | Forward   | AGCAAGATATTATCGGCACAGTG |  |
|         | Reverse   | GTTCAGCGGGACATTAACCTT   |  |
| β-actin | Forward   | TCAAGATCATTGCTCCTCCTGAG |  |
|         | Reverse   | ACATCTGCTGGAAGGTGGACA   |  |
| IL-1β   | Forward   | ATGATGGCTTATTACAGTGGCAA |  |
|         | Reverse   | GTCGGAGATTCGTAGCTGGA    |  |
| IL-6    | Forward   | ACTCACCTCTTCAGAACGAATTG |  |
|         | Reverse   | CCATCTTTGGAAGGTTCAGGTTG |  |
| IL-8    | Forward   | ACTGAGAGTGATTGAGAGTGGAC |  |
|         | Reverse   | AACCCTCTGCACCCAGTTTTC   |  |
| CCL2    | Forward   | CAGCCAGATGCAATCAATGCC   |  |
|         | Reverse   | TGGAATCCTGAACCCACTTCT   |  |
| MMP-1   | Forward   | CTCTGGAGTAATGTCACACCTCT |  |
|         | Reverse   | TGTTGGTCCACCTTTCATCTTC  |  |
| MMP-3   | Forward   | AAAGACAGGCACTTTTGGCG    |  |
|         | Reverse   | CTTCATATGCGGCATCCACG    |  |
| MMP-9   | Forward   | TGTACCGCTATGGTTACACTCG  |  |
|         | Reverse   | GGCAGGGACAGTTGCTTCT     |  |
| MMP-13  | Forward   | ACTGAGAGGCTCCGAGAAATG   |  |
|         | Reverse   | GAACCCCGCATCTTGGCTT     |  |

Table S1: Sequences of primers for RT-qPCR.

## Table S2: The sequences of siRNA oligonucleotides.

| Table S2: The sequences of siRNA oligonucleotides. |         |                     |  |
|--|---------|---------------------|--|
| AIM2   | siRNA-1 | GCAACGTGCTGCACCAAAA |  |
|  | siRNA-2 | GCAGGAATCTATCAGAGAA |  |
|  | siRNA-3 | GAAGCGCTGTTTGCCAGTT |  |

| Table S4. Demographic and clinical features of patients with active RA |                 |  |  |  |
|--|-----------------|--|--|--|
| Age, yrs (mean $\pm$ SD)   | 56.67±4.63      |  |  |  |
| Female: Male   | 8:2             |  |  |  |
| Disease duration, yrs (mean±SD)  | 11.90±6.92      |  |  |  |
| Rheumatoid factor-positive (%)   | 90              |  |  |  |
| Anti-CCP-positive (%)  | 90              |  |  |  |
| DAS28 (mean±SD)  | $6.09{\pm}1.20$ |  |  |  |
| Previous medications (%)   |                 |  |  |  |
| Prednisone (<10mg/d)   | 30              |  |  |  |
| Methotrexate   | 70              |  |  |  |
| Leflunomide  | 10              |  |  |  |
| Sulfasalazine  | 0               |  |  |  |
| Hydroxychloroquine   | 20              |  |  |  |
| NSAIDs   | 50              |  |  |  |

| Table S5. Demographic and clinical features of health control subjects |             |  |  |
|--|-------------|--|--|
| Age, yrs (mean $\pm$ SD)   | 37.55±13.33 |  |  |
| Female: Male   | 3:7         |  |  |
| Previous medications (%)   |             |  |  |
| Prednisone (<10mg/d)   | 0           |  |  |
| Methotrexate   | 0           |  |  |
| Leflunomide  | 0           |  |  |
| Sulfasalazine  | 0           |  |  |
| Hydroxychloroquine   | 0           |  |  |
| NSAIDs   | 80          |  |  |