Supporting Information for

Chondrogenic differentiation of mesenchymal stem cells on glycosaminoglycan-mimetic peptide nanofibers

Seher Ustun Yaylaci, Merve Sen, Ozlem Bulut, Elif Arslan, Mustafa O. Guler and Ayse B. Tekinay

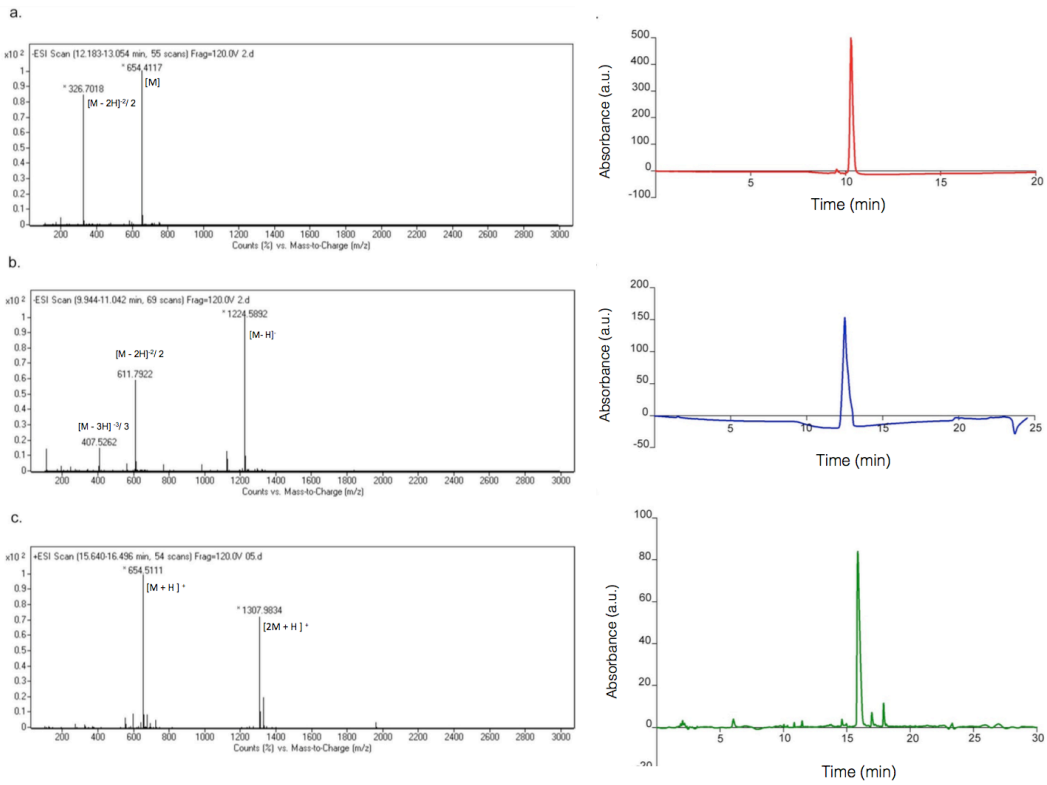

Figure S1. Liquid chromatography-mass spectrometry (LC-MS) analyses of E-PA (a), GAG-PA (b) and K-PA (c).

