Supporting Information

Nanofibrillar hydrogel scaffolds from recombinant protein-based polymers with integrin- and proteoglycan-binding domains

Małgorzata K. Włodarczyk-Biegun,^{1*} Marc W. T. Werten,^{2*} Urszula Posadowska,^{1,3} Ingeborg M. Storm,¹ Frits A. de Wolf,² Jeroen J. J. P. van den Beucken,⁴ Sander C. G. Leeuwenburgh,⁴ Martien A. Cohen Stuart,¹ Marleen Kamperman¹

*These authors contributed equally to this work.

¹ Physical Chemistry and Soft Matter, Wageningen University, Stippeneng 4, NL-6708 WE Wageningen, The Netherlands; <u>gosia.wlodarczyk-biegun@wur.nl</u>; <u>inge.storm@wur.nl</u>; <u>martien.cohenstuart@wur.nl</u>; <u>marleen.kamperman@wur.nl</u>

² Wageningen UR Food & Biobased Research, Bornse Weilanden 9,
NL-6708 WG Wageningen, The Netherlands; <u>marc.werten@wur.nl</u>; <u>frits.dewolf@wur.nl</u>

³ Faculty of Materials Science and Ceramics, Department of Biomaterials, AGH University of Science and Technology, Al. A. Mickiewicza 30, 30-059 Krakow, Poland; <u>uposadow@agh.edu.pl</u>

⁴ Department of Biomaterials, Radboudumc, Philips van Leydenlaan 25, NL-6525 EX Nijmegen, The Netherlands; <u>jeroen.vandenbeucken@radboudumc.nl</u>; <u>sander.leeuwenburgh@radboudumc.nl</u>

Correspondence to: marc.werten@wur.nl

Address: Wageningen UR Food & Biobased Research, NL-6708 WG Wageningen, The Netherlands

Phone: +31 317 483683

Fax: +31 317 483011



FIGURE 1. Rheometry of 2% gels of $C_2S^{H}_{48}C_2$ (A), $B^{KRSR}C_2S^{H}_{48}C_2$ (B) and $B^{RGD}C_2S^{H}_{48}C_2$ (C). Development of storage and loss modulus as a function of time during the first 10 min of the measurement. Gelation occurs when the storage modulus (G') exceeds the loss modulus (G''). The time involved in titration of the pH to 7.4, which induces self-assembly, and loading of the sample into the rheometer prior to the actual measurement is less than 5 min.



FIGURE 2. Cell morphology of fluorescently stained MG-63 cells on 0R/0K, 50R, 100R, 50K, 100K, and 50R/50K scaffolds after 1, 3, and 23 days of cell culture. Red: actin. Blue: nuclei. Scale bar = $100 \mu m$.