

Supplemental Table S1. Recombinant proteins of mouse 5G culture medium [8].

recombinant proteins	company, catalog No.	concentration
mouse SCF	Peprotech, 250-03	100 ng/ml
mouse Flt-3 ligand	Peprotech, 250-31L	100 ng/ml
mouse TPO	Peprotech, 315-14	20 ng/ml
mouse VEGF	Peprotech, 450-32	50 ng/ml
mouse IL-6	Peprotech, 216-16	20 ng/ml

Supplemental Table S2-1. Mouse antibodies for flow cytometric analysis.

antibodies	company, catalog No.
APC-Cy7 anti-mouse/human CD11b	Biolegend, 101225
APC/Cy7 Rat IgG2b, κ isotype Ctrl Antibody	Biolegend, 400623
APC anti-mouse CD206 (MMR)	Biolegend, 141707
APC Rat IgG2a, κ Isotype Ctrl Antibody	Biolegend, 400511
PE anti-mouse CD3	Biolegend, 100205
PE Rat IgG2b, κ isotype Ctrl Antibody	Biolegend, 400607
APC-Cy7 anti-mouse CD4	Biolegend, 100413
APC-Cy7 Rat IgG2b, κ isotype Ctrl Antibody	Biolegend, 400623
FITC anti-mouse/human CD45R/B220	Biolegend, 103205
FITC Rat IgG2a, κ isotype Ctrl Antibody	Biolegend, 400505
APC anti-mouse CCR2	R&D, FAB5538A
APC Rat IgG2b, κ isotype Ctrl Antibody	Biolegend, 400611
FITC anti-mouse Msr1(CD204)	BIO-RAD, MCA1322FT
FITC Rat IgG2b, κ isotype Ctrl Antibody	BD, 553988
FITC anti-mouse CD183 (CXCR3)	Biolegend, 126535
FITC Armenian hamster IgG, isotype Ctrl Antibody	Biolegend, 400905
PE/Cy7 anti-mouse CD194 (CXCR4)	Biolegend, 131213
PE/Cy7 Armenian hamster IgG, isotype Ctrl Antibody	Biolegend, 400921
APC anti-mouse CD196 (CCR6)	Biolegend, 129813
APC Armenian hamster IgG, isotype Ctrl Antibody	Biolegend, 400911
PE-Cy7 anti-mouse/human Mac-2 (Galectin-3)	Biolegend, 125417
PE-Cy7 Rat IgG2a, κ isotype Ctrl Antibody	Biolegend, 400521
True-Stain Monocyte Blocker™	Biolegend, 426102
PI	WAKO, 169-26281

Supplemental Table S2-2. Human antibodies for flow cytometric analysis.

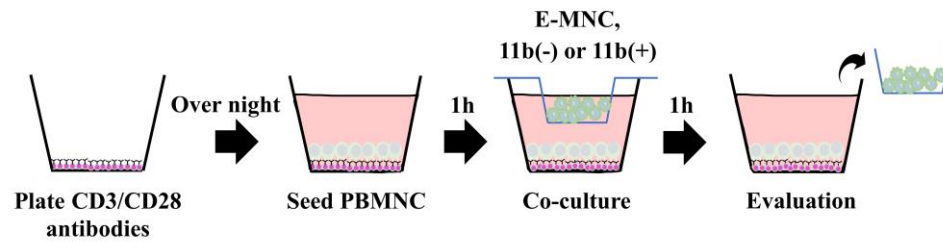
antibodies	company, catalog No.
PE-Cy7 mouse IgG1, κ isotype Ctrl Antibody	Biolegend, 400126
PE-Cy7 anti-human CD11b	Biolegend, 301322
APC-Cy7 mouse IgG1, κ isotype Ctrl Antibody	Biolegend, 400128
APC-Cy7 anti-human CD206	Biolegend, 321120
FcR Blocking Reagent, human	Miltenyi Biotec, 130-059-901
PI	WAKO, 169-26281

Supplemental Table S3-1. Mouse primers.

