Electronic Supplementary Material (ESI) for Materials Advances.

Supporting Information

An *in situ* Gelling BMSC-laden Collagen/Silk Fibroin Double Network Hydrogel for Cartilage Regeneration

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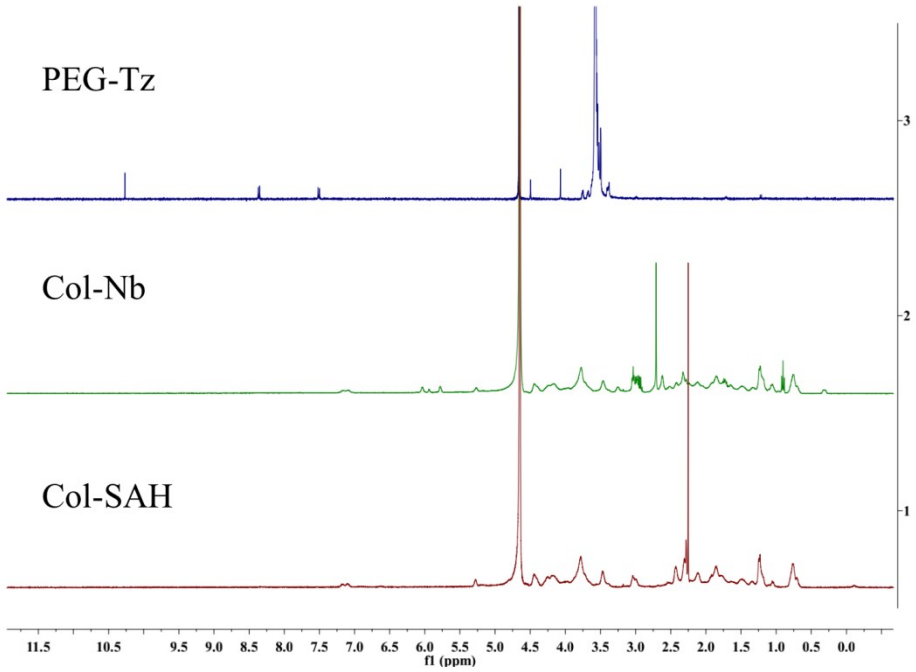

Fig. S1 The ^{1}H NMR spectra of Col-SAH, Col-Nb and PEG-Tz.

Table S1. The compositions of different Col-PEG hydrogels.

Hydrogels	Concentrations (w/v)	
	PEG-Tz	Col-Nb
Col_1-PEG_2	3.33%	6.66%
Col_1-PEG_1	5%	5%
Col_2-PEG_1	6.66%	3.33%

Table S2. The compositions of different Col-PEG/SF hydrogels.

Hydrogels	Concentrations (w/v)		
	PEG-Tz	Col-Nb	SF
$PEG_{7.5}$-$Col_{7.5}$	7.5%	7.5%	0
PEG_5-Col_5/SF_5	5%	5%	5%
PEG_5-Col_5/SF_{10}	5%	5%	10%

Table S3. Primers for qRT-PCR.

Gene	Prime sequence
Col II	F-CACCGCTAACGTCCAGATGAC R-GGAAGGCGTGAGGTCTTCTGT
AGG	F-GGAATCCCTAGCTGCTTAGCAG R-GAGTCATTGGAGCGAAGGTTC
Sox 9	F-AGGAAGCTGGCAGACCAGTA R-ACGAAGGGTCTCTTCTCGCT
GAPDH	F-TGGAGTCTACTGGCGTCTT R-TGTCATATTTCTCGTCCTTCA

Table S4. Modified Wakitani's histological scoring system[1]

