WILEY-VCH

ADVANCED HEALTHCARE MATERIALS

Supporting Information

3D-Printed Reinforcement Scaffolds with Targeted Biodegradation Properties for the Regeneration of Articular Cartilage
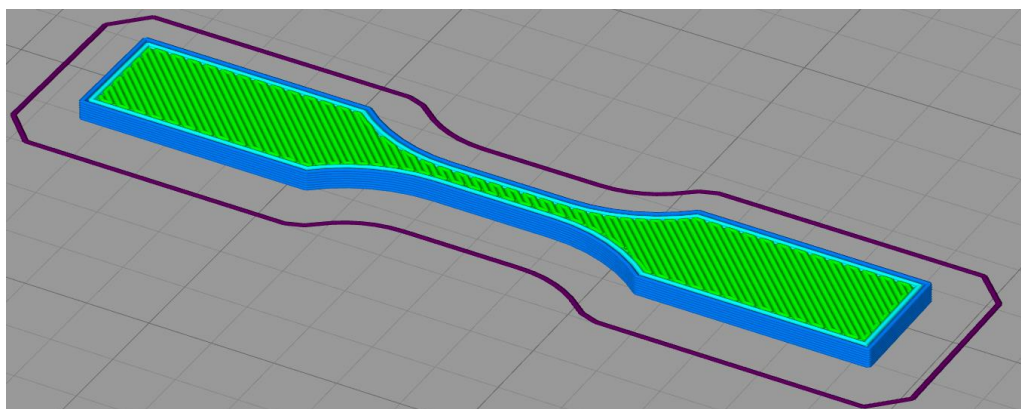
Enrico Tosoratti†, Philipp Fisch†, Scott Taylor, Lee Ann Applegate, Marcy Zenobi-Wong*
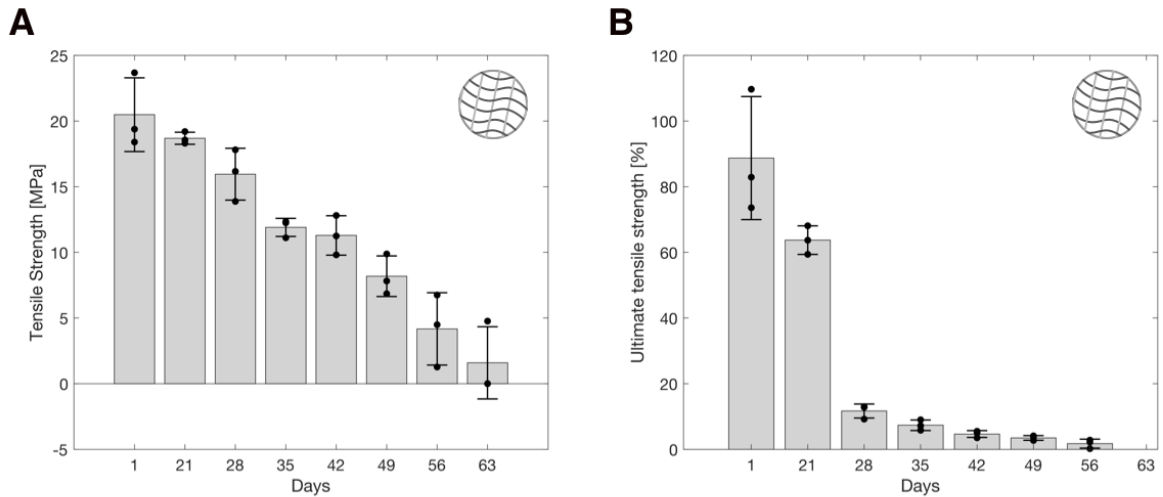
Supporting Information

3D-Printed Reinforcement Scaffolds with Targeted Biodegradation Properties for the Regeneration of Articular Cartilage

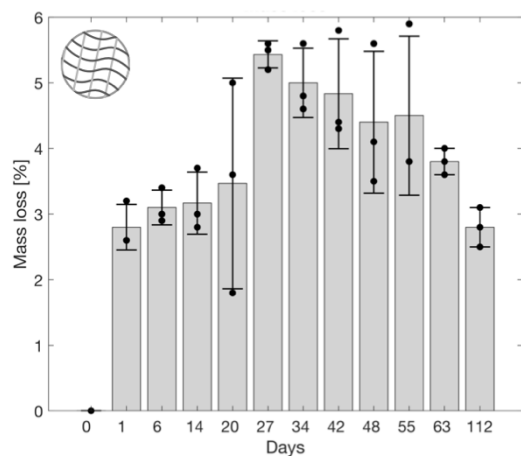*Enrico Tosoratti[†], Philipp Fisch[†], Scott Taylor, Lee Ann Applegate, Marcy Zenobi-Wong**

