ACCSCIENCE PUBLISHING

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RESEARCH ARTICLE

Coaxial 3D printing of hollow tubular sodium alginate/ polyacrylamide double-network hydrogel scaffolds

Supplementary File

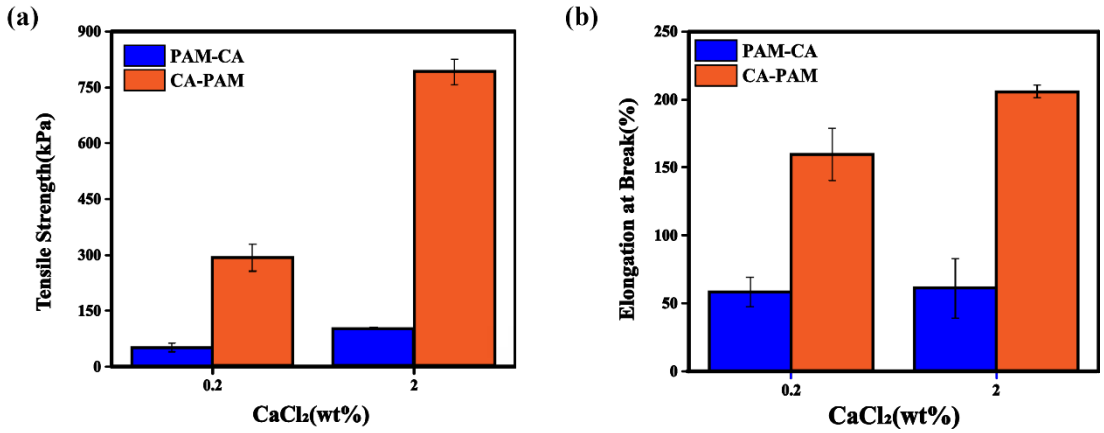

Figure S1. (a) Tensile strength of PAm-CA and CA-PAm hydrogels crosslinked by $CaCl_2$ at different concentrations; (b) Elongation at break of PAm-CA and CA-PAm hydrogels crosslinked with different concentrations of CaCl2.

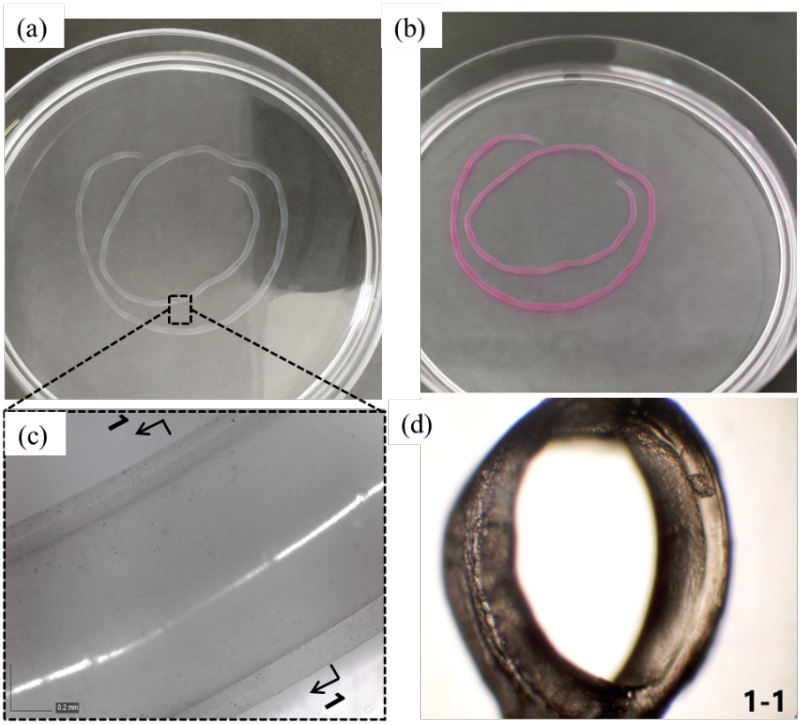

Figure S2. CA-PAm hollow hydrogel tube: (a) tube in tap water; (b) perfusion with colored food dyes; (c) microscopic image of the tube. Scale bars: 0.2 mm; magnification: 30×; (d) microscopic image of the cross-section.

