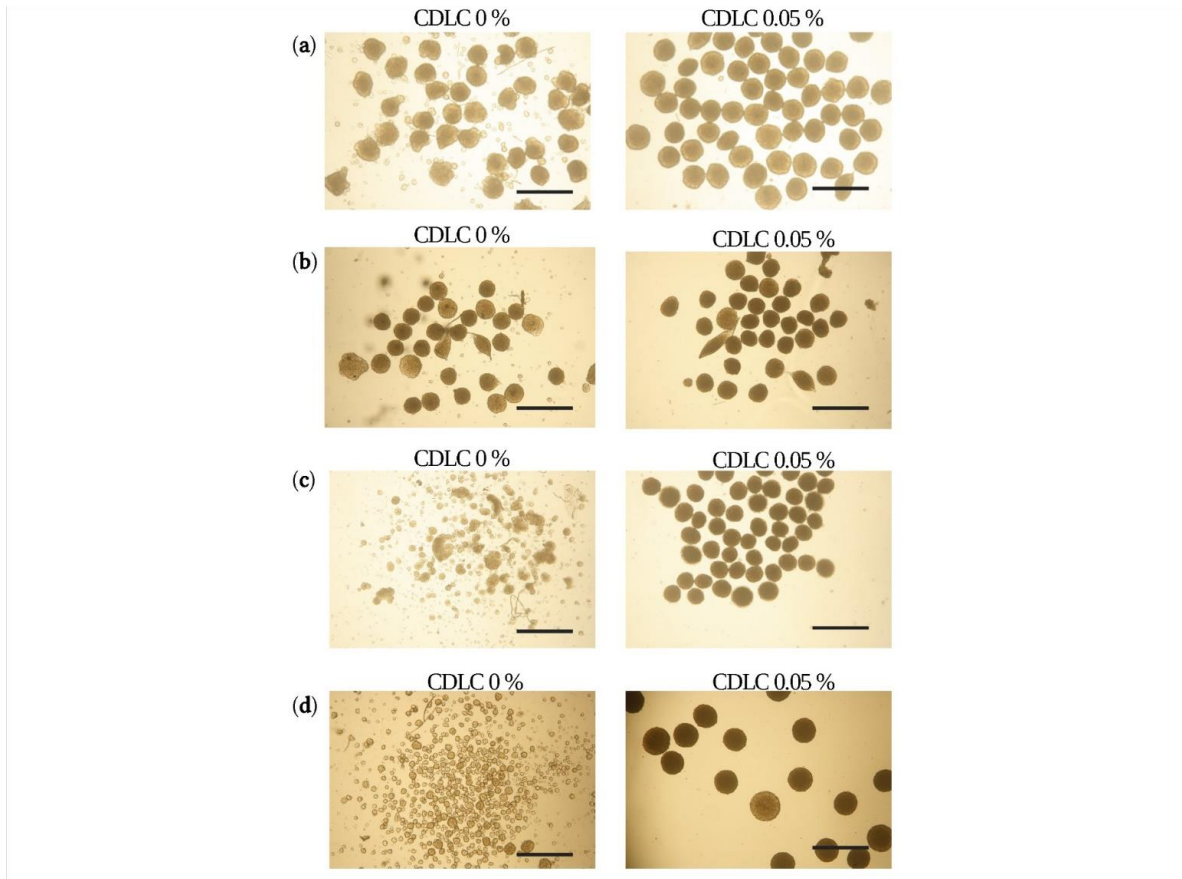


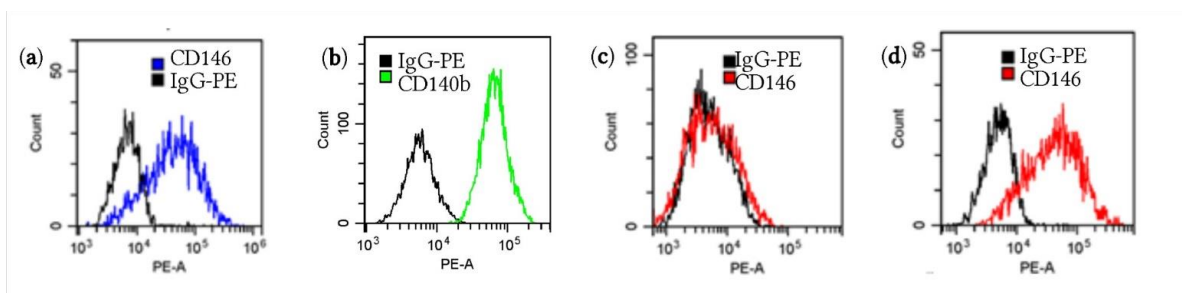
**Supplementary Materials:**

**Table S1.** Primer sequences for control and target genes and Q-PCR conditions.

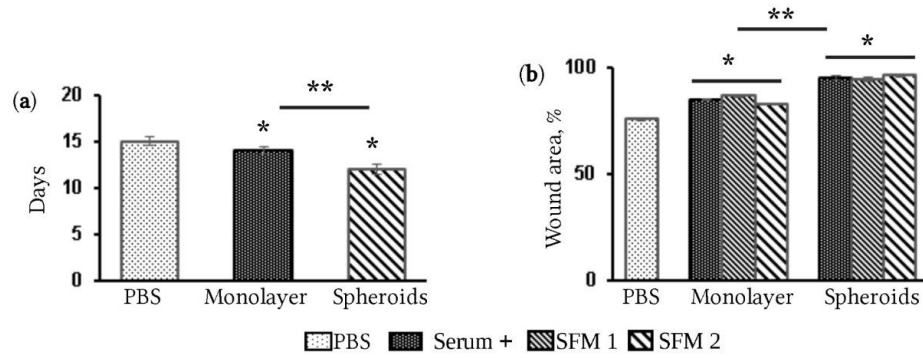
Symbol	Primer sequence	Amplification conditions	PCR productsize (bp)	Accession number	Reference
TSG-6	S: GATGGATGGCTAAGGGCAGAGT-3' AS: TCATTTGGGAAGCCTGGAGATT-3'	93°C, 20 s, 61°C, 20 s72°C 30 s	208	<a href="#">NM_007115.3</a>	[38]
EP2	S: 5-CCACCTCATTCTCCTGGCTA-3 AS: 5-CGACAACAGAGGACTGAACG-3	93°C, 20 s, 62°C, 20 s72°C 30 s	216	<a href="#">NM_000956.3</a>	[39]
HGF	S: 5'-CTCACACCCGCTGGGAGTAC-3' AS: 5'-TCCTTGACCTTGGATGCATTC-3'	93°C, 20 s, 62°C, 20 s72°C 30 s	104	<a href="#">XM_011516115.2</a>	[40]
GAPDH	S: 5'-GACTCATGACCACAGTCCATGC-3' AS: 5'-AGAGGCAGGGATGATGTTCTG-3'	93°C, 20 s, 67°C, 20 s72°C 30 s	112	<a href="#">NM_001289746.1</a>	[41]



**Figure S1.** Production of uniform-size spheroids from MSC of different origin. (a) Aggregation of MSC from adipose tissue into spheroids (passage 5) (Scale bar, 600  $\mu\text{m}$ .); (b) Aggregation of MSC from bone marrow into spheroids (passage 5) (Scale bar, 600  $\mu\text{m}$ .); (c) Aggregation of eMSC after prolonged cultivation into spheroids (passage 22) (Scale bar, 600  $\mu\text{m}$ .); (d) Aggregation of eMSC cultured in SFM 1 into spheroids (Scale bar, 600  $\mu\text{m}$ .).



**Figure S2.** Expression of CD146 and CD 140b in eMSC. (a) High expression of CD 146 in monolayer culture; (b) High expression of CD 140b in monolayer culture; (c) Reduced expression of CD 146 in eMSC dissociated from spheroids; (d) Restoration of CD 146 expression in eMSC dissociated from spheroid and cultured in monolayer for 72 h.



**Figure S3.** Wound healing dynamic in rat model. (a) Average time of wound closure after eMSC transplantation (average for all culture conditions). Data are shown as mean  $\pm$  SD, (n=9). Two-tailed Students t test was utilized for pairwise comparison. \*p<0.05 vs. PBS control; \*\*p<0.05 vs. monolayer cultured. (b) Wound area covered with new epithelium on day 10 in rats after transplantation. Data are shown as mean  $\pm$  SD, (n=9). The differences in wound closure were tested by Kruskal-Wallis H-test (non-parametric ANOVA) followed by post hoc pair-wise comparison using Dunn's test.. \*p<0.05 vs. PBS control, \*\*p<0.05 vs. monolayer cultured at the same conditions..