Bone & Joint Research

Supplementary Material

<10.1302/2046-3758.912.BJR-2020-0249.R1>

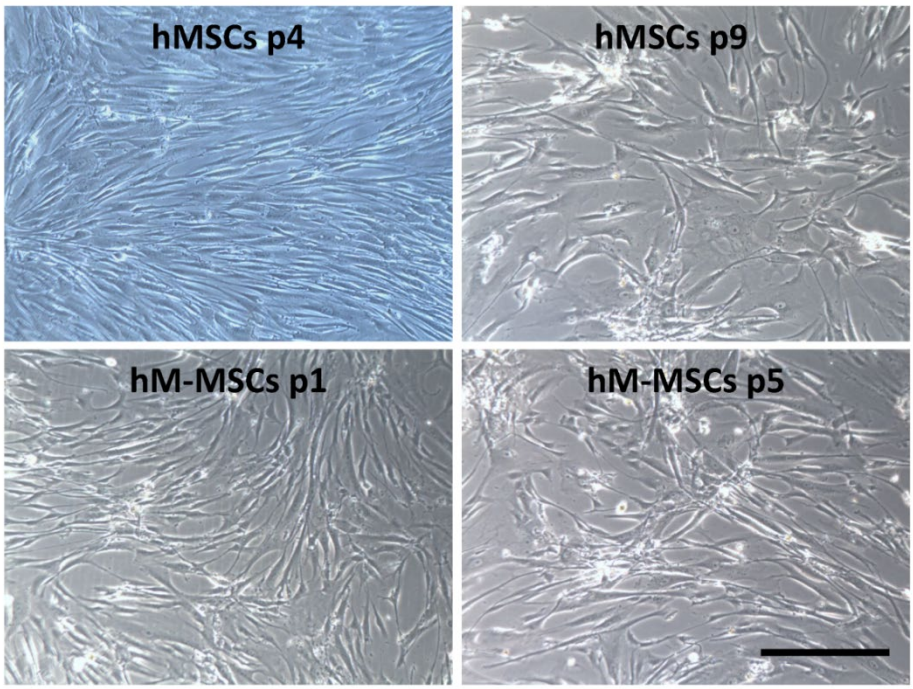

Fig. a. Cell morphology of manipulated human mesenchymal stem cells (hM-MSCs) (passage 1 or 5) and their untreated human mesenchymal stem cells (hMSCs) controls (passage 4 or passage 9) from donor 2 under bright light microscope. Scale bar: 50 μm.

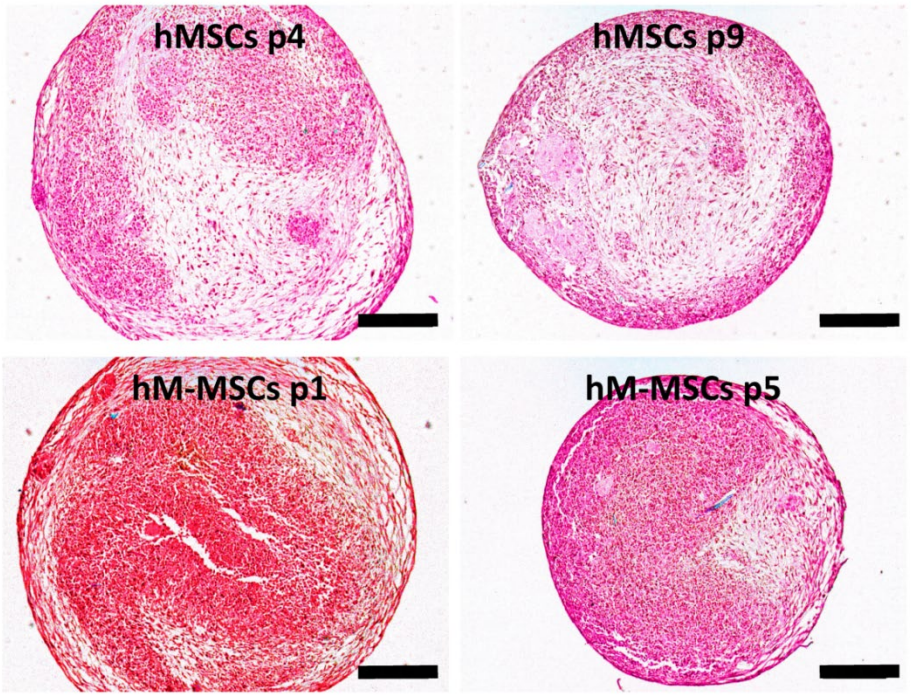

Fig. b. Safranin O staining results of manipulated human mesenchymal stem cells (hM-MSCs) (passage 1 or 5) and their untreated human mesenchymal stem cells (hMSCs) controls (passage 4 or passage 9) from donor 2 after 21 days of culture. Scale bar: 100 μm.

