

YMTHE, Volume 27

## **Supplemental Information**

**Lipidoid-siRNA Nanoparticle-Mediated**

**IL-1 $\beta$  Gene Silencing for Systemic Arthritis**

**Therapy in a Mouse Model**

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## Supplemental Information

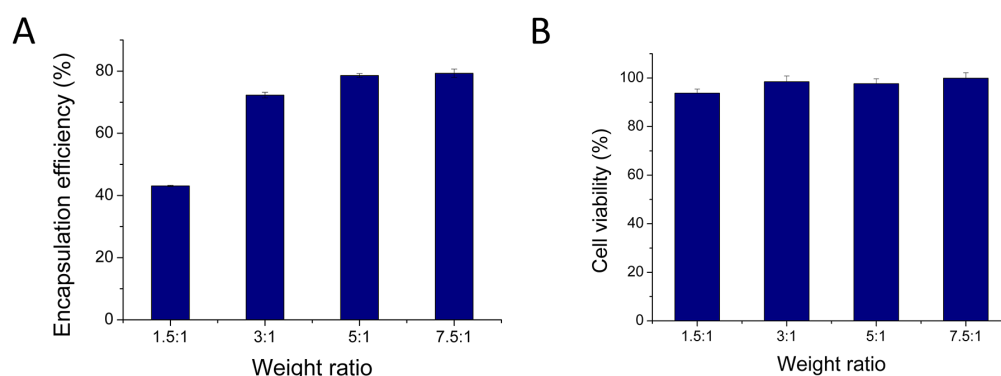


Figure S1. (A) Encapsulation efficiency of FS14-NP for siRNA at different weight ratios of S14 to siRNA, mean  $\pm$  SD (n=3); (B) Cell viability of FS14-NP/siRNA at indicated weight ratios after 24h, mean  $\pm$  SD (n=5)

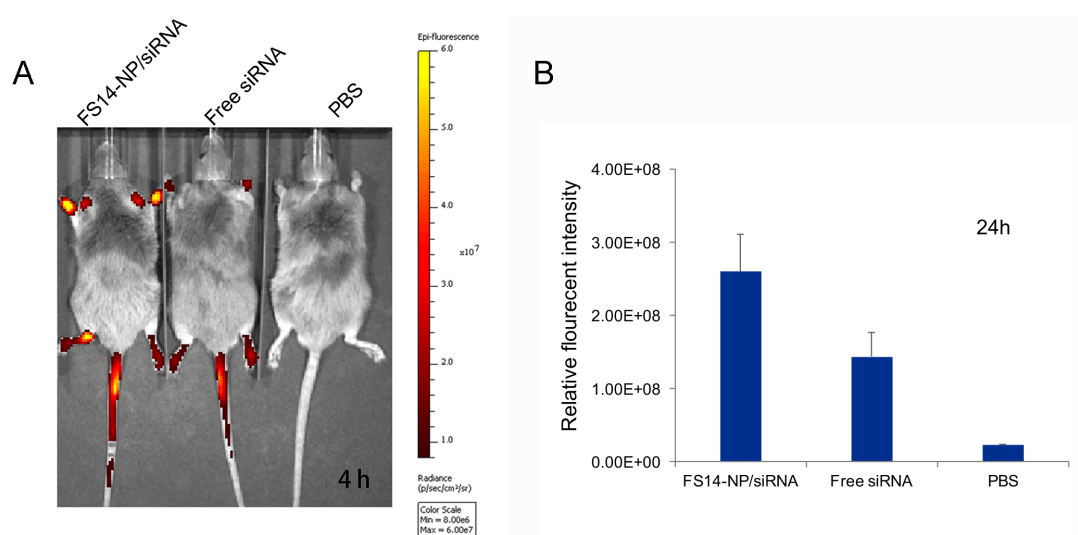


Figure S2. FS14-NP/siRNA accumulation in inflammatory joints. (A) In-vivo imaging showing accumulation of FS14-NP/Cy5.5-siRNA in arthritic joints at 4 h post injection. (B) Quantitative evaluation of the relative fluorescent intensity of the paws after 24 hours. CAIA mice were injected i.v. with FS14-NP/Cy5.5-siRNA (FS14-NP/siRNA), Free Cy5.5-siRNA (Free siRNA) and PBS. The *in vivo* accumulation of FS14-NP/siRNA in arthritic joints was imaged by IVIS at 4 h and 24 h post injection on day 7.

