Table S1. Flow cytometry statistics data of all the main events considered for the population of hBM-MSCs and hWJ-MSCs used in the experiments. All samples were positive for CD90, CD105, CD73 and negative for CD14, CD34, CD45, HLA-DR.

Sample Name	# of Total Events	% Parent (Gated on P1)	% Total (No Gate)
hBM-MSC all events	15,000	***	100,00
hBM-MSC: P1	13,364	89.09	89.09
hBM-MSC: HLA-DR+	72	0.54	0.48
hBM-MSC:CD34+	87	0.65	0.58
hBM-MSC:CD14+	258	1.93	1.72
hBM-MSC all events	15,000	***	100.00
hBM-MSC: P1	13,555	90.37	90.37
hBM-MSC:CD90+	13,494	99.55	89.96
hBM-MSC:CD105+	13,538	99.87	90.25
hBM-MSC:CD73+	13,537	99.87	90.25
hBM-MSC:CD45+	35	0.26	0.23
Sample Name	# of Total Events	% Parent (Gated on P1)	% Total (No Gate)
Sample Name hWJ-MSC all events	# of Total Events 15,000	% Parent (Gated on P1) ***	% Total (No Gate) 100.00
Sample NamehWJ-MSC all eventshWJ -MSC: P1	# of Total Events 15,000 11,619	% Parent (Gated on P1) *** 77.46	% Total (No Gate) 100.00 77.46
Sample NamehWJ-MSC all eventshWJ -MSC: P1hWJ -MSC: HLA-DR+	# of Total Events 15,000 11,619 41	% Parent (Gated on P1) *** 77.46 0.35	% Total (No Gate) 100.00 77.46 0.27
Sample Name hWJ-MSC all events hWJ -MSC: P1 hWJ -MSC: HLA-DR+ hWJ -MSC:CD34+	# of Total Events 15,000 11,619 41 31	% Parent (Gated on P1) *** 77.46 0.35 0.27	% Total (No Gate)           100.00           77.46           0.27           0.21
Sample NamehWJ-MSC all eventshWJ -MSC: P1hWJ -MSC: HLA-DR+hWJ -MSC:CD34+hWJ -MSC:CD14+	# of Total Events 15,000 11,619 41 31 21	% Parent (Gated on P1) *** 77.46 0.35 0.27 0.18	% Total (No Gate)           100.00           77.46           0.27           0.21           0.14
Sample Name hWJ-MSC all events hWJ -MSC: P1 hWJ -MSC: HLA-DR+ hWJ -MSC:CD34+ hWJ -MSC:CD14+ hWJ -MSC all events	# of Total Events 15,000 11,619 41 31 21 15,000	% Parent (Gated on P1) *** 77.46 0.35 0.27 0.18 ***	% Total (No Gate)           100.00           77.46           0.27           0.21           0.14           100.00
Sample Name hWJ-MSC all events hWJ -MSC: P1 hWJ -MSC: HLA-DR+ hWJ -MSC:CD34+ hWJ -MSC:CD14+ hWJ -MSC all events hWJ -MSC: P1	# of Total Events 15,000 11,619 41 31 21 15,000 12,465	% Parent (Gated on P1) *** 77.46 0.35 0.27 0.18 *** 83.10	% Total (No Gate) 100.00 77.46 0.27 0.21 0.14 100.00 83.10
Sample Name hWJ-MSC all events hWJ -MSC: P1 hWJ -MSC: HLA-DR+ hWJ -MSC:CD34+ hWJ -MSC:CD14+ hWJ -MSC all events hWJ -MSC: P1 hWJ -MSC:CD90+	# of Total Events 15,000 11,619 41 31 21 15,000 12,465 12,368	% Parent (Gated on P1)  *** 77.46 0.35 0.27 0.18  *** 83.10 99.22	% Total (No Gate)           100.00           77.46           0.27           0.21           0.14           100.00           83.10           82.45
Sample Name hWJ-MSC all events hWJ -MSC: P1 hWJ -MSC: HLA-DR+ hWJ -MSC:CD34+ hWJ -MSC:CD14+ hWJ -MSC all events hWJ -MSC: P1 hWJ -MSC:CD90+ hWJ -MSC:CD105+	# of Total Events 15,000 11,619 41 31 21 15,000 12,465 12,368 12,379	% Parent (Gated on P1)      ***      77.46      0.35      0.27      0.18      ***      83.10      99.22      99.31	% Total (No Gate) 100.00 77.46 0.27 0.21 0.14 100.00 83.10 82.45 82.53
Sample Name hWJ-MSC all events hWJ -MSC: P1 hWJ -MSC: HLA-DR+ hWJ -MSC:CD34+ hWJ -MSC:CD14+ hWJ -MSC all events hWJ -MSC: P1 hWJ -MSC:CD90+ hWJ -MSC:CD105+ hWJ -MSC:CD73+	# of Total Events 15,000 11,619 41 31 21 15,000 12,465 12,368 12,379 12,369	% Parent (Gated on P1)  *** 77.46 0.35 0.27 0.18  *** 83.10 99.22 99.31 99.23	% Total (No Gate)           100.00           77.46           0.27           0.21           0.14           100.00           83.10           82.45           82.53           82.46



Figure S1. Brightfield images of hBM-MSCs and hWJ-MSCs with the hGDF-5 dose-dependent effect. Both cells showed cells specific alignment and their shape modification; hWJ-MSCs exhibited always higher proliferation rate positively affected by 100 ng/mL of GDF-5 dose.



Figure S2. Immunofluorescence images illustrating the effect of hGDF-5 dose on the expression of type 1 collagen and tenomodulin proteins on hBM-MSCs up to 16 days of culture. The panel shows the split color channels: type 1 collagen (red staining) and tenomodulin (green staining).



Figure S3. Immunofluorescence images illustrating the effect of hGDF-5 dose on the expression of type I collagen and tenomodulin proteins on hWJ-MSCs up to seven days of culture. The panel shows the split color channels: type 1 collagen (red staining) and tenomodulin (green staining).