

OMTN, Volume 22

Supplemental Information

TWIST1-MicroRNA-10a-MAP3K7 Axis

Ameliorates Synovitis of Osteoarthritis

in Fibroblast-like Synoviocytes

Jiajie Tu, Wei Huang, Weiwei Zhang, Jiawei Mei, Zhiying Yu, and Chen Zhu

Supplementary figures

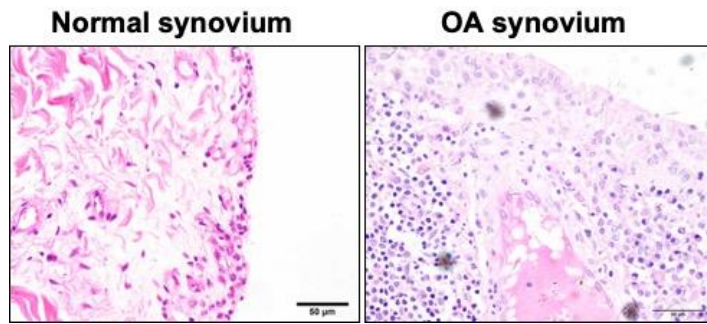


Figure S1. H&E staining of normal and OA synovium

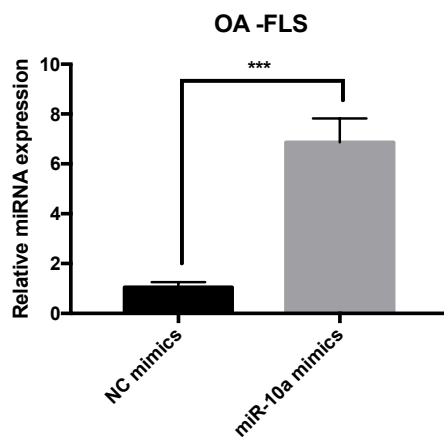


Figure S2. A significant up-regulation of miR-10a expression was detected by qRT-PCR in OA-FLS. Data represent means \pm SEM (n=3); ***p < 0.001 determined by the Student's t-test.

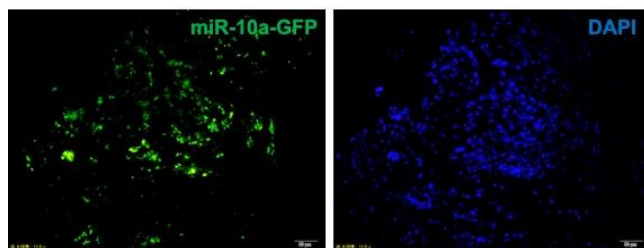


Figure S3. The transfection efficiency of miR-10a lentivirus in the transplanted synovium.

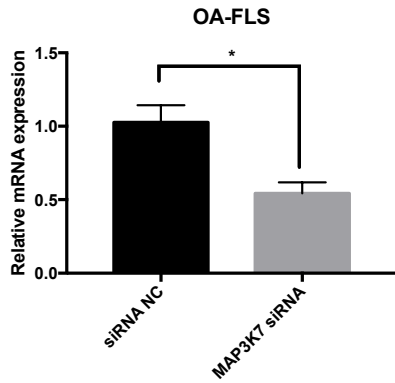


Figure S4. siRNA was used to knockdown the expression of MAP3K7. Data represent means \pm SEM (n=3); *p < 0.05 determined by the Student's t-test.