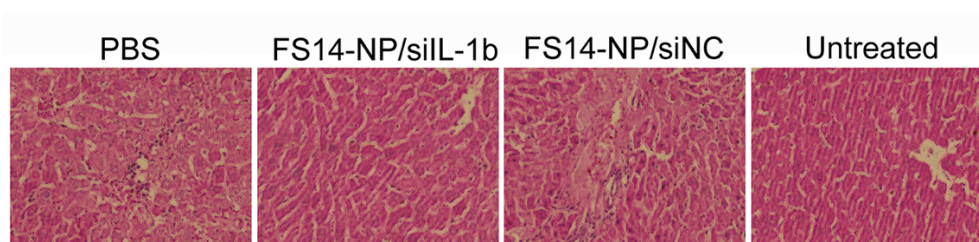


Figure S3. Representative images of H&E staining of liver sections from mice treated with PBS, FS14-NP/siIL-1b, FS14-NP/siNC and comparing to untreated mice.

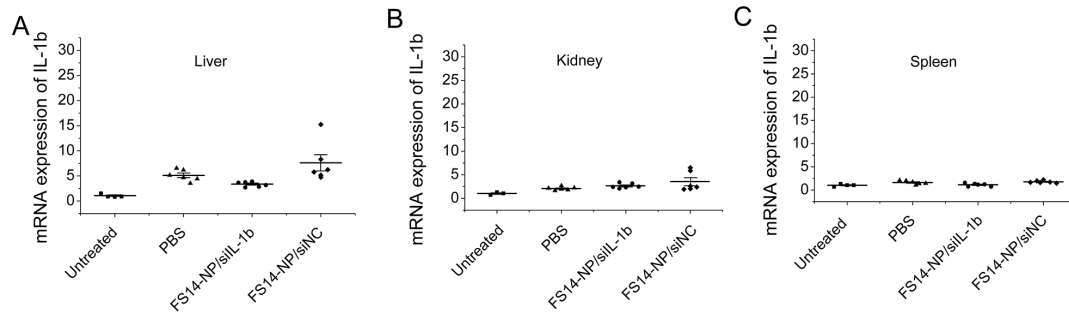


Figure S4. The expression of IL-1 $\beta$  in non-target tissues. Organs were isolated at day 9 and homogenized, the mRNA expression of IL-1 $\beta$  in (A) liver, (B) kidney and (C) spleen were measured by real-time PCR and normalized to housekeeping gene GAPDH.

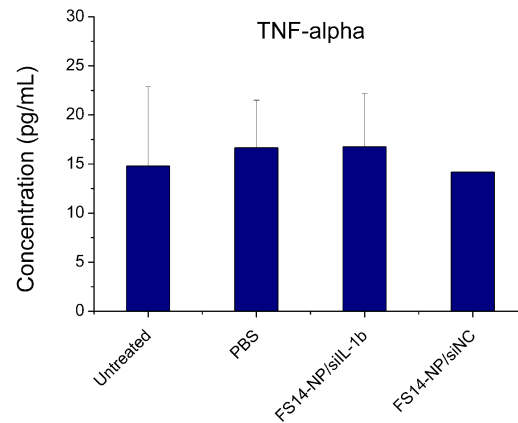


Figure S5. Systemic expression of TNF- $\alpha$ . The expression TNF- $\alpha$  in serum was measured in serum using an Inflammatory Cytokine 4-Plex Mouse Panel kit. Data are presented as mean  $\pm$  SD (n=6).

Table S1. Primers used for qPCR in the study.

Target (mouse)	Sequence
IL-1 $\beta$	F 5'- CAGGCTCCGAGATGAACAAC -3'
	R 5'- GGTGGAGAGCTTTCAGCTCATA -3'
TNF- $\alpha$	F 5'- GTAGCCCACGTCGTAGGTAA -3'
	R 5'- ATCGGCTGGCACCAGT -3'
MMP-3	F 5'- ATGAAAATGAAGGGTCTTCCGG -3'
	R 5'- GCAGAAGCTCCATACCAGCA -3'
MMP-13	F 5'- ATGCATTGAGCTATCCTGGCCA -3'
	R 5'- AAGATTGCATTTCTCGGAGCCTG -3'
GAPDH	F 5'- GACGGCCGCATCTTCTTG -3'
	R 5'- GCGCCCAATACGGCCAAATC -3'