Supporting Information

3D maskless micropatterning for regeneration of highly organized tubular tissues

*Chi Ma, Tiejun Qu, Bei Chang, Yan Jing, Jerry Q. Feng, and Xiaohua Liu**

Department of Biomedical Sciences, Texas A&M University College of Dentistry, Dallas, TX, 75246, USA

*Correspondence to:

Xiaohua Liu, PhD
Associate Professor
Department of Biomedical Sciences
Texas A&M University Baylor College of Dentistry
3302 Gaston Ave., Dallas, TX 75246
Phone: 214-370-7007
Fax: 214-874-4538
Email: xliu@tamhsc.edu

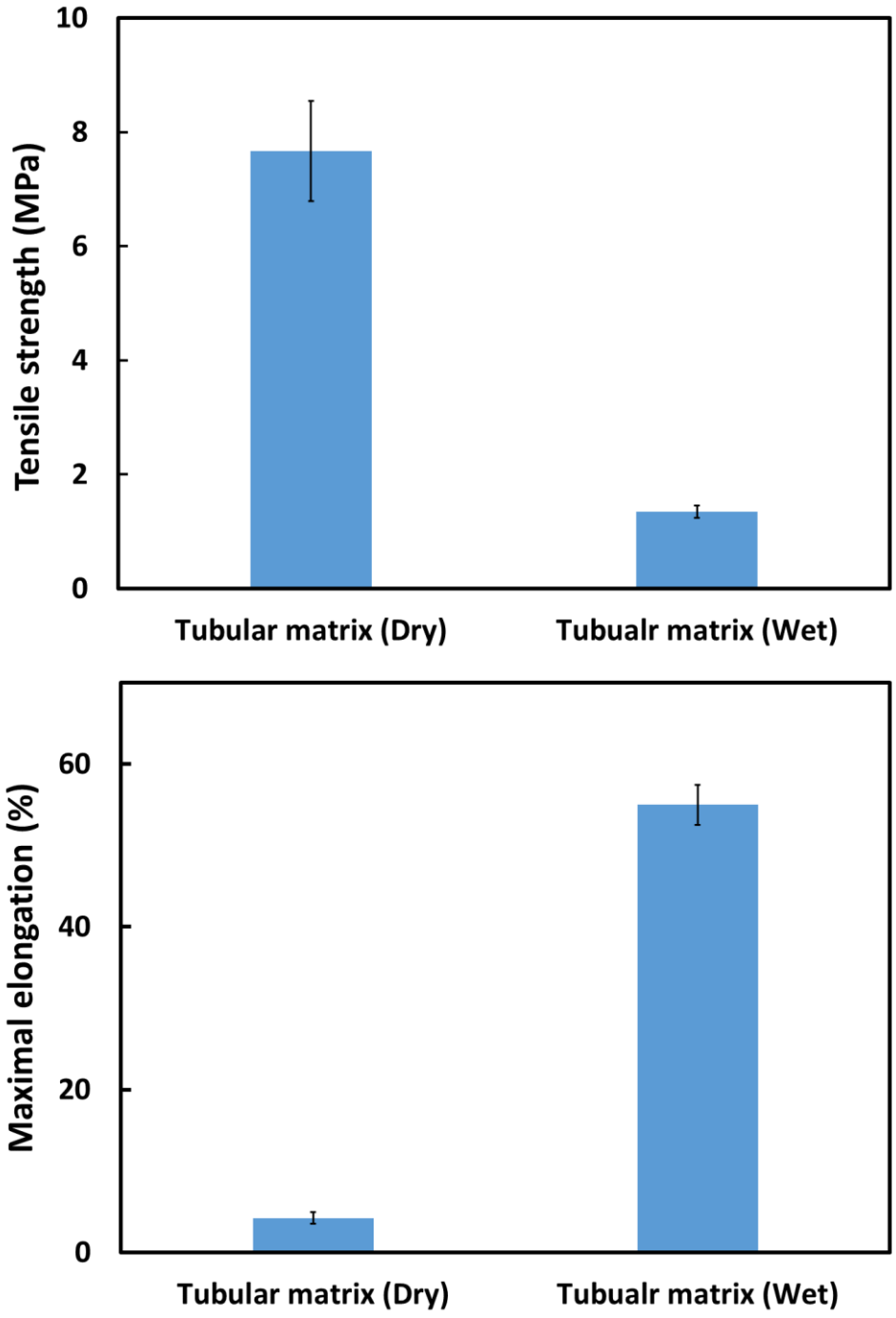

Figure 1S Mechanical strength of 3D nanofibrous tubular gelatin matrices. (a) Tensile strength under dry and wet conditions. (b) Maximal elongation percent under dry and wet conditions. The matrices had a thickness of 100 μm, a tubule density of 20,000/mm^2 and a pore size of 2-5 μm. The averages and standard deviations were reported (n = 3).

