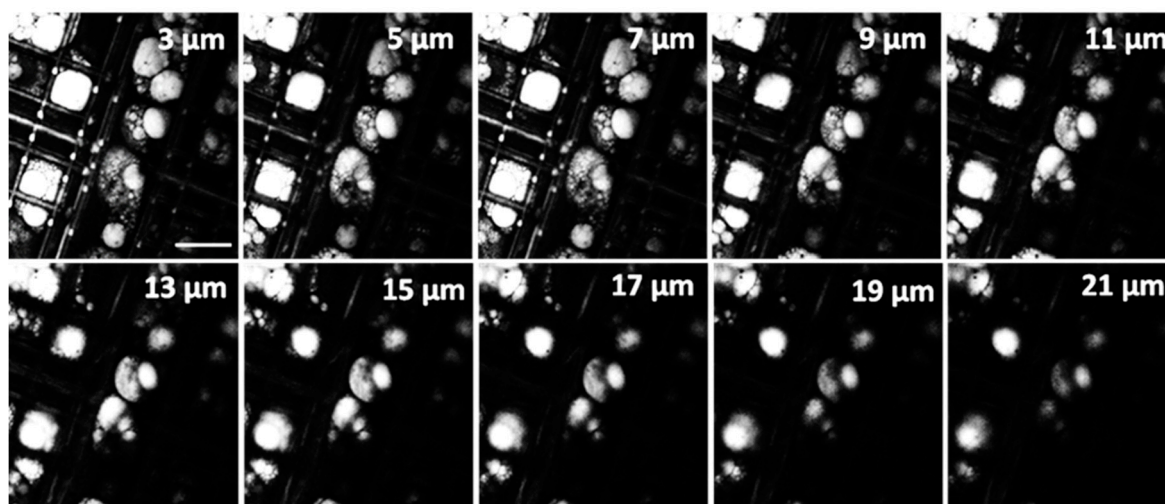


# Characterization of Mesenchymal Stem Cell Differentiation within Miniaturized 3D Scaffolds through Advanced Microscopy Techniques – Supplementary Materials

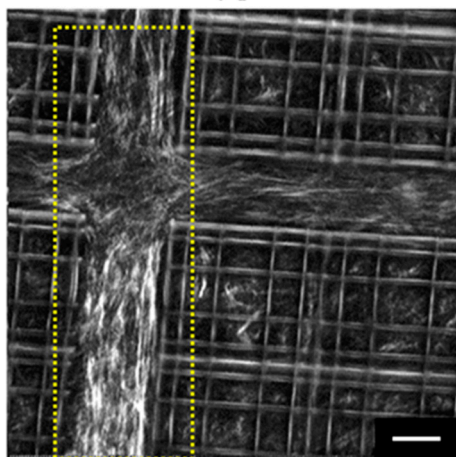
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**Figure S1.** CARS images ( $140 \times 140 \mu\text{m}^2$ ) of lipid droplets at  $2845 \text{ cm}^{-1}$  obtained by sectioning vertically every  $2 \mu\text{m}$  of  $21 \mu\text{m}$  of thickness the same area of the 3D sample at day 14 from the beginning of the differentiation. Scale bar  $15 \mu\text{m}$ .

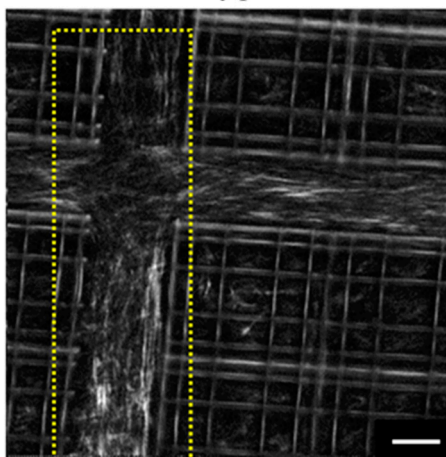
A)

Vertically polarized



B)

Circularly polarized



**Figure S2.** SHG images of the same area of vital and unlabeled MSCs chondrogenesis inside Nichoids at 21 days from the beginning of the differentiation, obtained by irradiating the sample with vertically polarized light (A) and with circularly polarized light (B) by positioning a  $\lambda/4$  waveplate upstream

with respect to the focusing objective. Highlighted by yellow region of interest (ROIs) the vertical region in which an evident decrease in signal intensity appeared while using a circular polarizer. Scale bars 30  $\mu\text{m}$ .