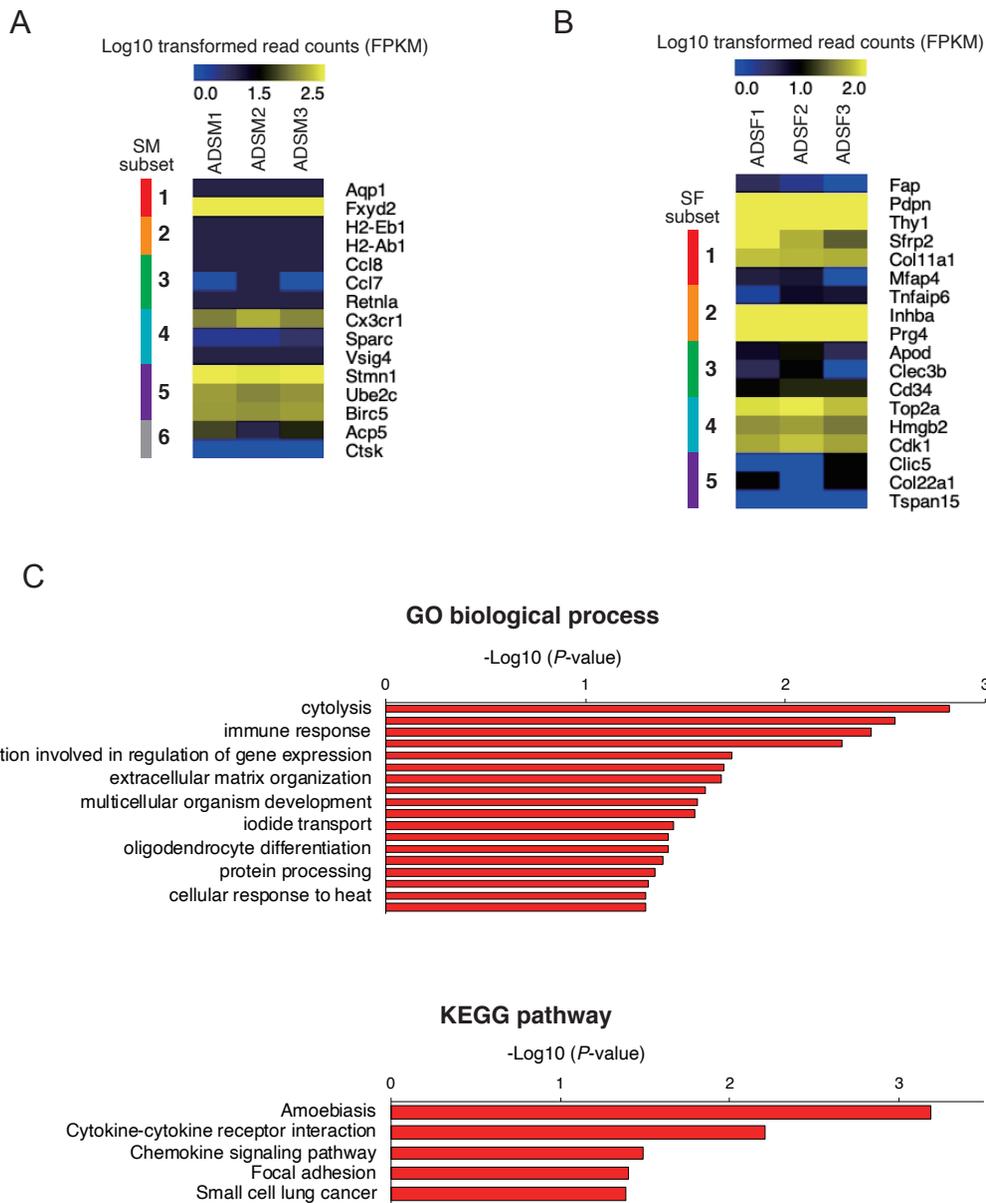


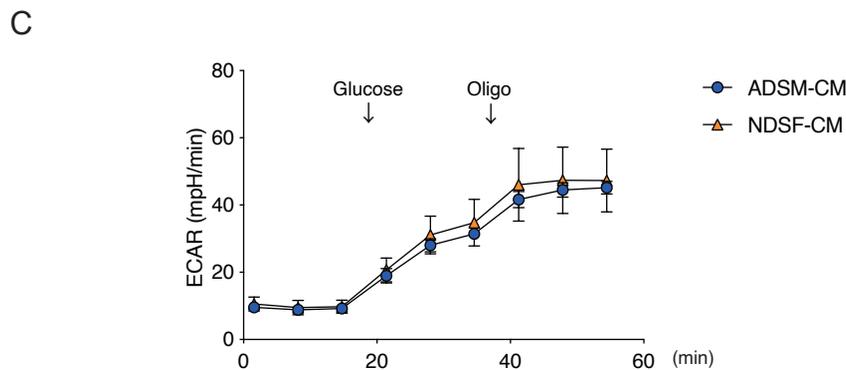
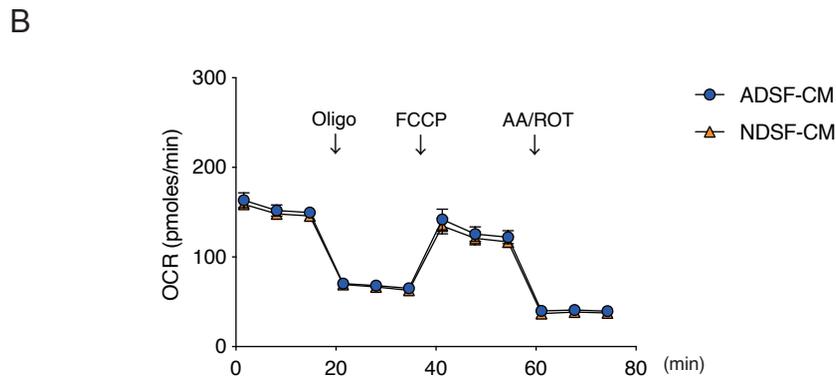
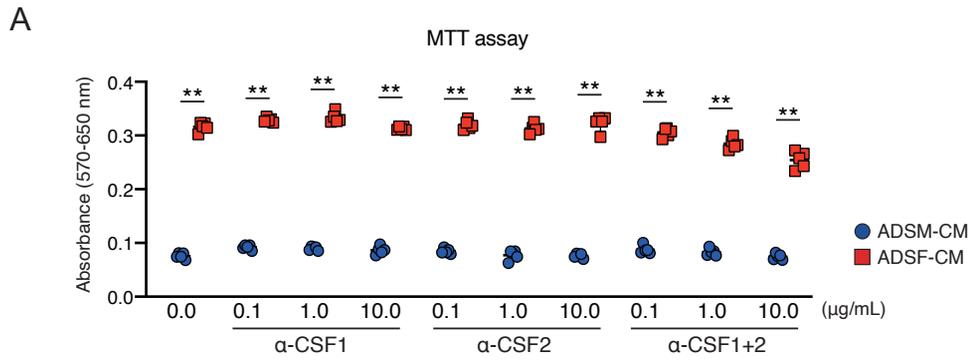
Supplemental Figure S1

Histological analysis of normal knee joint tissue. (A) Tnf (red) signals were detected on some F4/80-positive (green) cells (arrow). Nos2 was not detected. Scale bar represents 20 μm . (B) F4/80-positive (green) macrophages lined on ER-TR7-positive (red) fibroblasts in the synovium. Among inflammatory synovial fibroblast markers, Podoplanin (Pdpn) was not detected. Scale bar represents 20 μm . Histological data were technically replicated more than 2 times.