gene	forward	reverse
IL-1 β	5'-GCTGAAAGCTCTCCACCTCA-3'	5'-AGGCCACAGGTATTTTGTCG-3'
IL-10	5'-GCTGGACAACATACTGCTAACC-3'	5'-ATTCCGATAAGGCTTGGCAA-3'
IFN- γ	5'-ACAGCAAGGCGAAAAAGGATG-3'	5'-TGGTGGACCACTCGGATGA-3'
VEGF-A	5'-CCTCCGAAACCATGAACTTT-3'	5'-TCATGGGACTTCTGCTCTCC-3'
IL-6	5'-CCACTCCCAACAGACCTGTC-3'	5'-GCAAGTGCATCATCGTTGTTC-3'
CD206	5'-CCACAGCATTGAGGAGTTTG-3'	5'-ACAGCTCATCATTTGGCTCA-3'
IGF1	5'-CACACCTCTTCTACCTGGCG-3'	5'-AGCCTGTGGGCTTGTGAAG-3'
TGF- β	5'-GGACTCTCCACCTGCAAGAC-3'	5'-GACTGGCGAGCCTTAGTTTG-3'
TLR2	5'-AACTCTGACCCGCCCTTTAA-3'	5'-AGCCTGAAGTGGGAGAAGTC-3'
TLR4	5'-CTGCATAGAGGTAGTTCCTA-3'	5'-AATTTACACCTGGATAAAT-3'
NGF	5'-ATGGGGGAGTTCTCAGTGTG-3'	5'-GCACCCACTCTCAACAGGAT-3'
Car3	5'-CTTGATGCCCTGGACAAAAT-3'	5'-AGCTCACAGTCATGGGCTCT-3'
MMP9	5'-CGTCATTCGCGTGGATAAGG-3'	5'-TTTGGAAGTACACGCCAG-3'
GAPDH	5'-TGCACCACCAACTGCTTAG-3'	5'-GGATGCAGGGATGATGTTC-3'

Supplemental Table S3-2. Human primers.

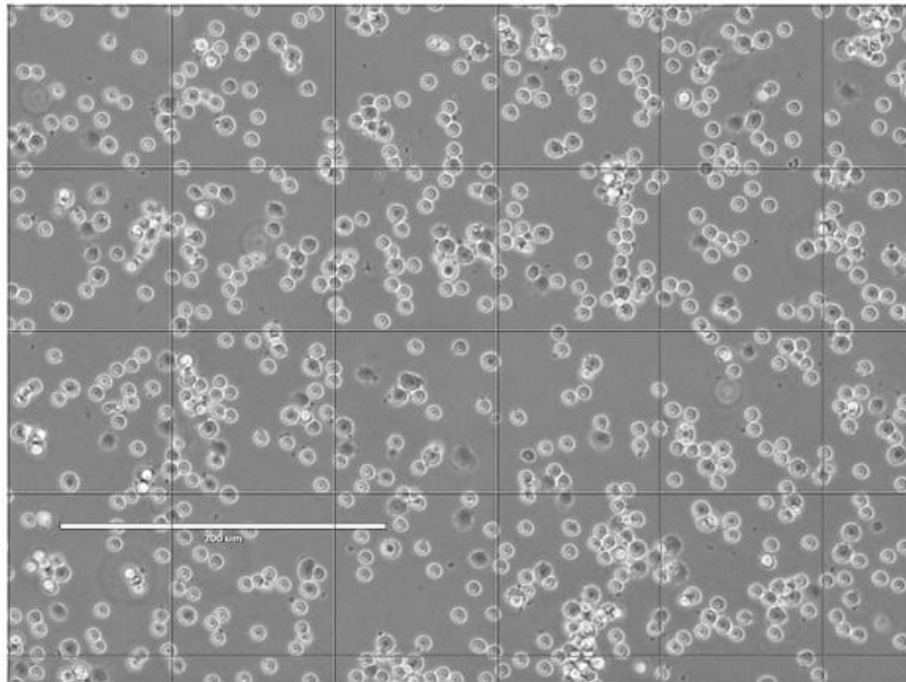
gene	forward	reverse
IL-1 β	5'-CACAGACCTTCCAGGAGAAT-3'	5'-TTCAACACGCAGGACAGGTA-3'
TNF- α	5'-AATGGCGTGGAGCTGAGA-3'	5'-TAGACCTGCCCAGACTCGG-3'
IFN- γ	5'-CTGTTACTGCCAGGACCCAT-3'	5'-ACACTCTTTTGATGCTCTGGT-3'
GAPDH	5'-GGAGTCCACTGGCGTCTTCAC-3'	5'-GCTGATGATCTTGAGGCTGTTGTC-3'