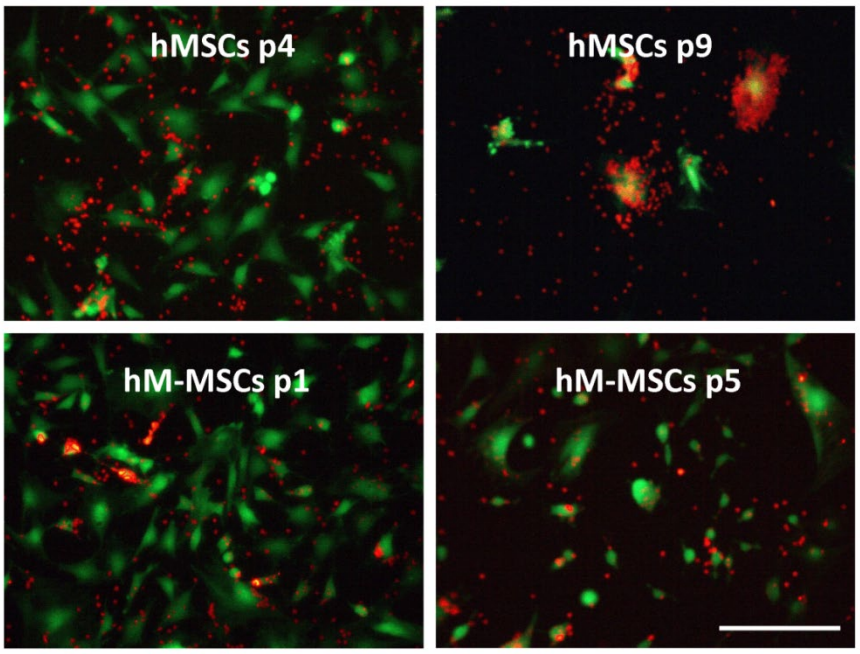

Fig. c. Immune response of manipulated human mesenchymal stem cells (hM-MSCs) (passage 1 or 5) and their untreated human mesenchymal stem cells (hMSCs) controls (passage 4 or passage 9) from donor 2 tested by Rosette forming assay. PKH26 (red) stained human peripheral blood lymphocytes formed rosette rings around PKH67 (green) stained hM-MSCs or hMSCs. Scale bar: 50 μm.

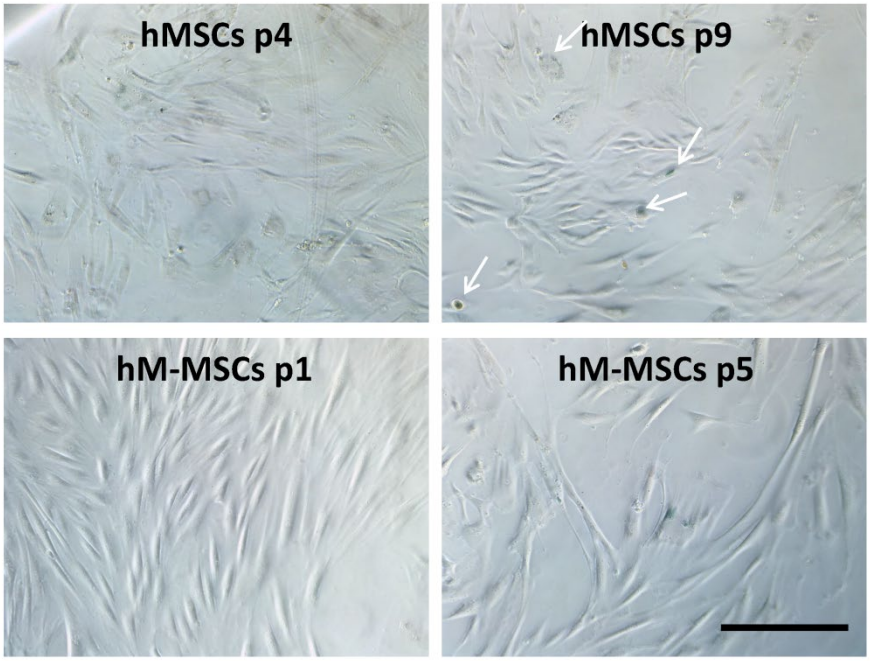

Fig. d. Cell senescence of manipulated human mesenchymal stem cells (hM-MSCs) (passage 1 or 5) and their untreated human mesenchymal stem cells (hMSCs) controls (passage 4 or passage 9) from donor 2 tested by senescence-associated beta-galactosidase (SA-β-gal) assay. Arrows point to the SA-β-gal-positive senescent cells. Scale bar: 50 μm.

