Figure S1. Characterization of hUC-MSCs. (A and B) hUC-MSCs exhibit a phenotype typical for mesenchymal stem cells at (A) day 5 and (B) day 14. Arrows indicate the cell colonies. (C and D) Pluripotent differentiation abilities of hUC-MSCs. (C) Alizarin red S staining of calcium deposits indicated that UC-MSCs were able to differentiate into osteoblasts, while (D) oil red O staining demonstrated that they differentiated into adipocytes after culture in the respective induction medium for 14 days (scale bars, 2 mm). (E) Flow cytometric analysis of UC-MSC makers at passage 1 when the cells were undifferentiated. The cells were positive for CD73, CD90 and CD105 and negative for CD34, CD11b, CD19, CD45 and HLA-DR antibody cocktail. Blue indicates the negative calibration control and red indicates cells. HLA, human leukocyte antigen; hUC-MSC, human umbilical cord mesenchymal stem cell.

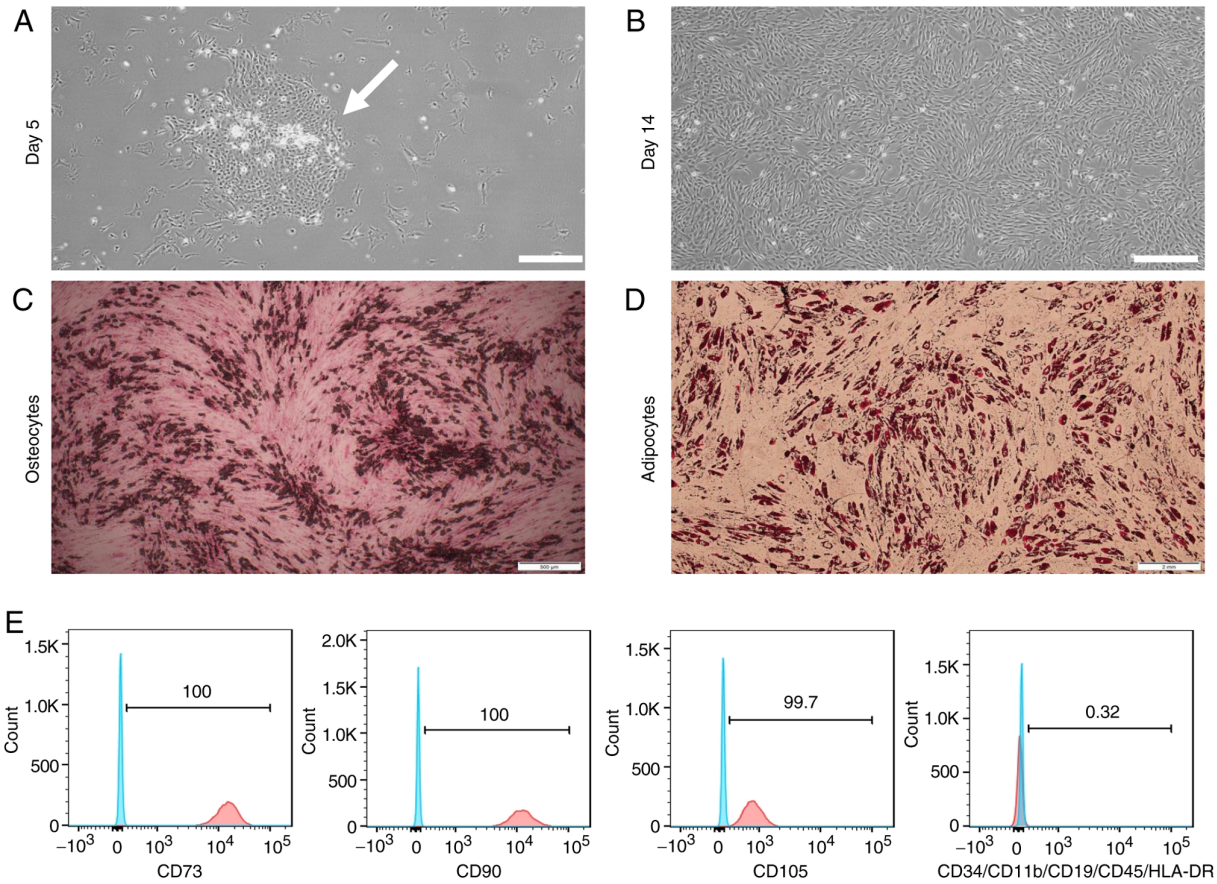

Figure S2. Locomotor behavior in the open field test. (A and B) Total immobility time, total active time, total movement distance and the mean motion velocity were recorded (A) at baseline and (B) 28 days after induction for CIA. *P<0.05, **P<0.01. (C) Locomotion was also assessed at day 28 in mice with CIA. Representative movement tracking patterns of mice in (D) normal mice and (E) CIA mice without treatment. CIA, collagen-induced arthritis; UC-MSC, umbilical cord mesenchymal stem cell; D, day; s, seconds.