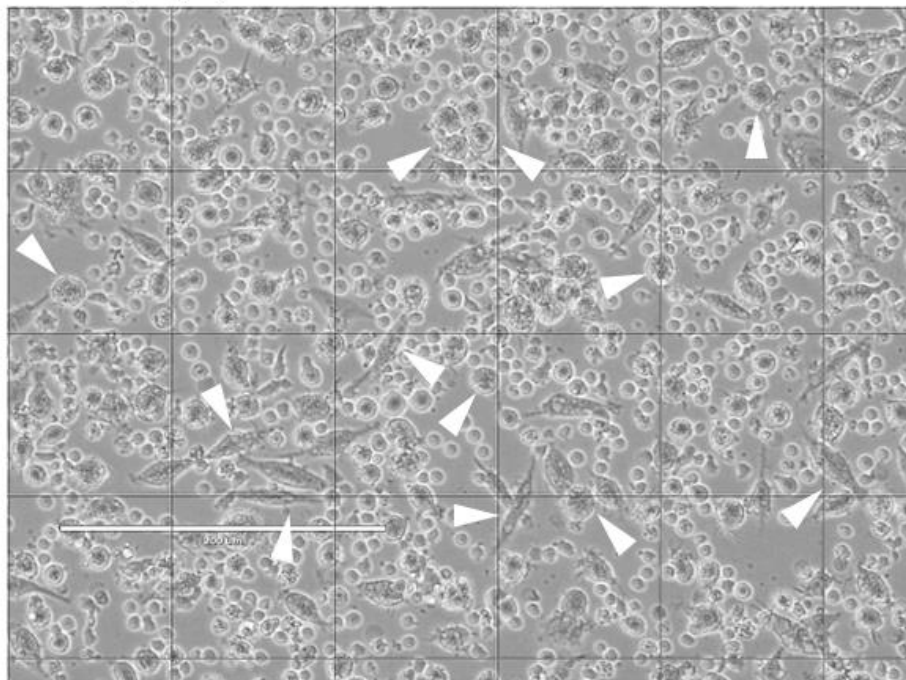
Supplemental Figure S1. Schematic diagram describing the experimental design for co-culture of E-MNCs and T-cell-activated PBMNCs. Anti-CD3 and -CD28 antibodies were added to the wells of a 24-well plate and incubated overnight. Then, PBMNCs were seeded to the wells and cultured at 37°C for 1 h. Subsequently, E-MNCs, 11b(–) cells, or 11b(+) cells were seeded to the upper chamber and co-cultured with stimulated PBMNCs at 37°C for 1 h. Finally, co-cultured PBMNCs were collected and analyzed.

A.

PBMNC (day 0)

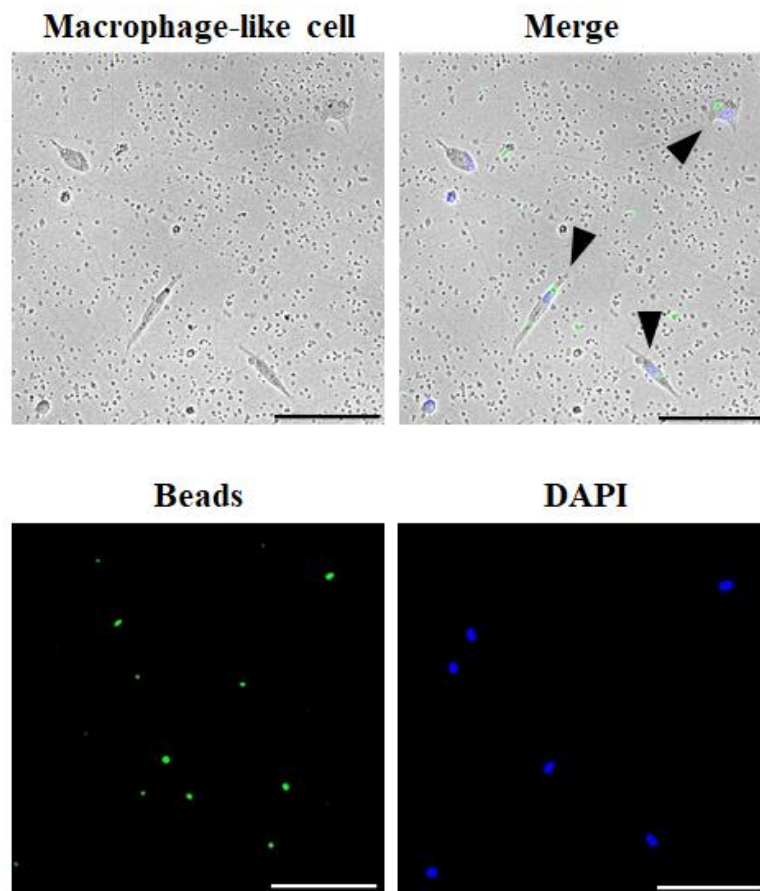


E-MNC (day 7)