Figure S1

Figure S1: Sliced model. Sliced model of the 3D printed tensile bar for tensile strength and UTS analysis of Lactoprene® 7415.
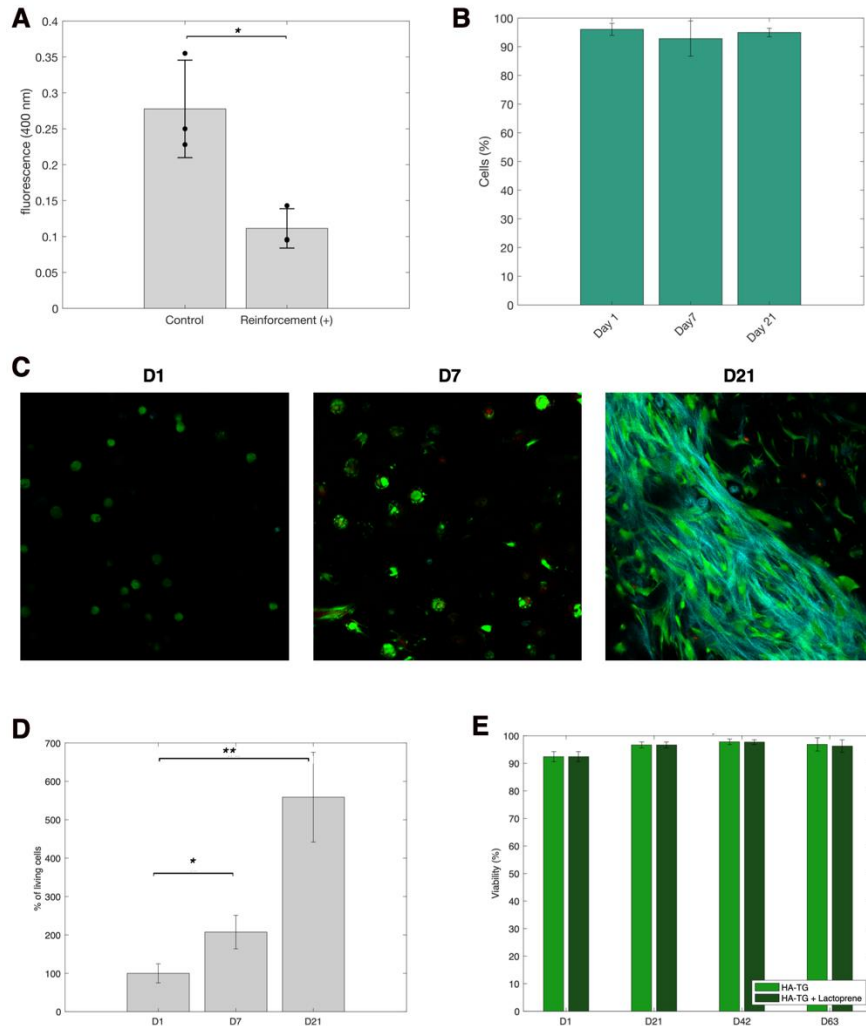
Figure S2