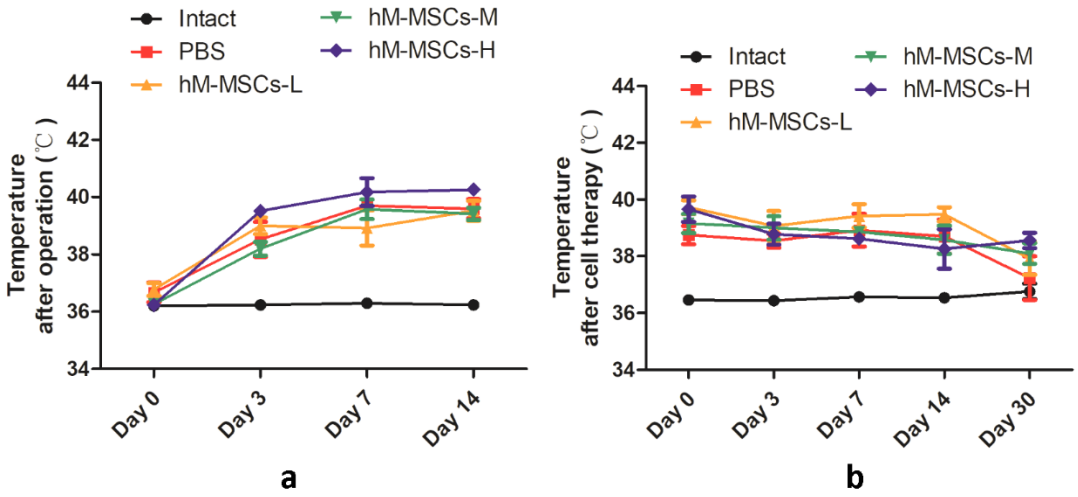

Fig. ea, eb. Local temperature of the affected knee skin monitored before and after cell therapy (n = 5). a) Local temperature on the operation date or 3, 7, and 14 days postoperatively but before cell injection. b) Local temperature on the date of cell injection or after 3, 7, 14, and 30 days of cell therapy. Data are presented as means and SDs. hM-MSCs, manipulated human mesenchymal stem cells, H, high dose (8 million), M, medium dose (4 million), L, low dose (2 million), PBS, phosphate-buffered saline.

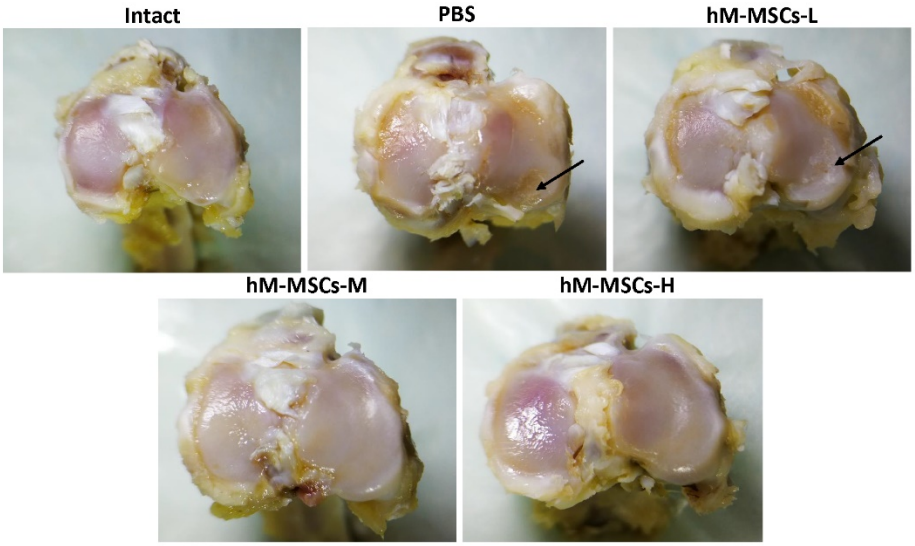

Fig. f. Gross view of tibial plateau in the affected knee after eight weeks of cell therapy. Black arrows point to the cartilage damage sites. hM-MSCs, manipulated human mesenchymal stem cells, H, high dose (8 million), M, medium dose (4 million), L, low dose (2 million), PBS, phosphate-buffered saline.

