**Supplemental data**

**Supplemental Table S1. Description of antibodies and dyes used**

| Antibody | Fluorophore | Clone | Isotype   | Source     |
|----------|-------------|-------|-----------|------------|
| CD3      | PE          | UCHT1 | IgG1-PE   | BD         |
| CD14     | PE          | MφP9  | IgG2b-PE  | BD         |
| CD19     | PE          | 4G7   | IgG1-PE   | BD         |
| CD31     | PE          | MBC78.2 | IgG1-PE  | BD         |
| CD34     | PE          | 8G12  | IgG1-PE   | BD         |
| CD45     | APC         | F10-89-4 | IgG2a-APC | Caprico    |
| HLA-DR   | APC         | L243  | IgG2a-APC | Caprico    |
| CD73     | PeCy7       | TY/11.8 | IgG1-PeCy7 | Biolegend  |
| CD90     | FITC        | F15-42-1 | IgG1-FITC | Caprico    |
| CD105    | APC         | 43A3  | IgG1-APC  | Biolegend  |
| Stro-1   | APC         | STRO-1 | IgM-APC   | ThermoFisher |
| 7AAD\(^1\) | --          | --    | --        | Invitrogen |

\(^1\)Abbreviations: 7-AAD, 7-aminoactinomycin; PE, phycoerythrin; APC, allophycocyanin; PeCy7, phycoerythrin-cyanin 7; FITC, fluorescein isothiocyanate.
**Supplemental Table S2. Description of primers used**

| Gene                        | Primer Sequence | Reference |
|-----------------------------|-----------------|-----------|
| Fatty acid binding protein 4 (FABP4) | F: 5'-ATACTGGGCCAGGAATTGTGAC-3'  
R: 5'-CGCATTCACACCAGCAGTTA-3' | 1         |
| Lipoprotein lipase (LPL)    | F: 5'-CTTGGAGATGTGGACACGC-3'  
R: 5'-GTGCCATACAGAGAAATCTC-3' | 2         |
| Osteonectin (ON)            | F: 5'-CCCATGGGCGAGTTTGAGAA-3'  
R: 5'-GATGTATTTGCAAGGCCCCGA-3' | 2         |
| Osteopontin (OPN)           | F: 5'-ACTGATTTCCCAGGCCAC-3'  
R: 5'-ATGGCTGTGGAATTTCACG-3' | 2         |
| Aggrecan (ACAN)             | F: 5'-TCGAGGACAGCGGAGGCC-3'  
R: 5'-TCGAGGGGTCTAGCGTCTAGAGA-3' | 1         |
| Collagen Type-1             | F: 5'-CCGCCCCCTTACACACG-3'  
R: 5'-TTTGTATTTCAATCAGCTTGCTTGCC-3' | 1         |
| Collagen Type-2             | F: 5'-GGCAGGACAGGTCACGTCA-3'  
R: 5'-CGATAACAGCCTTGCCACCACCA-3' | 1         |
| GAPDH                       | F: 5'-ATGGGAAGGTGAGGCTGC-3'  
R: 5'-TAAAGTCAGCCCTGAGGACC-3' | 1         |
| OCT4                        | F: 5'-ACATCAAAGCTCTGAGAAAAACT-3'  
R: 5'-CTGAATACCTTTCACTCCAAATGACACCC-3' | 1         |
| SOX9                        | F: 5'-CACACAGCTCAGCGACCGTT-3'  
R: 5'-CTGTTCTTTATGAGGATCATCTCG-3' | 1         |

1. Indrawattan et al. Growth factor combination for chondrogenic induction from human mesenchymal stem cell. Biochem Biophys Res Commun. 2004 Jul 30;320(3):914-9.

2. Patel et al. Mesenchymal stem cell population isolated from the subepithelial layer of umbilical cord tissue. Cell Transplant. 2013;22(3):513-9.
Supplemental Figure S1

Figure S1. Representative flow cytometry dot plots demonstrating the gating strategy used to identify passaged MSC by size based on forward and side scatter (A) and then single cells by forward scatter area over height (B). Single cells were then analyzed for the indicated cell surface epitopes (H-K) after setting gates based on a negative signal using fluorescently conjugated isotype control antibodies (supplemental table S2).