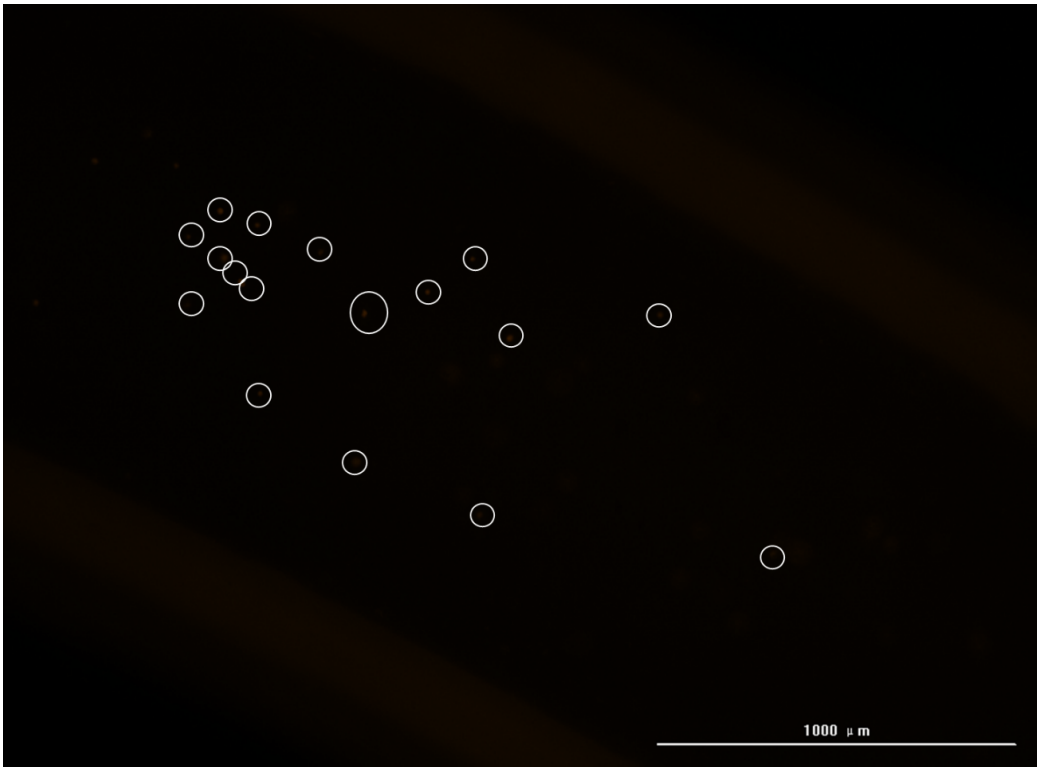

Figure S3. Red-fluorescence images of dead cells after 3 days of culture. Scale bars: 1,000 μm; magnification: 20×.