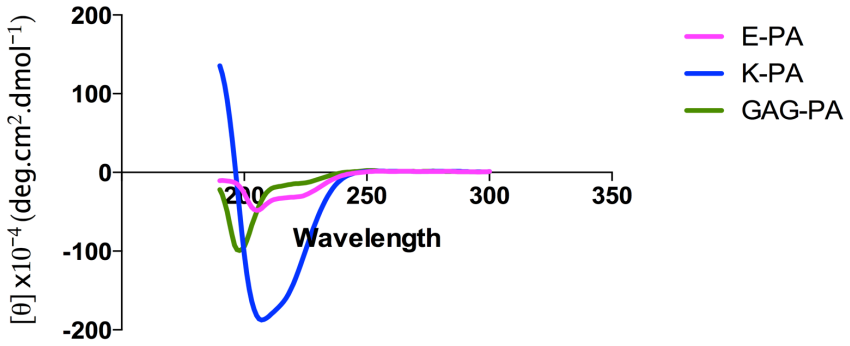

Figure S2. CD profile of peptide amphiphile molecules

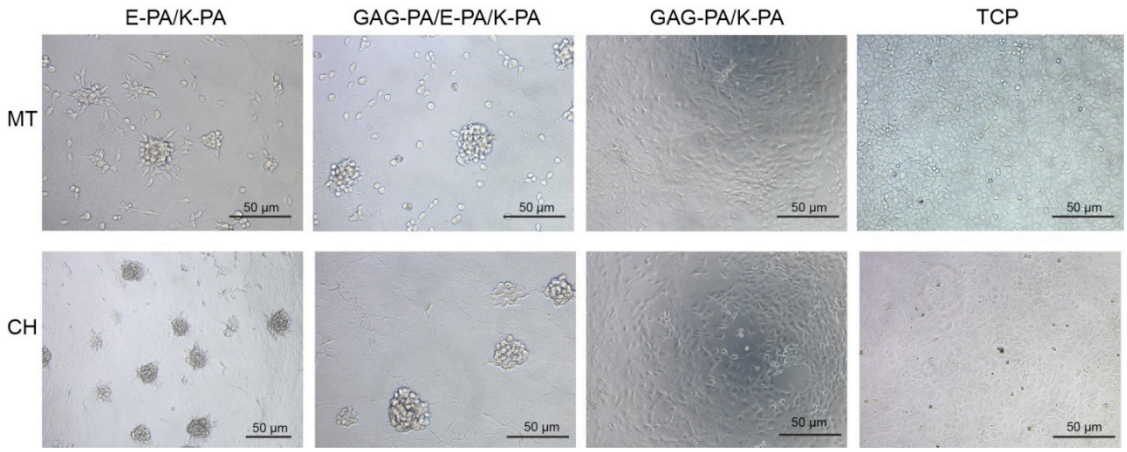

Figure S3. Morphological changes of MSCs on day 7 cultured in either maintenance or chondrogenic medium. (MT: maintenance medium, CH: chondrogenic medium)

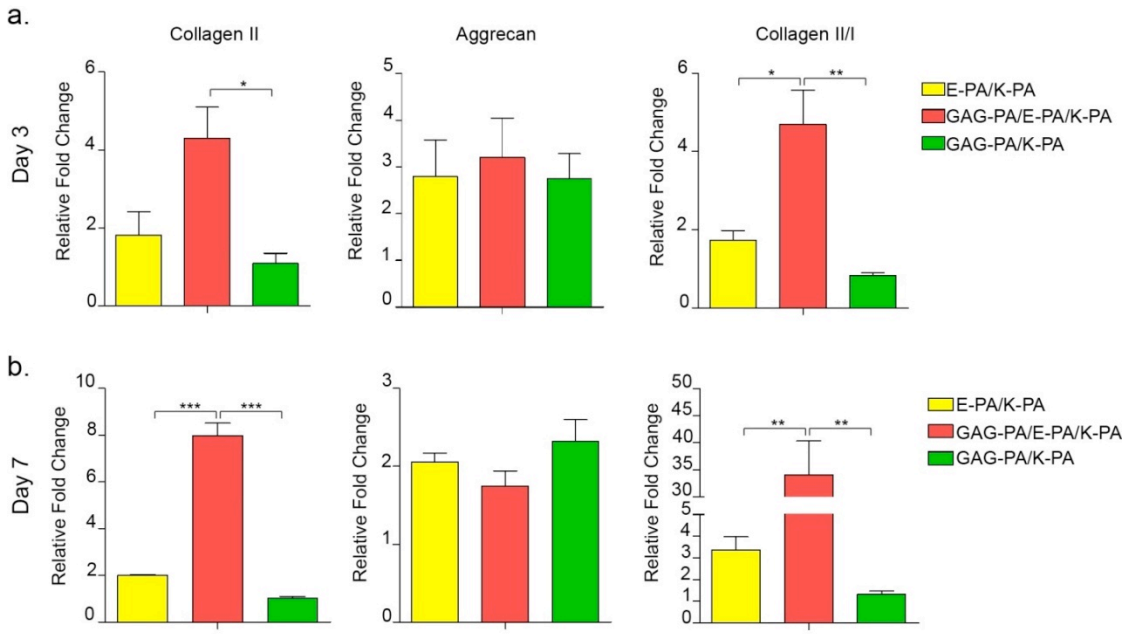

Figure S4. Cartilage specific gene expression in maintenance medium. A-B) Aggrecan, Collagen II and Collagen II/I expression of rMSCs on nanofiber networks on day 3 and 7 in maintenance medium. The expression level of each gene was normalized against uncoated tissue culture plate samples (TCP) and GAPDH was used as the internal control. Values represent mean ± SEM, $n = 3$ (***$p < 0.0001$, **$p < 0.01$, *$p < 0.05$).

TABLES

Table S1. Functional epitopes and molar ratios used in the preparation of peptide amphiphile networks.

Nanofibrous Network Composition	Available functional epitopes	Molar Mixing Ratio
E-PA/K-PA	Carboxylate	2 : 2
GAG-PA/E-PA/K-PA	Sulfonate, carboxylate, hydroxyl	1 : 1 : 2
GAG-PA/K-PA	Sulfonate, carboxylate, hydroxyl	2 : 2

Table S2. Primers used for qRT-PCR expression analyses

Gene	Primer Sequence: Forward/Reverse	Product Size (bp)
Col I	5'-TGACTGGAAGAGCGGAGAGT-3' 5'-GTTCGGGCTGATGTACCAGT-3'	151
Col II	5'-ACTTGCGTCTACCCCAACC-3'	123

	5'-GCCATAGCTGAAGTGGAAGC-3'	
Aggrecan	5'-GGTCACTGTTACCGCCACTT-3'	175
	5'-CCCCTTCGATAGTCCTGTCA-3'	

Table S3. Molar ratios used in the preparation of peptide amphiphile scaffolds.

Nanofibrous Network Composition	Molar Mixing Ratio
GAG-PA/E-PA/K-PA-L	0.66 : 1.33 : 2
GAG-PA/E-PA/K-PA	1 : 1 : 2
GAG-PA/E-PA/K-PA-H	1.33 : 0.66 : 2