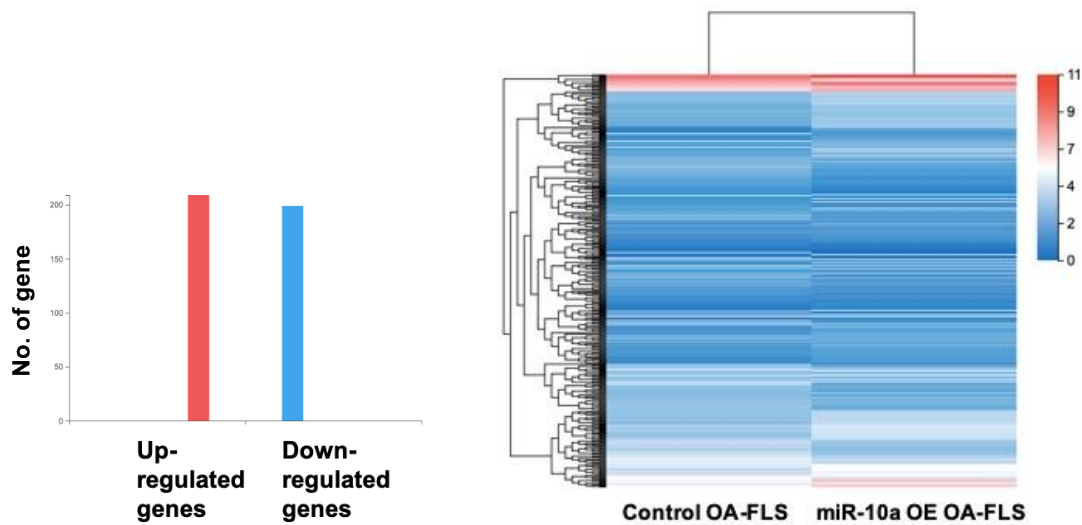


Figure S5. The transcriptomes of miR-10a-overexpressing OA-FLS and control OA-FLS by RNA-seq (The up- and down-regulated genes by miR-10a in OA-FLS were listed as a supplementary excel table).

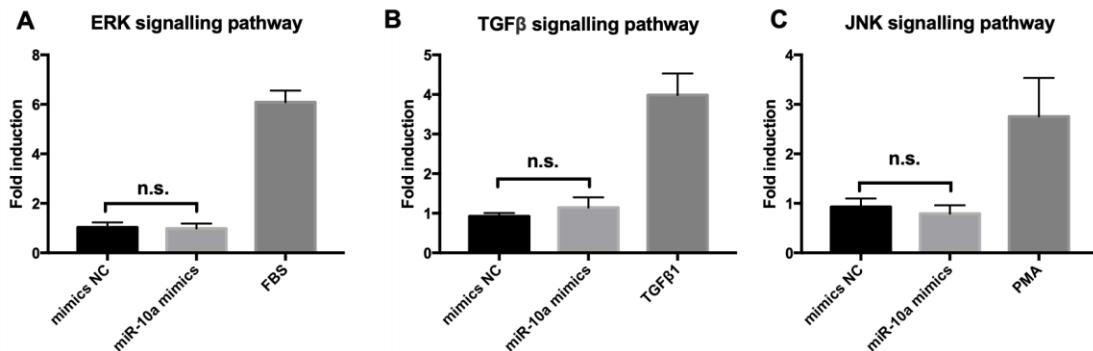


Figure S6. miR-10a didn't affect (A) ERK (B)TGF β , or (C) JNK pathway in OA-FLS. Data represent means \pm SEM (n=3); n.s. p > 0.05 determined by the Student's t-test.

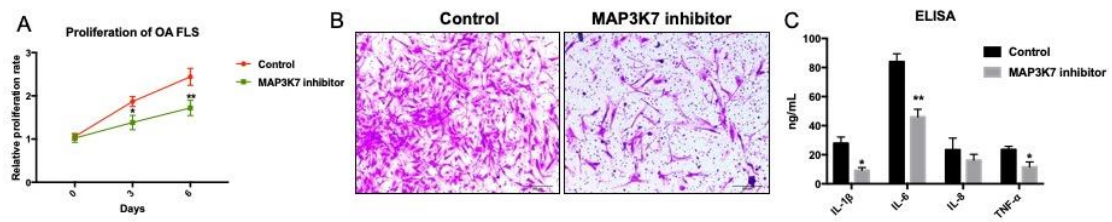


Figure S7. The effects of specific MAP3K7 inhibitor (Takinib) on (A) proliferation, (B) migration and (C) production of pro-inflammatory cytokines of OA-FLS. Data represent means \pm SEM (n=3); *p < 0.05 and **p < 0.01 determined by the Student's t-test.

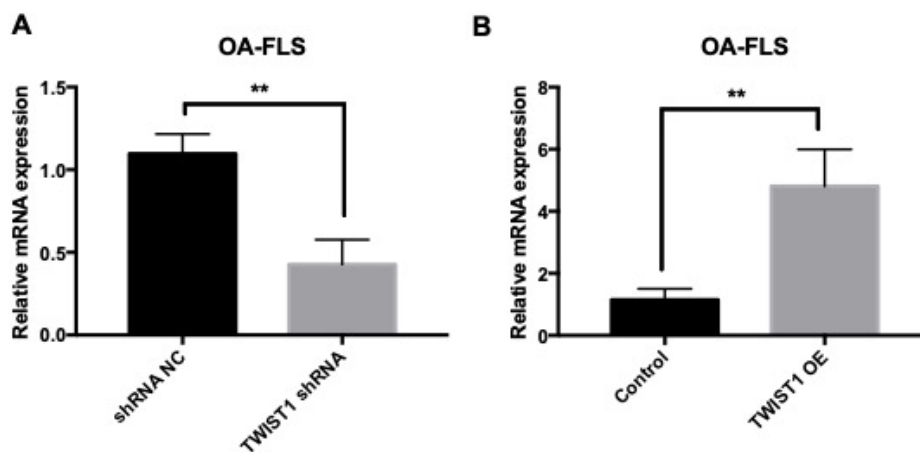


Figure S8. The knockdown and overexpression of TWIST1 in OA-FLS. Data represent means \pm SEM (n=3); *p < 0.05 determined by the Student's t-test.

