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Supplementary Information

Flow Simulation and Gradient Printing of Fluorapatite and Cell loaded Recombinant Spider Silk Hydrogels

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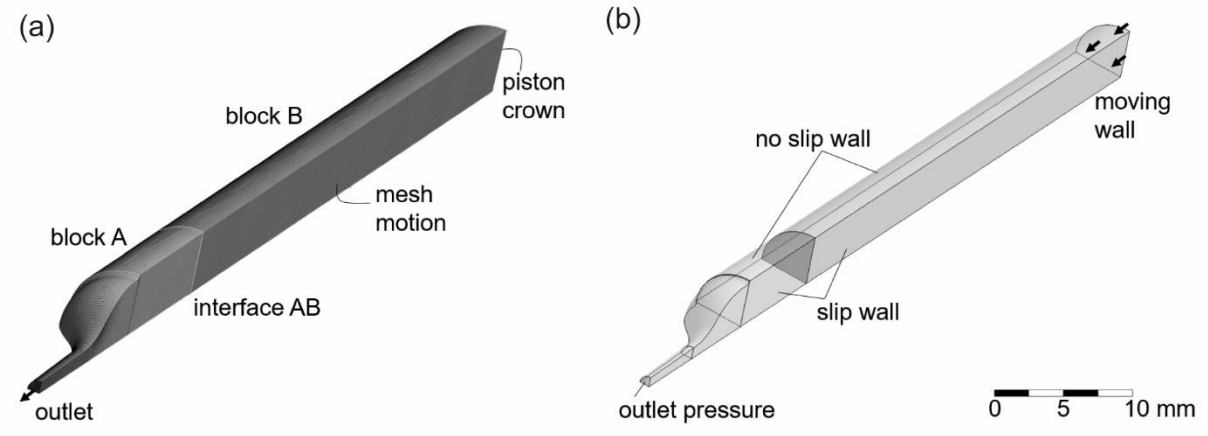


Figure S1. Cartridge model for the simulation of the a) AB block-system and mesh as slip wall and b) AB block boundary conditions.

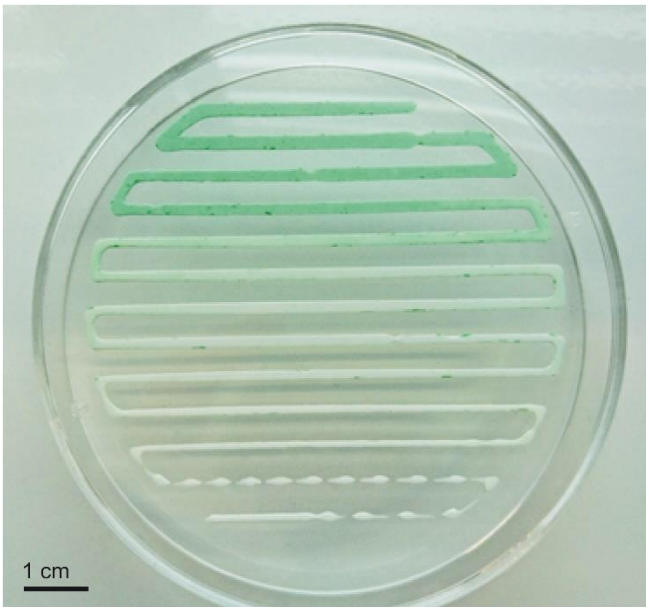


Figure S2. Photograph of 3D gradient printing results with coloured water-in-oil emulsion as an exemplary AB block system.

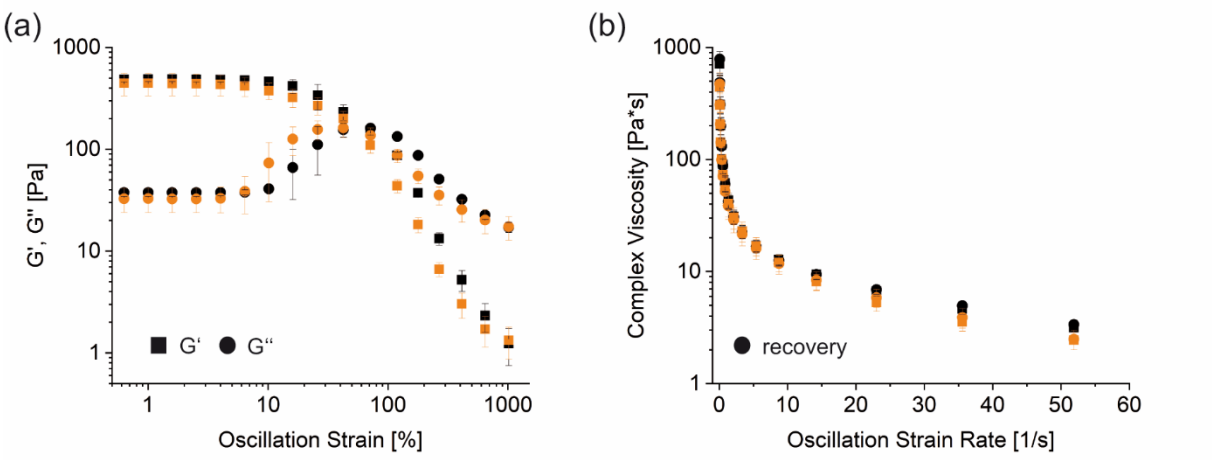
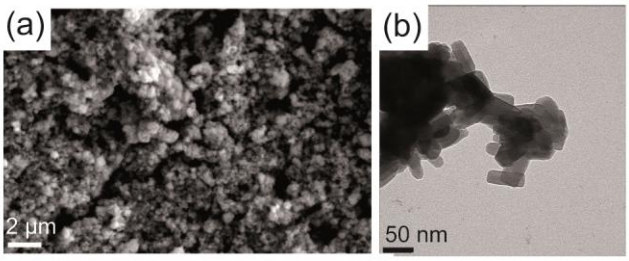


Figure S3. Rheological characterization of 3 % w/v eADF4(C16) (black) and eADF4(C16)/FITC-eADF4(C16) (orange) hydrogels: a) Mean amplitude sweep measurements with yield points at the G′ and G′′ cross-over. b) Mean frequency sweep measurements showing shear-thinning behaviour and recovery.