Figure S2: Mechanical data of 3D printed tensile bars of Lactoprene® 7415. A) Tensile strength. Each experimental data point was found statistically significant with respect to day 1, except for day 21 and day 28. B) Ultimate tensile strength. Each timepoint was found statistically significant with respect to day 1. Data represents mean and standard deviation of n=3 independent experiments. *P* values were calculated using a simple t-test.
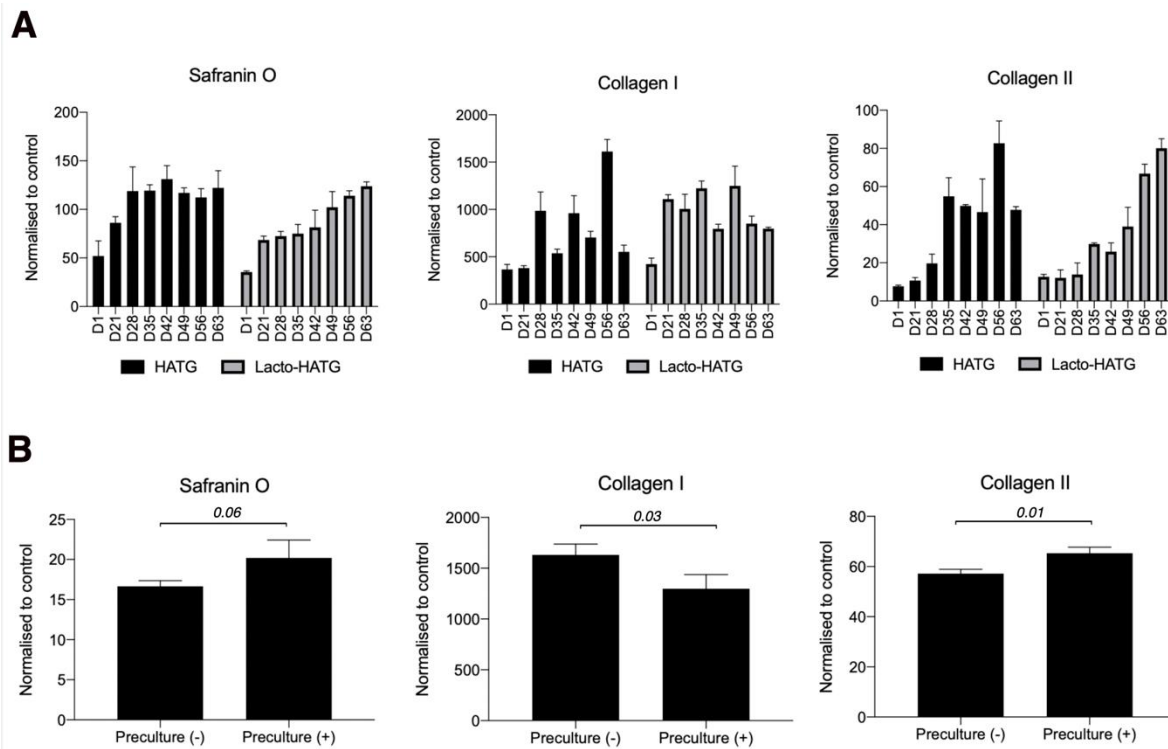
Figure S3

Figure S3: Mass loss in media of Lactoprene® 7415 3D printed samples. Data represents mean and standard deviation of n=3 independent experiments. Each timepoint was found statistically significant with respect to day 0. The *p* value was determined using a simple t-test.
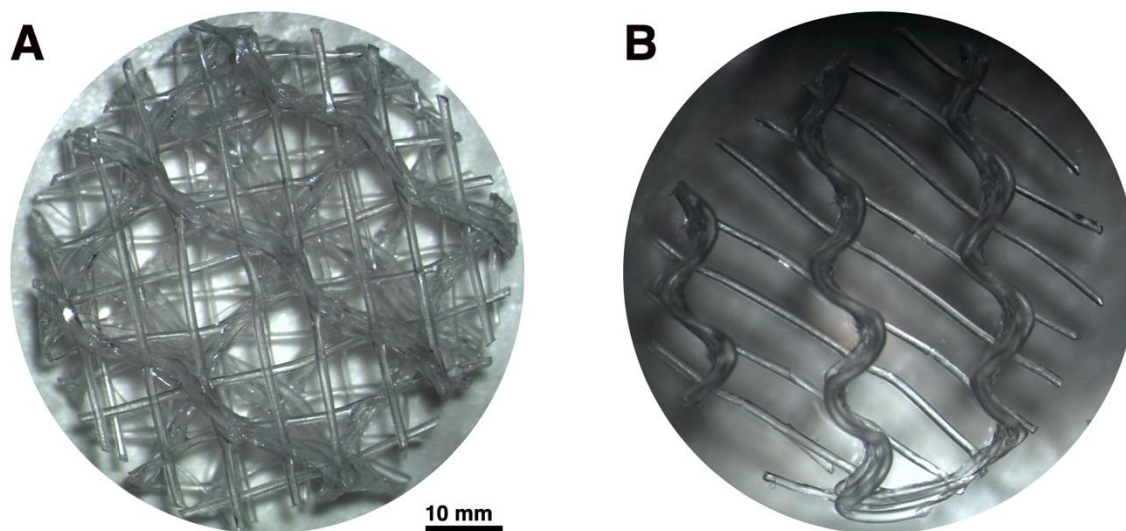
Figure S4

Figure S4: Preliminary's experiment. A) MTS assay. B) Viability quantification. C) Viability pictures at day 1, day 7 and day 21. D) Proliferation of Figure S4C. Data represents mean and standard deviation of n=3 independent experiments. The *p* value was determined a simple t-test.

Figure S5

Figure S5: Histology quantification. A) Quantification of Safranin O, Collagen I and Collagen II of the histological data of Figure 3B. B) Quantification of Safranin O, Collagen I and Collagen II of the histological data of Figure 4C. Data represents mean and standard deviation of n=3 independent experiments. The *p* value was determined using a simple t-test.

Figure S6

Figure S6: Porosity evaluation of the Lactoprene® 7415 3D printed samples. A) Top

view. B) View of the first two layers.