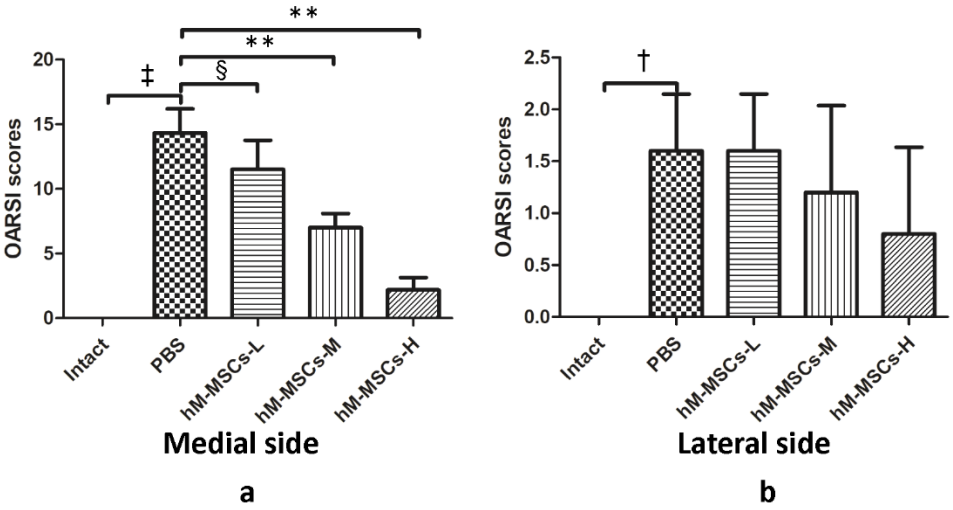

Fig. ga, gb. Results of Osteoarthritis Research Society International (OARSI) score at the medial or lateral site of tibial plateaus. a) Medial side; b) lateral side. Data are presented as means and SDs. $^{\dagger}p < 0.01$, $^{\ddagger}p < 0.001$ versus Intact; $^{\S}p < 0.05$, $^{**}p < 0.001$ versus phosphate-buffered saline (PBS) group. hM-MSCs, manipulated human mesenchymal stem cells, H, high dose (8 million), M, medium dose (4 million), L, low dose (2 million).

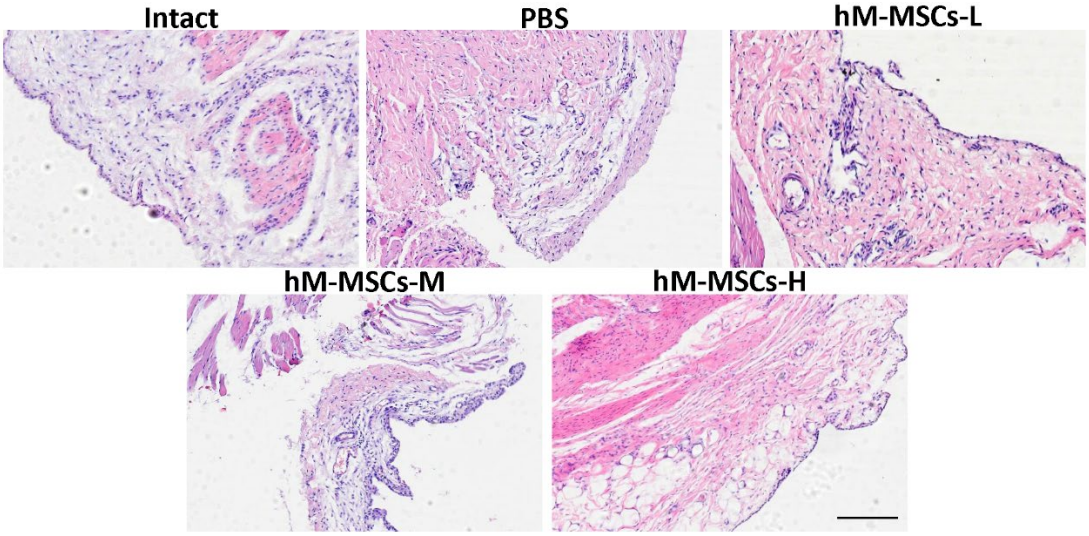

Fig. h. Histology results of the synovial membrane in the affected knee after eight weeks of cell therapy (n = 5). Haematoxylin and eosin staining. Scale bar: 100 μm. hM-MSCs, manipulated human mesenchymal stem cells, H, high dose (8 million), M, medium dose (4 million), L, low dose (2 million), PBS, phosphate-buffered saline.