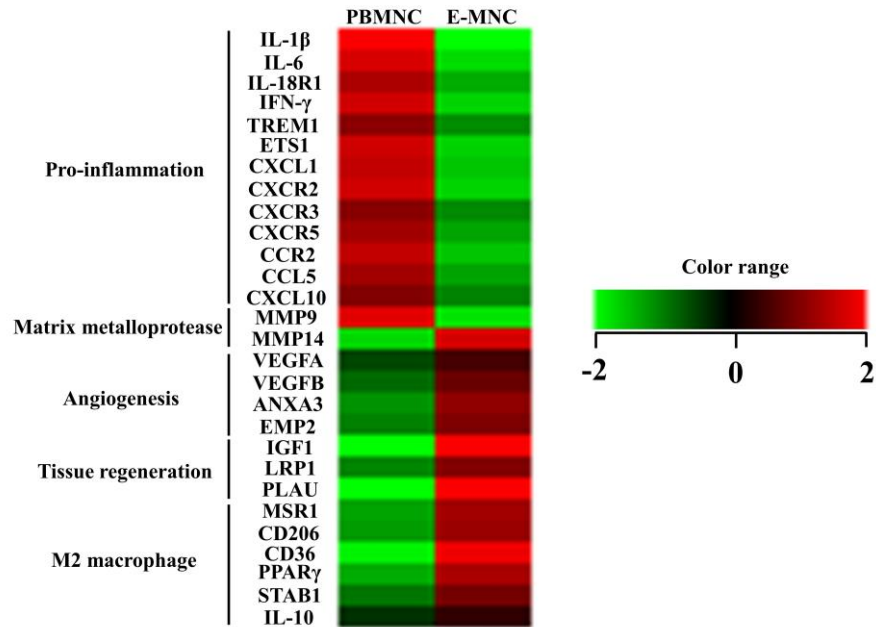
Supplemental Figure S2. Characteristics of human E-MNCs. (A) Phase-contrast imaging of PBMNCs (day 0) and E-MNCs (day 7). White arrows indicate round- and spindle-shaped macrophage-like cells (white arrows). Scale bar; 200 μ m.

A.