Supplemental Figure S2

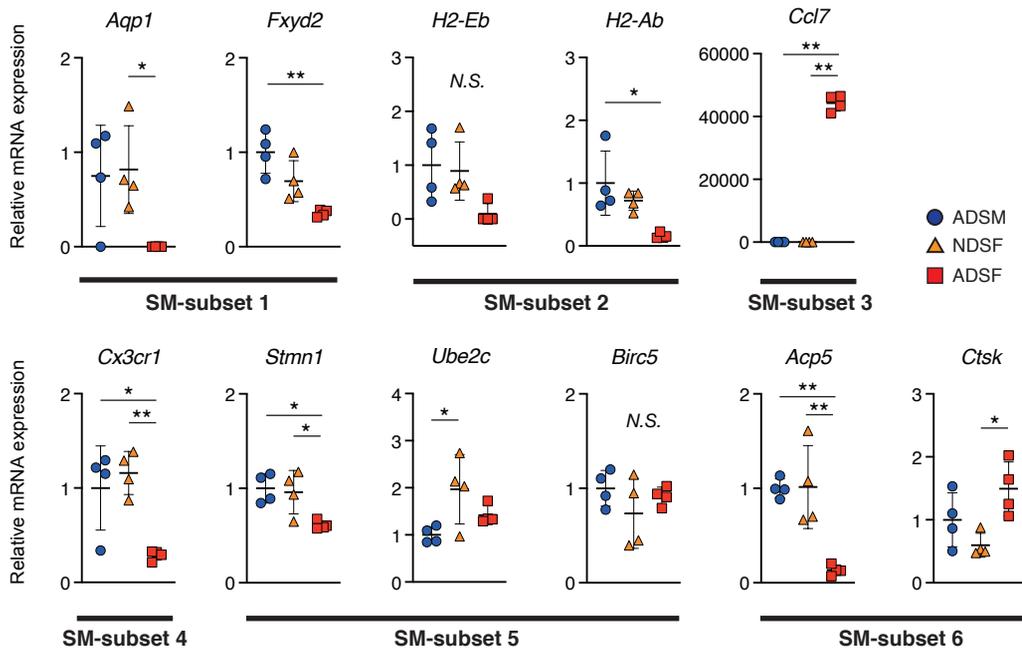
RNA-seq data analysis (A) Heatmap of SM-subset marker genes in isolated ADSM. Log₁₀ transformed read counts are scaled to 0.0 to 2.5. (*n*=3) (B) Heatmap of SF-subset marker genes in isolated ADSF. Log₁₀ transformed read counts are scaled to 0.0 to 2.0. (*n*=3). (C) Gene Ontology (GO) analyses were performed using DAVID Bioinformatics Resources. GO biological process (upper) and KEGG pathway (lower) are displayed by *P*-value. All data were obtained from 3 independent experiments using ADSM, NDSF and ADSF derived from 3 independent ankles with or without CAIA.



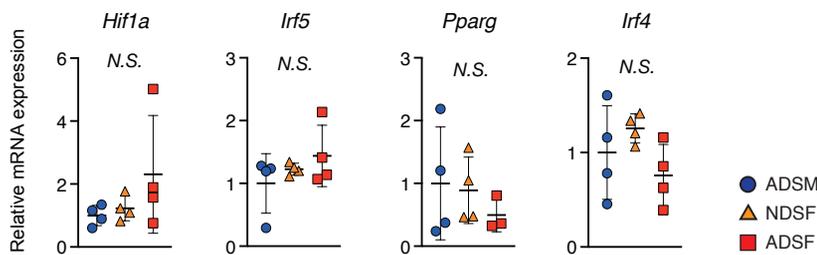
Supplemental Figure S3

Cellular metabolism analysis in ADSM. (A) neutralizing antibody against CSF1 and CSF2 (A16063L and/or MP1-22E9) was added to the ADSM-CM and ADSF-CM. After 24 hours, MTT assay was performed ($n=5$). ** indicates $P<0.01$ against ADSM-CM by unpaired t - test. Data are presented as average \pm SD. (B) Oxygen consumption rate (OCR) was assessed after the addition of oligomycin (Oligo), Carbonyl cyanide 4- (trifluoromethoxy) phenylhydrazone (FCCP) and antimycin A/rotenone (AA/ROT) at the indicated times in ADSM treated with NDSF-CM ($n=3$). (C) Extracellular acidification rate (ECAR) was assessed after the addition of glucose and oligomycin (oligo) at the indicated times in ADSM treated by NDSF-CM ($n=3$). Data were technically replicated and repeated more than 2 times using ADSM derived from other CAIA ankle.

A



B



Supplemental Figure S4

Gene expression in ADSM treated with CM. (A) SM-subset marker gene in isolated ADSM treated with CM was analyzed by RT-qPCR ($n=4$). (B) Inflammatory and anti-inflammatory gene expression in ADSM treated with CM was analyzed by RT-qPCR ($n=4$). * and ** indicate $P < 0.05$ and $P < 0.01$, respectively, by ANOVA followed by Tukey's test. N.S.; not significant. Data are presented as average \pm SD. All data were obtained from 4 independent experiments using ADSM derived from 4 independent CAIA ankles.