Supplementary Materials

3D mechanical environment and chemical milieu influence hMSC fibrogenesis and fibroblast-to-myofibroblast transition

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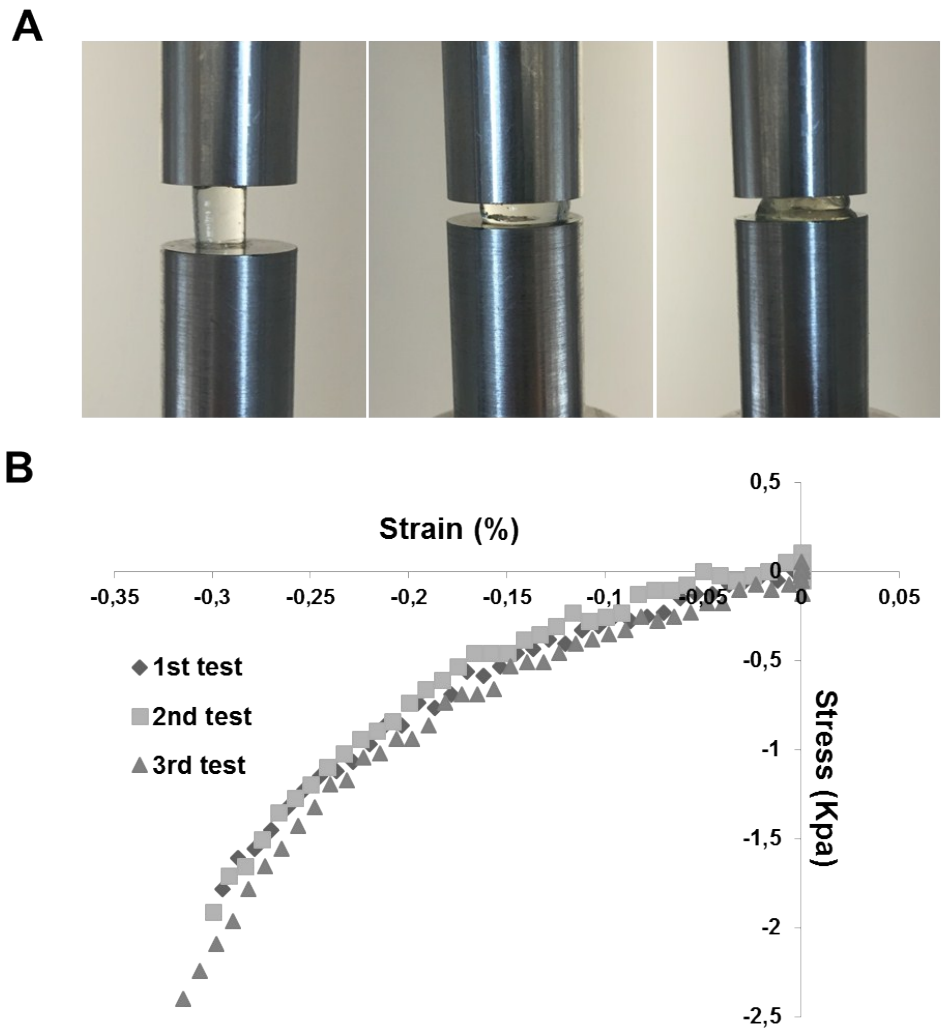
Methods and materials

Measurement of PEG- fibrinogen hydrogel mechanical compression

Compressive modulus was used as a measure of PEG-hydrogel stiffness. For each formulation, 300 µl of PEG-hydrogel solution was polymerized at room temperature in a 96 well plate, with a diameter at 7 mm and height at 12 mm. PEG-hydrogels were exposed under long-wave UV light (365 nm, 4-5 W/cm^2) for 9 minutes to perform the cross-linking prior to testing. Mechanical compression test was carried out using Bose 3200, in order to determine the mechanical properties of the PEG-hydrogel. The test was carried out 3 times at room temperature. The test rate was 0.2 mm/sec and the sample was pressed for 5 mm [1]. Stress strain graphs was plotted, this was done to get the elastic modulus of the sample, as the results of the load was in grams. The stress, σ, was calculated by $\sigma = \frac{\left(\frac{Grams * 9{,}82}{1000} * 1000\right)}{Area}$. The Strain was calculated as $\varepsilon = \frac{\Delta L}{L}$. The elastic modulus was measures as the slope, in the linear phase of the stress strain graph [2].

Figure S1



[1] Torres AL, Gaspar VM, Serra IR, Diogo GS, Fradique R, Silva AP, et al. Bioactive polymeric–ceramic hybrid 3D scaffold for application in bone tissue regeneration. Materials Science and Engineering: C. 2013;33:4460-9.
[2] Sun F, Lin M, Dong Z, Zhang J, Wang C, Wang S, et al. Nanosilica-induced high mechanical strength of nanocomposite hydrogel for killing fluids. Journal of Colloid and Interface Science. 2015;458:45-52.