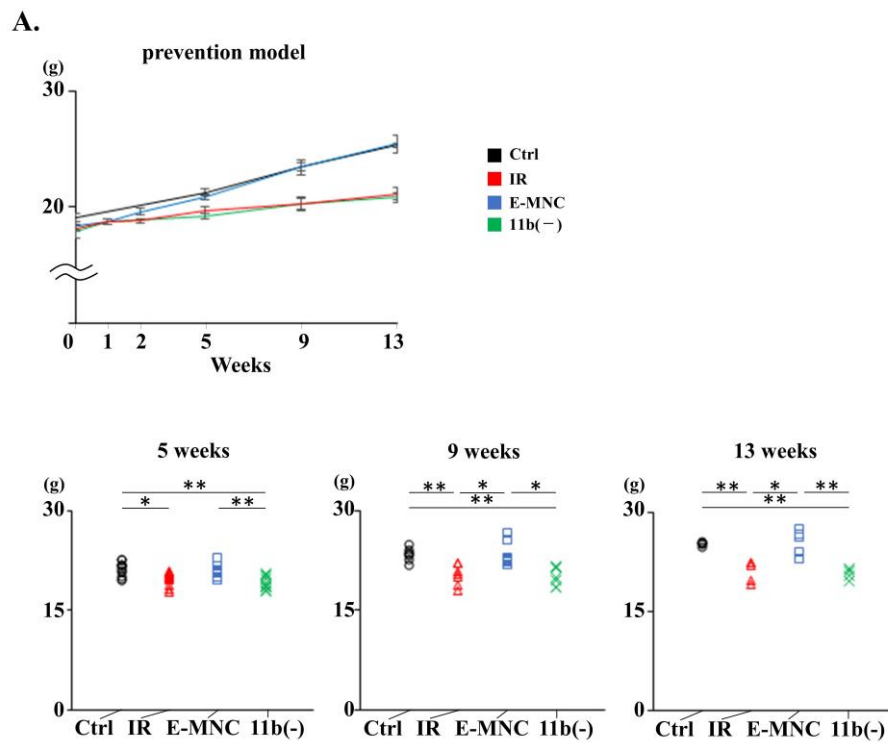


Supplemental Figure S3. Characteristics of human E-MNCs. **(A)** Phagocytosis assay with fluorescent beads. Phase-contrast and fluorescence microscopic images of macrophage-like round- and spindle-shaped cells (black arrows) among E-MNCs at 1 h. Green, fluorescent beads; Blue, DAPI. Scale bar 100 μ m.

A.

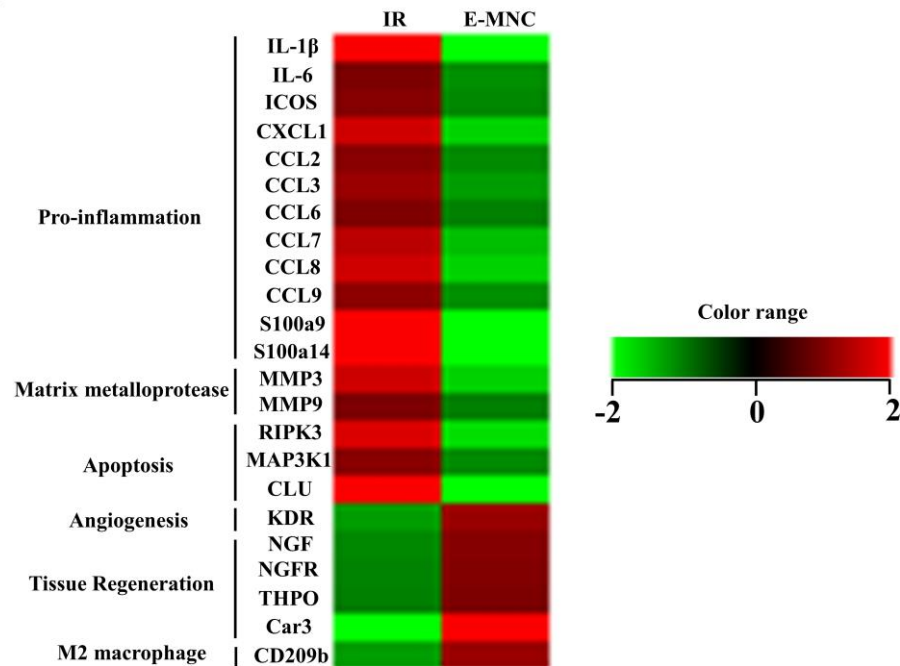


Supplemental Figure S4. Microarray analysis of PBMNCs and E-MNCs. **(A)** Heat map showing down-regulated and up-regulated genes associated with inflammation, matrix metalloproteases, angiogenesis, tissue regeneration, and M2-macrophages in PBMNCs (day 0) and E-MNCs (day 5). Red color indicates relatively higher expression, and green color indicates relatively lower expression.

