**Supplementary Fig. 1** Phenotype and differentiation potential of rat ASCs. (A) Phenotype analysis of rat ASCs was performed by flow cytometry. Representative histograms together with expression levels are shown. The expression level of cell surface markers is represented as the percentage of positive cells above the negative control (isotype controls, gray lined histograms). (B) In vitro differentiation potential of rat ASCs. The cells were in vitro cultured for 21 days with standard medium (control) or with specific differentiation media for adipogenic, chondrogenic, and osteogenic lineages (induced). Differentiation toward adipocytes, chondrocytes, and osteocytes was evidenced by Oil Red O, Alizarin Red, and Alcian Blue 8GX, respectively. ASCs, adipose-derived stem cells.

**Supplementary Fig. 2** Presence of rat ASCs in the collagen scaffold. At day 7 after the implantation of the collagen scaffold in combination with ASCs, it was recovered from the animal, submerged in PBS, stained with Hoechst 33342, and visualized under fluorescent and optical microscopy. (A) Image obtained under optical microscopy. (B) Image obtained under fluorescent microscopy. (C) Visualization merging bright field and fluorescence microscopy. ASCs, adipose-derived stem cells; PBS, phosphate-buffered saline.