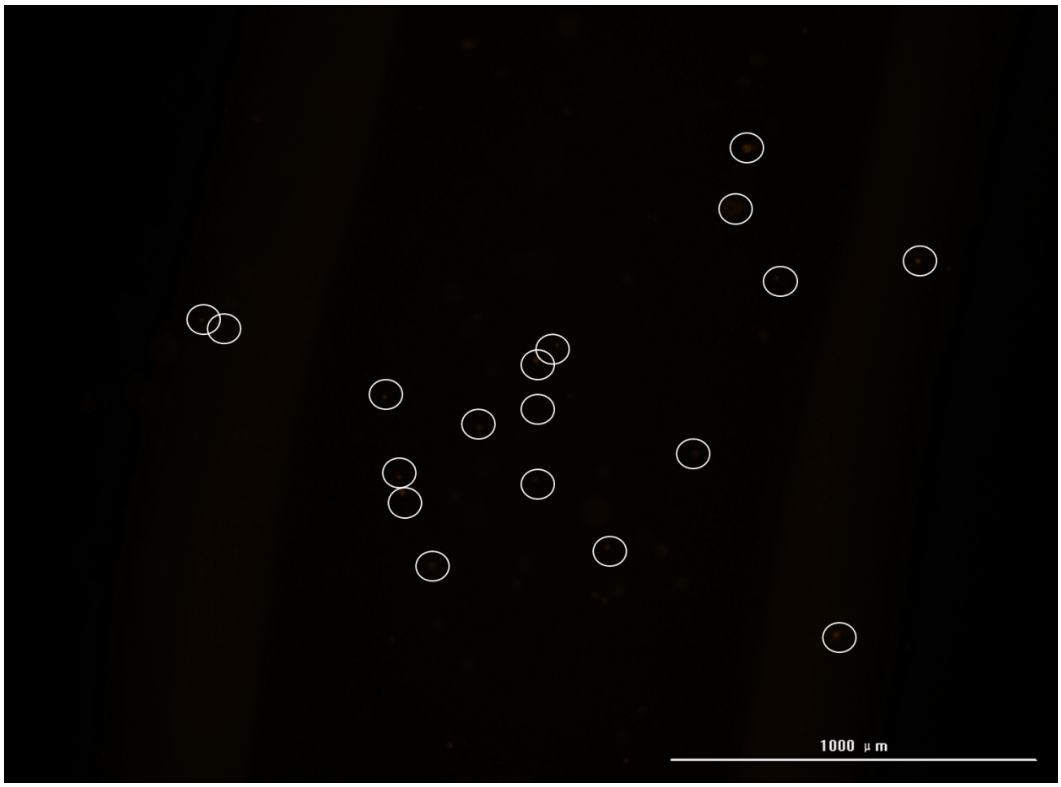

Figure S4. Red-fluorescence images of dead cells after 5 days of culture. Scale bars: 1,000 μm; magnification: 20×.