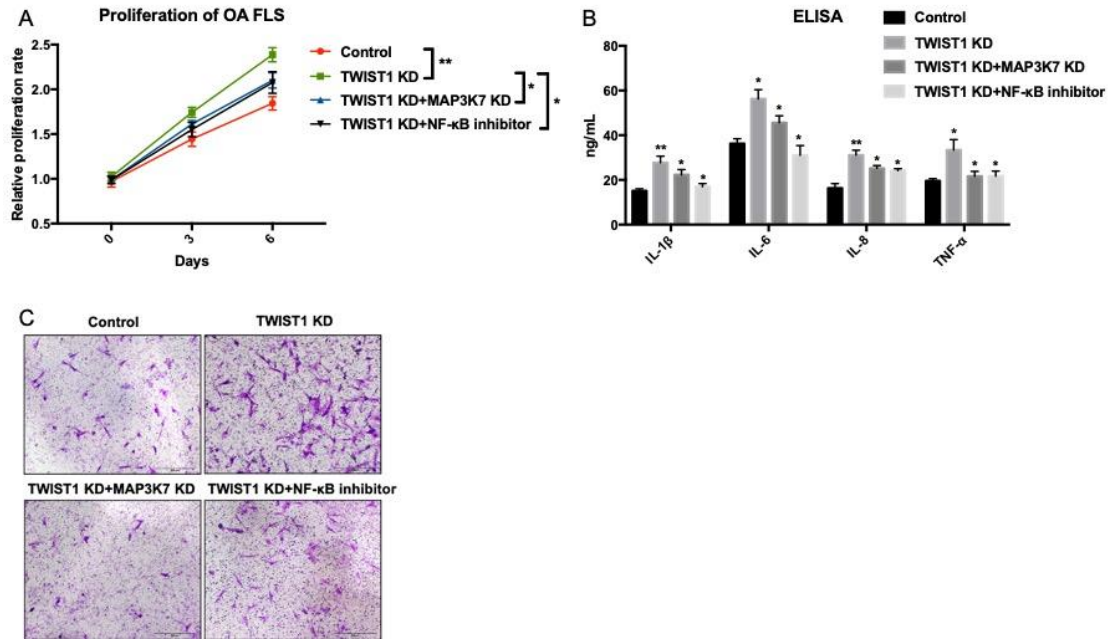


Figure S9. Blockage of MAP3K7 or NF- κ B could reverse the TWIST1 knockdown-induced pro-inflammatory effects, including proliferation (A), production of inflammatory cytokines (B) and migration (C), in OA-FLS. Data represent means \pm SEM (n=3); *p < 0.05 determined by the Student's t-test.

qPCR Primer list

ACAN forward primer: TCCCCTGCTATTTTCATCGAC

ACAN reverse primer: CCAGCAGCACTACCTCCTTC

α -SMA forward primer: GGAATCCTGTGAAGCAGCTC

α -SMA reverse primer: ACAATGGATGGGAAAACAGC

COL2A1 forward primer: CAGGACCAAAGGGACAGAAA

COL2A1 reverse primer: TTTCACCTTTGTCACCACGA

MMP2 forward primer: ACCCAGATGTGGCCAACTAC

MMP2 reverse primer: GAGCAAAGGCATCATCCACT

MMP3 forward primer: GAAGCTGGACTCCGACACTC

MMP3 reverse primer: AAGGTGGGTTTTTCCTCCACT

MMP9 forward primer: CATCGTCATCCAGTTTGGTG

MMP9 reverse primer: AGGGACCACAACCTCGTCATC

MMP13 forward primer: TTGAGCTGGACTCATTGTCG

MMP13 reverse primer: CGCGAGATTTGTAGGATGGT

ADAMTS4 forward primer: CTGCAGTACCAGTGCCATGT

ADAMTS4 reverse primer: AGAGAGGCCAGCAGTAGCAG

ADAMTS5 forward primer: ACCTCTTTCTGGAGCACGAA

ADAMTS5 reverse primer: CACACACTTGCTTGCAGGAT