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/cm²) 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, $\sigma$, was calculated by $\sigma = \frac{(\text{Grams} \times 9.82 \times 1000)}{\text{Area}}$. The Strain was calculated as $\varepsilon = \frac{\Delta L}{L}$. The elastic modulus was measured as the slope, in the linear phase of the stress strain graph [2].