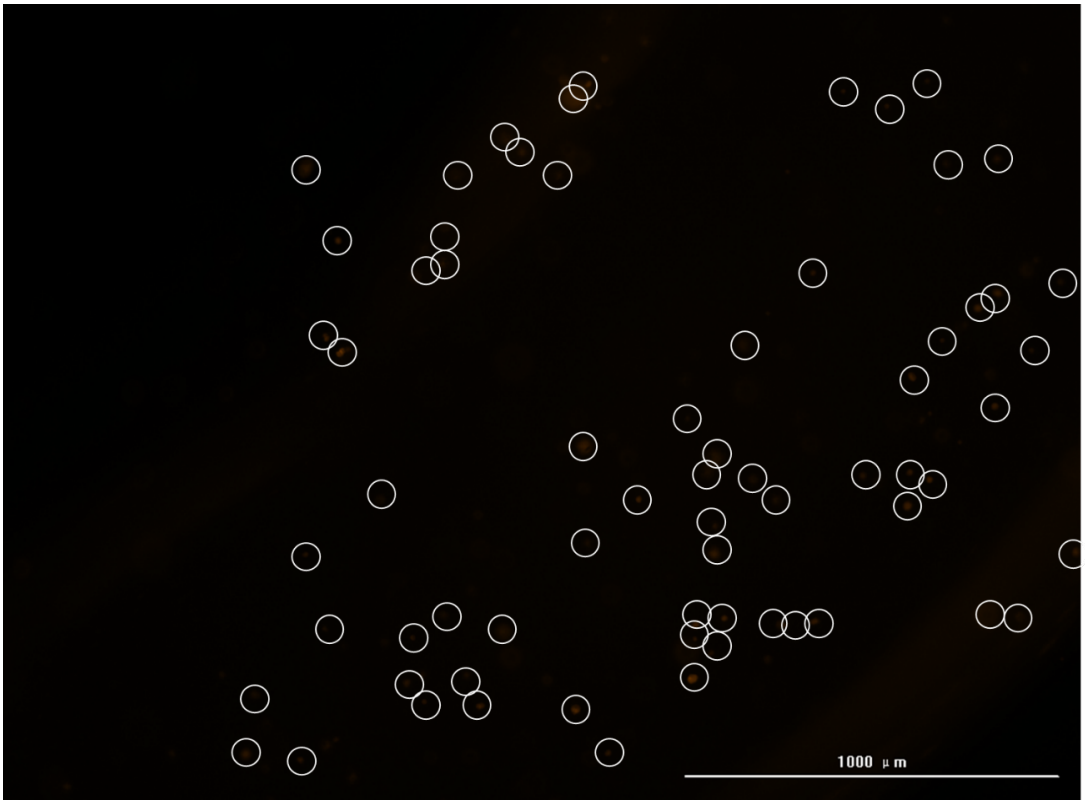

Figure S5. Red-fluorescence images of dead cells after 7 days of culture. Scale bars: 1,000 µm; magnification: 20×.

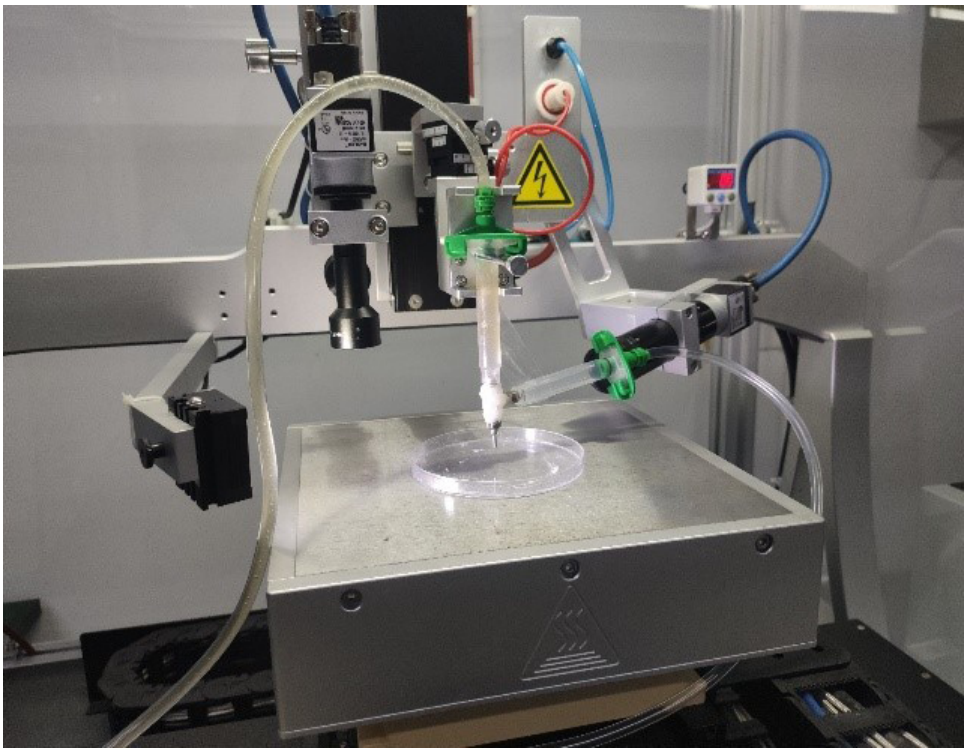

Figure S6. Printing setup used for coaxial extrusion-based fabrication of hollow tubular hydrogel scaffolds