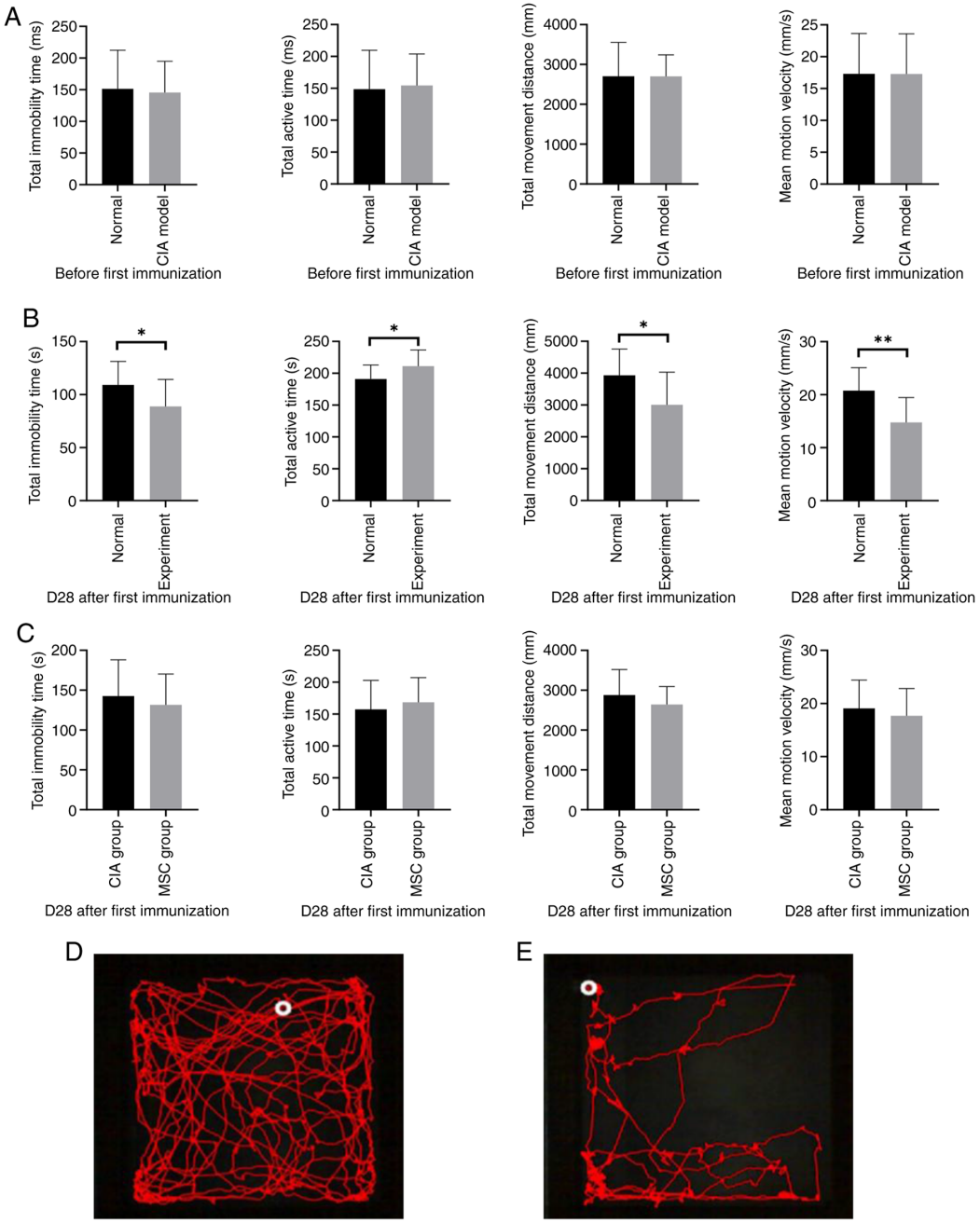

Figure S3. Clinical arthritis assessments. (A) Experimental timeline of treatments for the CIA model. Caliper measurements of (B) left and (C) right ankle swelling during the experimental period in normal mice, mice with CIA and mice with CIA receiving UC-MSCs ($5x10^6$ per mouse; weekly; three times). (D) Clinical arthritis scores. Values are expressed as the mean ± standard deviation (n=11 mice per group). CIA, collagen-induced arthritis; UC-MSC, umbilical cord mesenchymal stem cell; iv, intravenous.