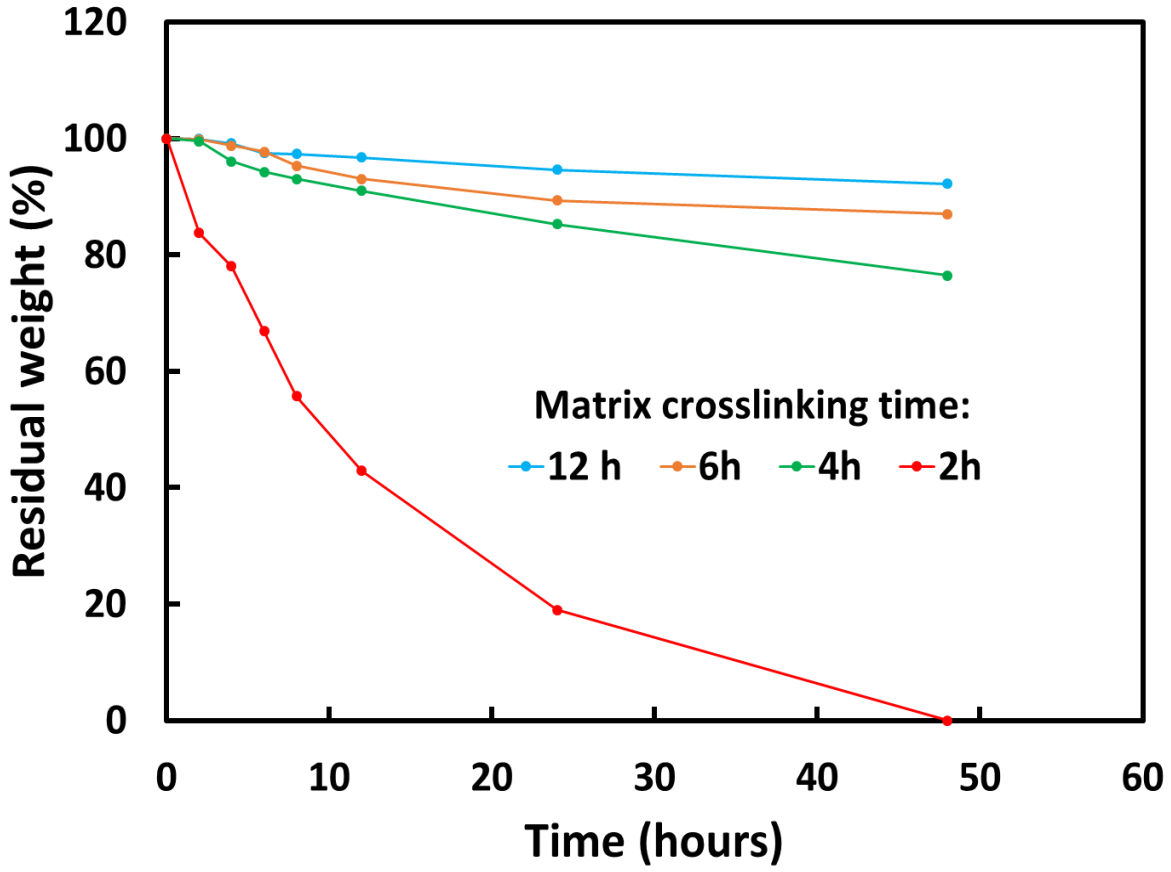

Figure S2 *In vitro* degradation of 3D nanofibrous tubular gelatin matrices. Ten milligrams of the gelatin matrix was weighed precisely and incubated in 2 ml of the PBS medium with the collagenase concentration of 10 unit/ml, and the fresh medium was changed every 12 h. At each time point, the samples were washed with distilled water for 5 times and dried in vacuum till constant weight and record as the residual weight.