Category	Points
Cell morphology	
Hyaline cartilage	4
Mostly hyaline cartilage	3
Mostly fibrocartilage	2
Mostly non-cartilage	1
Non-cartilage only	0
Matrix staining	
Normal	3
Slightly reduced	2
Markedly reduced	1
No metachromatic stain	0
Structural integrity	
Normal	2
Slight disruption	1
Severe disintegration	0
Surface regularity	
Smooth (>3/4)	3
Moderate (>1/2-3/4)	2
Irregular (1/4-1/2)	1
Severely irregular (<1/4)	0
Thickness of cartilage	
>2/3	2
1/3-2/3	1
<1/3	0
Regenerated subchondral bone	
Good	2
Moderate	1
Poor	0
Integration of donor with host adjacent cartilage	
Both edge integrated	2
One edge integrated	1
Neither edge integrated	0
Total maximum	18

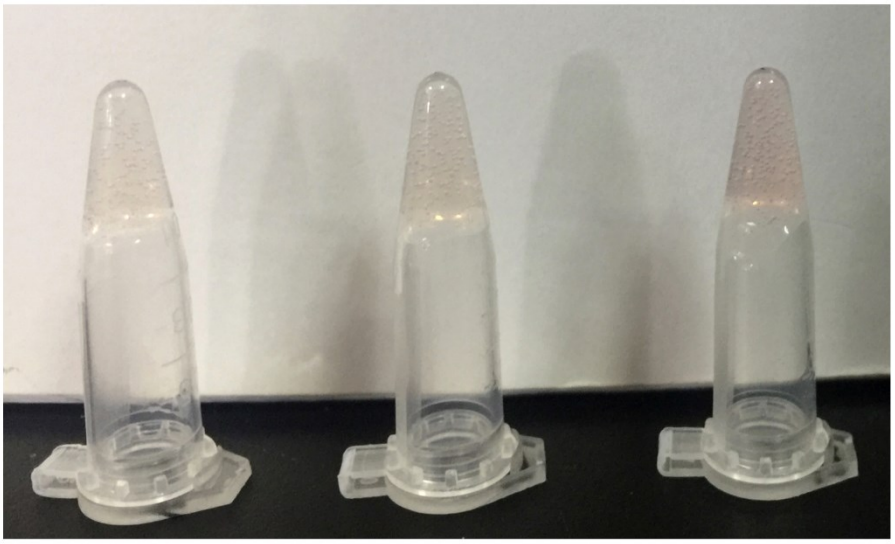

Fig. S2 Hydrogels with different Col-Nb/PEG-Tz ratios.

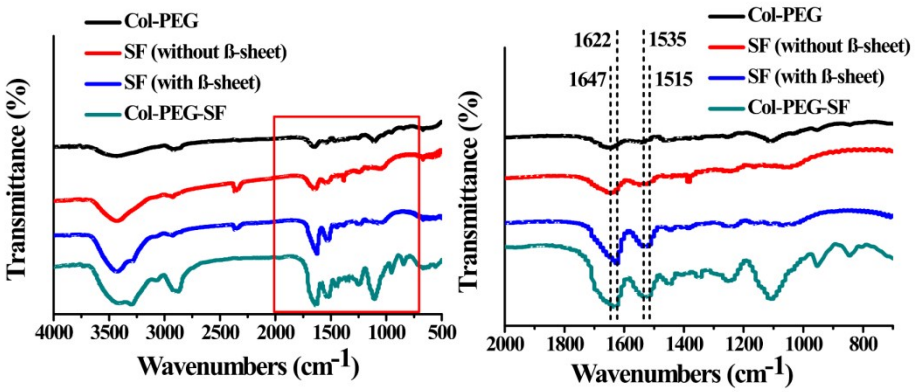

Fig. S3 The FTIR spectra of Col-PEG hydrogel, pure SF, SF hydrogel and Col-PEG/SF hydrogel.

1. Huang, H. J.; Zhang, X.; Hu, X. Q.; Shao, Z. X.; Zhu, J. X.; Dai, L. H.; Man, Z. T.; Yuan, L.; Chen, H. F.; Zhou, C. Y.; Ao, Y. F. A functional biphasic biomaterial homing mesenchymal stem cells for in vivo cartilage regeneration. *Biomaterials* **2014**, *35*, 9608-9619.