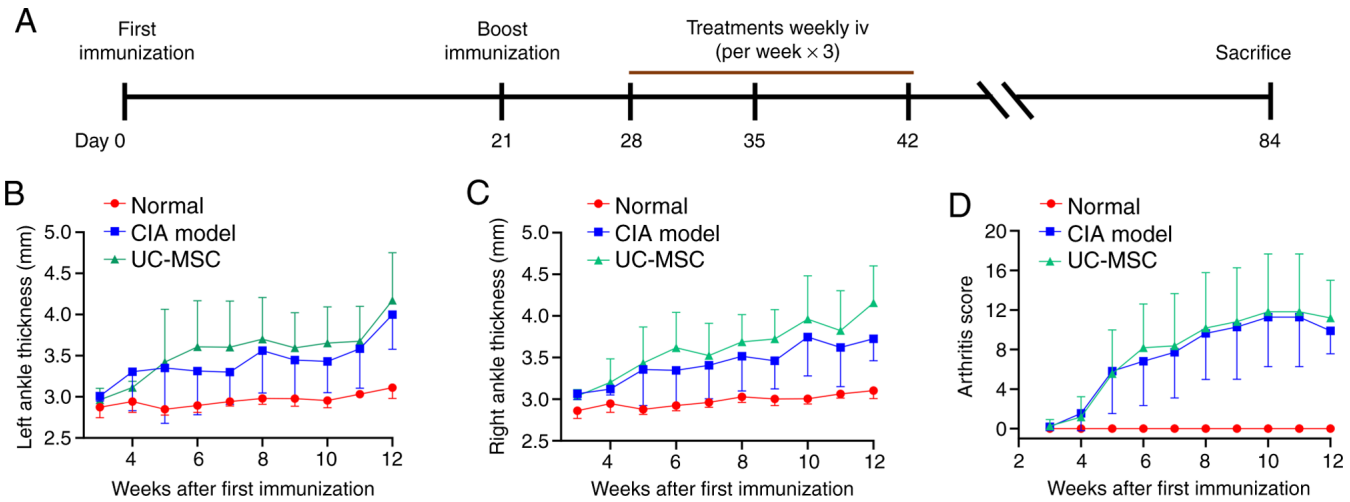

Figure S4. Immunohistochemical staining images for CD3, CD4, CD19, F4/80 and iNOS in gastrocnemius muscles from each group (scale bars, 2 mm). Positive results are indicated by brown staining. iNOS, inducible nitric oxide synthase.

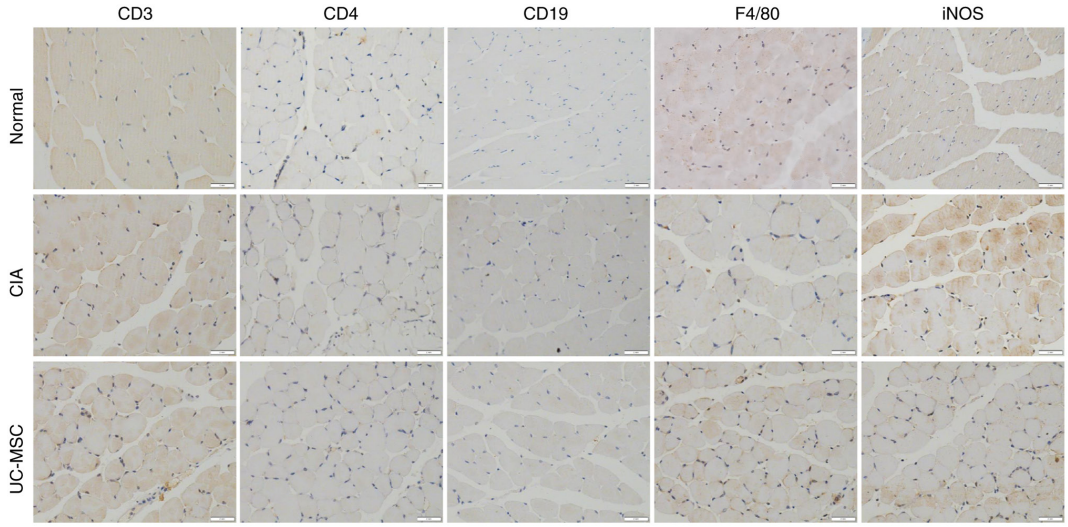

Table SI. Primers used for quantitative PCR.

Target	Primers	
	Forward	Reverse
TNF-α	CAGGCGGTGCCTATGTCTC	CGATCACCCCGAAGTTCAGTAG
IL-6	CTGCAAGAGACTTCCATCCAG	AGTGGTATAGACAGGTCTGTTGG
IL-1β	AGAGCTTCAGGCAGGCAGTA	AGGTGCTCATGTCCTCATCC
iNOS	GTTCTCAGCCCAACAATACAAGA	GTGGACGGGTCGATGTCAC
IL-10	GCTGCCTGCTCTTACTGACT	CTGGGAAGTGGGTGCAGTTA
α-SMA	GAGGCACCACTGAACCCTAA	CATCTCCAGAGTCCAGCACA
FN1	GATGTCCGAACAGCTATTTACCA	CCTTGCGACTTCAGCCACT
COLIa1	GCCAAGAAGACATCCCTGAAG	TGTGGCAGATACAGATCAAGC
COLIa2	GCAGGTTCACCTACTCTGTCCT	CTTGCCCCATTCATTTGTCT
COLIIIa1	CCAGTGGCCATAATGGGGAA	ATCTCGACCTGGCTGACCAT
TGF-β1	TGCTAATGGTGGACCGCAA	CACTGCTTCCCGAATGTCTGA
β-Actin	AGGCCAACCGTGAAAAGATG	CCAGAGGCATACAGGGACAAC

iNOS, inducible nitric oxide synthase; FN, fibronectin; COLIa1, collagen type I α 1 chain.