



**Supplementary Figure S1. Microscopic images of both scaffolds under transmitted light at 4X.**

**Supplementary Table S1. List for used genes.**

Sr.no	Gene Abbreviation	Function
1	<i>RUNX2</i>	osteogenesis and bone remodeling
2	<i>ALP</i>	
3	<i>IBSP</i>	
4	<i>COL1A1</i>	
5	<i>BGLAP</i>	
6	<i>SPP1/OPN</i>	
7	<i>SPARC</i>	
8	<i>RANKL/TNFSF11</i>	
9	<i>OPG/ TNFSF11B</i>	
10	<i>ANKH</i>	
11	<i>GREM1</i>	
12	<i>E11/PDPN</i>	
13	<i>BMP2</i>	
14	<i>OMD</i>	
15	<i>PTHLH</i>	Chondrogenesis and cartilage damage
16	<i>SOX9</i>	
17	<i>COMP</i>	
18	<i>ACAN</i>	
19	<i>MMP1</i>	
20	<i>MMP2</i>	
21	<i>MMP3</i>	
22	<i>MMP13</i>	
23	<i>MMP9</i>	
24	<i>ADAMTS4</i>	
25	<i>COL10A1</i>	
26	<i>SERPINE1</i>	
27	<i>STMN2</i>	
28	<i>TIMP1</i>	

29	<i>TIMP2</i>	
30	<i>TIMP3</i>	
31	<i>PTGS2</i>	
32	<i>PPAR-γ</i>	Adipogenesis
33	<i>FABP4</i>	
34	<i>CXCL12</i>	Cellular interactions
35	<i>VEGFA</i>	growth factors/receptors
36	<i>Thy1 (CD90)</i>	
37	<i>VEGFC</i>	
38	<i>(CD73)/NT5E</i>	
39	<i>PDGFRB</i>	
40	<i>EGFR</i>	
41	<i>TGFBR2</i>	
42	<i>FGFR1</i>	
43	<i>FGFR2</i>	
44	<i>PTPRC (CD45)</i>	
45	<i>P21</i>	senescence and cell cycle
46	<i>P53</i>	
47	<i>P16</i>	
48	<i>HPRT1</i>	Control

**Supplementary Table S2.** VEGF release data from *n* = 3 BMSC donors.

Age	Gender	VEGF levels (pg/mL)
52	Female	146.97
45	Male	148.73
41	Female	99.48