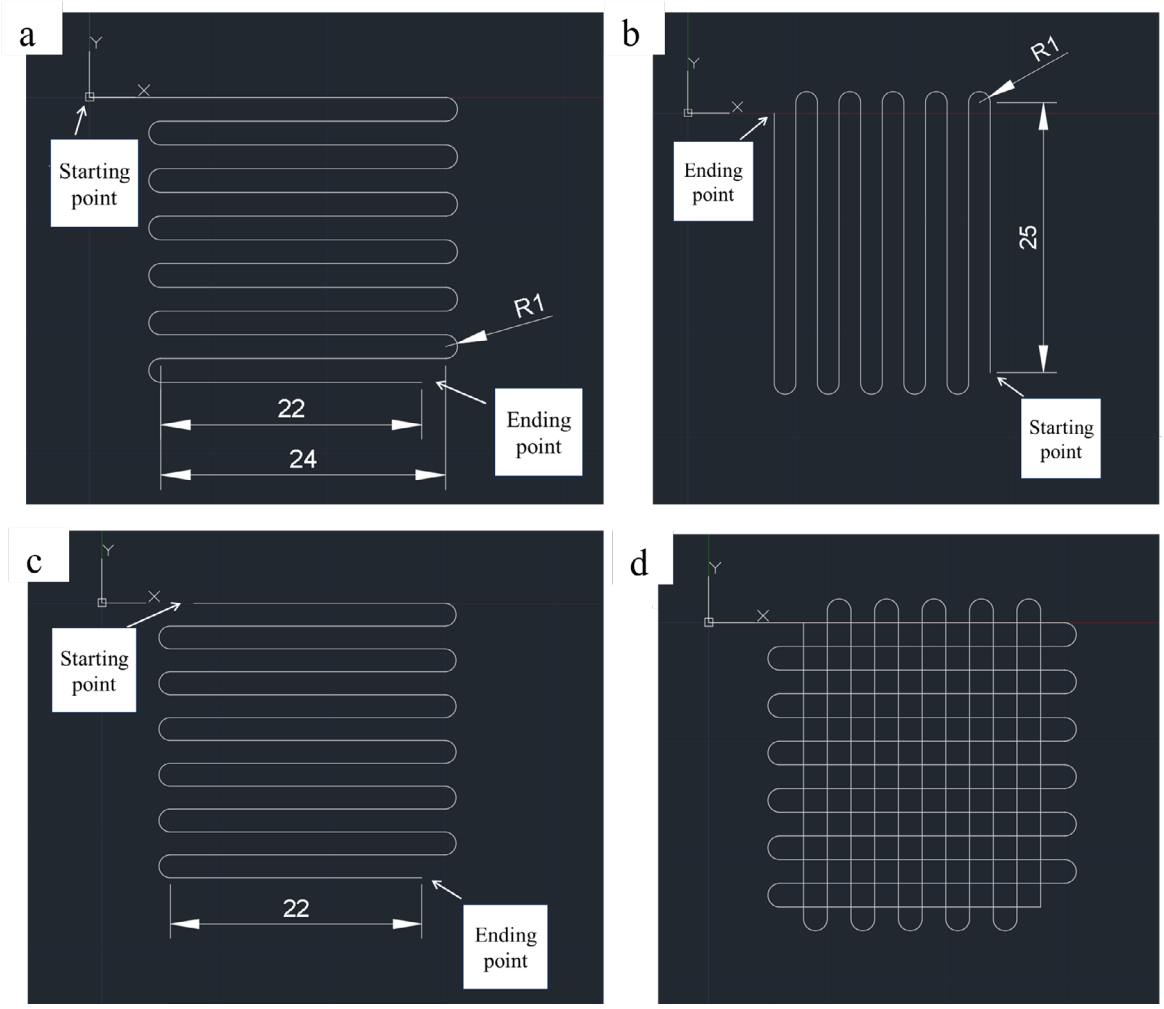

Figure S7. Multilayer hollow tubular structure printing path. (a) First layer; (b) Even-numbered layers; (c) Odd-numbered layers; (d) Combined multilayer path.