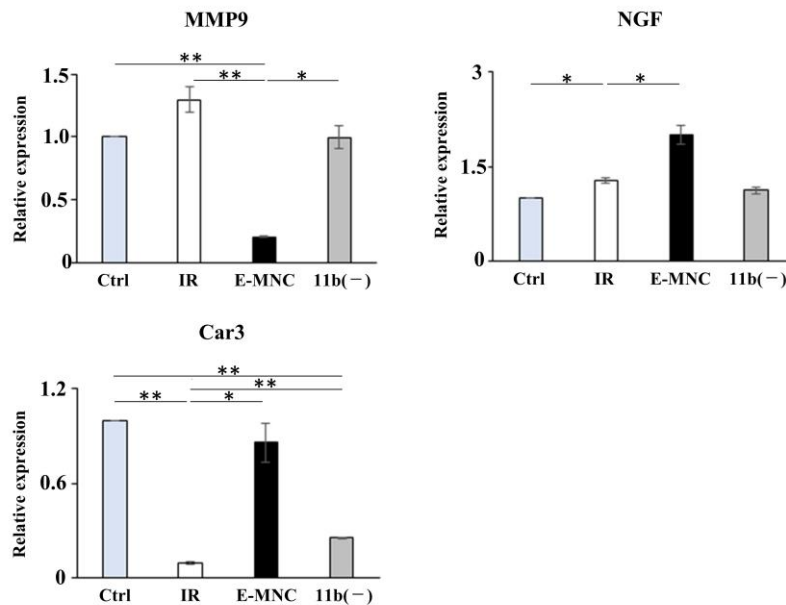


Supplemental Figure S5. Changes in body weight in the prevention mouse model after transplantation. **(A)** Change in body weight in each group at 1, 2, 5, 9, and 13 weeks post-IR (upper graph) and scatter diagram of body weight in each specimen at 5, 9, and 13 weeks post-IR (lower graphs) (* $P < 0.05$, ** $P < 0.01$).

A.

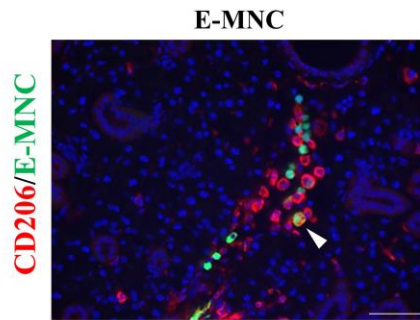


B.

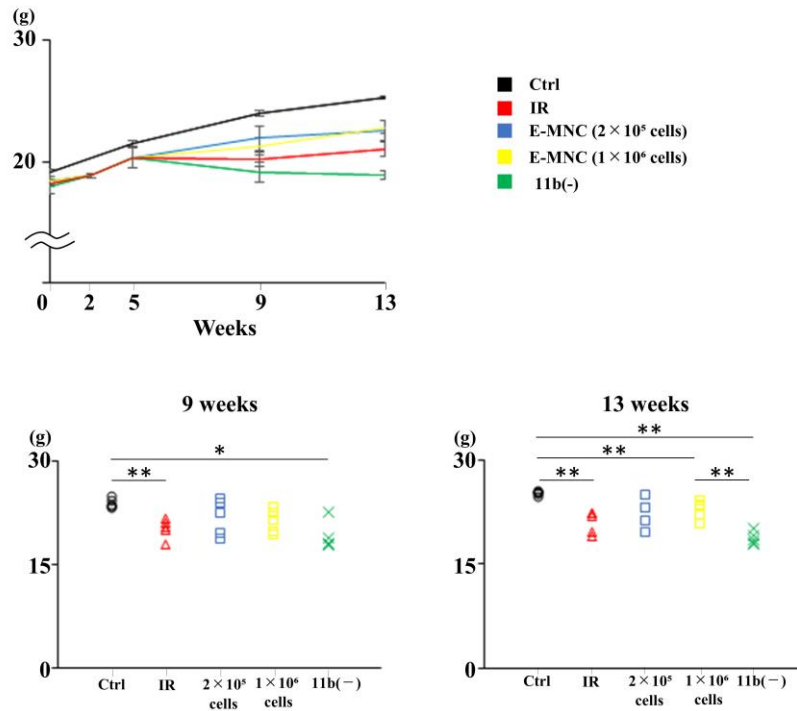


Supplemental Figure S6. Microarray and qPCR analyses of transplanted specimens at 2 weeks post-IR. **(A)** Heat map showing down-regulated and up-regulated genes associated with inflammation, matrix metalloproteases, apoptosis, angiogenesis, tissue regeneration, and M2-macrophages in the IR- and E-MNC-groups. Red color indicates relatively higher expression, and green color indicates relatively lower expression. **(B)** Expression of mRNAs of genes encoding MMP9, NGF, and Car3 in each group (* P <0.05, ** P <0.01).

A.



B. damage-established model



Supplemental Figure S7. Immunohistological observations at 10 days post-IR and changes in body weight after transplantation. (A) CD206-expressing cells (red) at the periphery of transplanted E-MNCs (green). Blue, DAPI. Scale bar, 50 μ m. (B) Changes in body weight in each group of the established model at 2, 5, 9, and 13 weeks post-IR (upper graph), and scatter diagram of body weight in each specimen at 9 and 13 weeks post-IR (lower graphs) (* $P < 0.05$, ** $P < 0.01$).