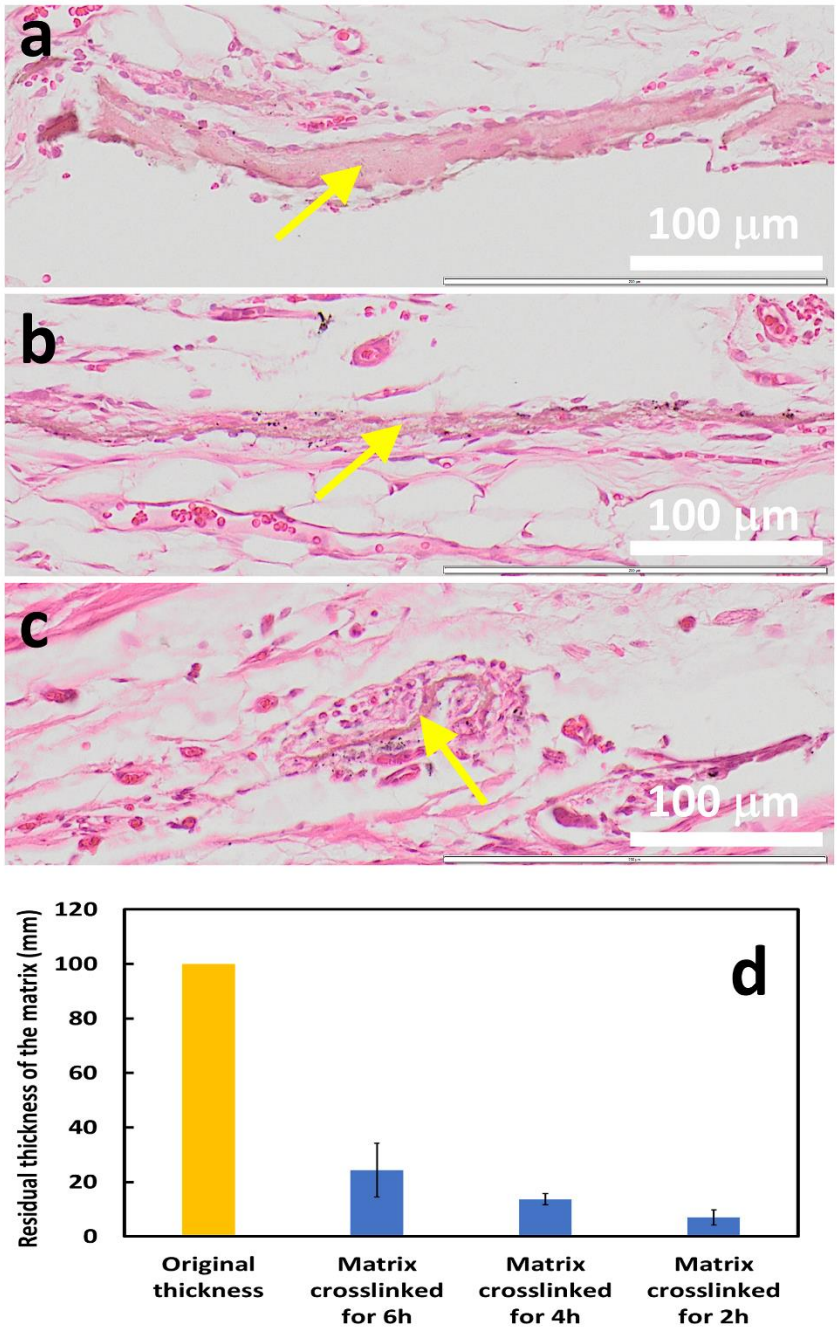

Figure S3 *In vivo* degradation of 3D nanofibrous tubular gelatin matrices after subcutaneously implanted in Sprague Dawley® rats for 6 weeks. The matrices were crosslinked for (a) 6h, (b) 4h; and (c) 2h, during the fabrication process. Each matrix had an original thickness of 100 μm prior to implantation. In the H&E histological images of (a-c), the yellow arrows indicate the residual gelatin matrices. (d) Quantitative analysis of the residual thickness of the gelatin matrices. The residual thickness of the matrices was calculated using the ImageJ software and the averages and standard deviations were reported (n = 3).