(c)

Atomic ratio [%]	Synthesized FAp	Stoichiometry FAp
Ca:F	5.117	5
Ca:P	1.633	1.667
Ca:O	0.503	0.417

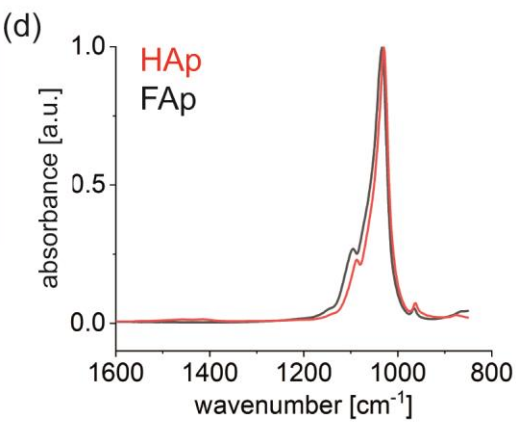


Figure S4. Characterization of fluorapatite (FAp) particles: a) SEM image of dry FAp particles. b) TEM images of FAp particles. c) SEM-EDX analysis derived atomic ratio of typical elements in FAp compared to its stoichiometry in %. d) Mean ATR-FTIR spectra overlay of synthesized FAp particles (black) with that of commercially available hydroxyapatite particles (red) as reference.

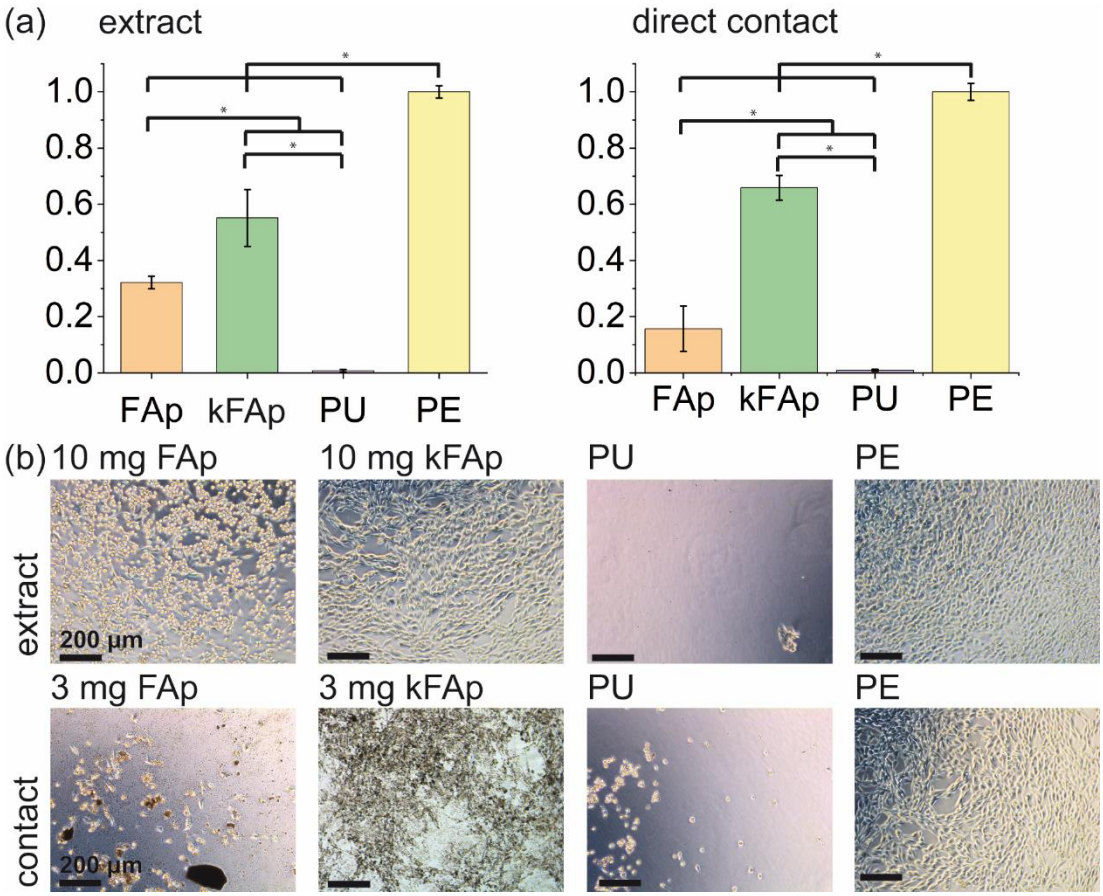


Figure S5. Cytotoxicity evaluation of uncoated (FAp) and eADF4(κ16)-coated (κFAp) fluorapatite particles according to DIN EN ISO 10993-5. a) Quantified viability using Cell Titer Blue assay and b) cell morphology of BALB/3T3 fibroblasts upon direct contact or upon contact with an extract of particles. High density polyethylene served as positive and organotin-stabilized polyurethane as negative control for extract and direct contact test (n=3 for all conditions). Extract and direct contact tests were analysed using light microscopy, scale bar 200 µm. κFAp refers to FAp particles coated with eADF4(κ16).