

ORIGINAL RESEARCH ARTICLE

Three-dimensional (3D) bioprinting of coral-polyp bio-skin using ultrashort and biofunctionalized peptide bioinks for transplantation on coral skeletons

Supplementary File

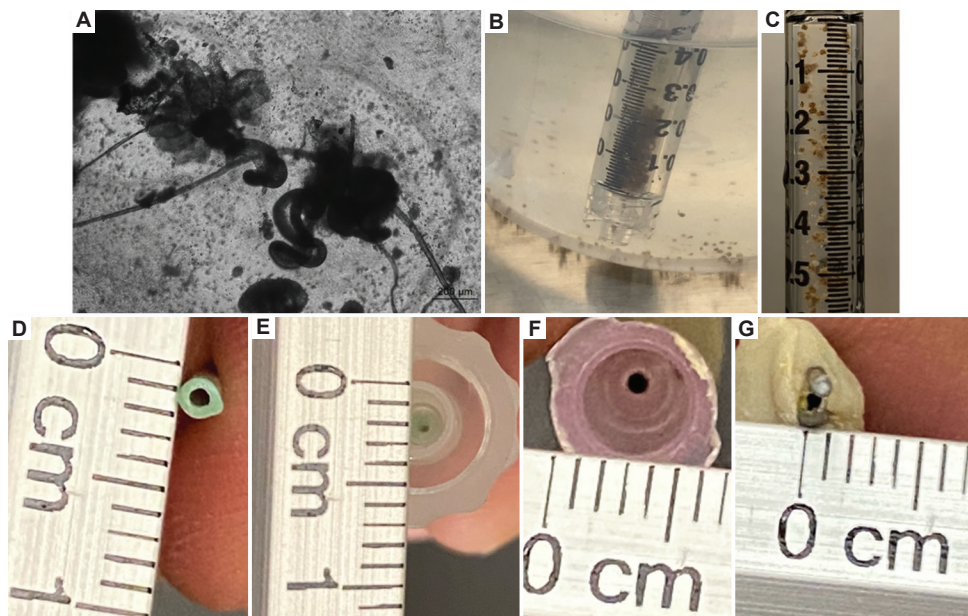


Figure S1. Optimization of 3D bioprinting parameters for polyp-laden bioprinting with *Stylophora pistillata* polyps after bail-out. (A) 3D-bioprinted polyps in bioink. (B) Collection of polyps after bail-out. (C) Individual polyps loaded in a syringe. Optimization parameters: tubing diameter (D), connectors (E), needle (F), and nozzle tip (G).

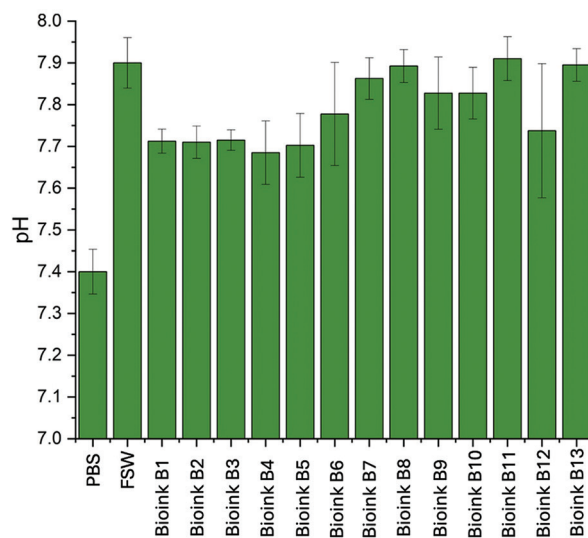


Figure S2. pH measurements of the different bioinks after mixing filtered seawater (FSW) with phosphate-buffered saline (PBS) at a 1:10 ratio

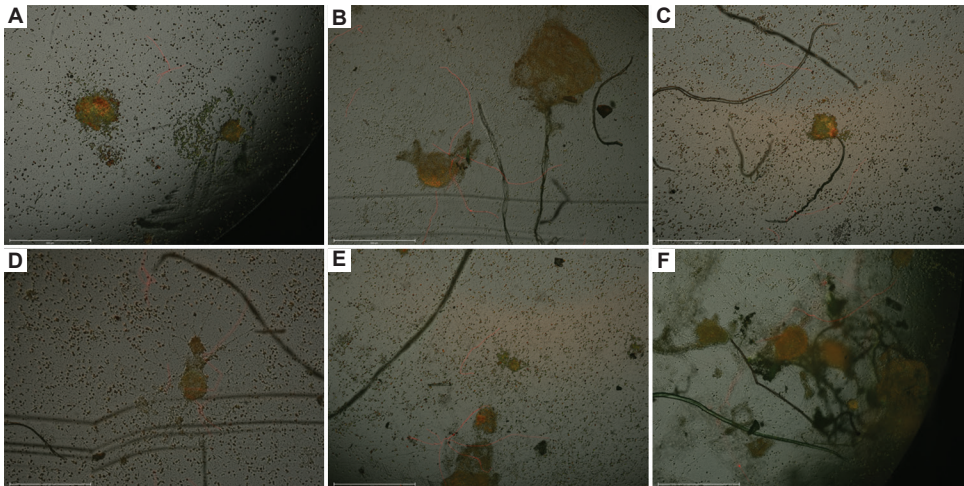


Figure S3. (A-F) Suspended *Stylophora pistillata* polyps cultured using a fed-batch strategy on Day 6. Scale bars: 600 μm ; magnification: 10 \times .

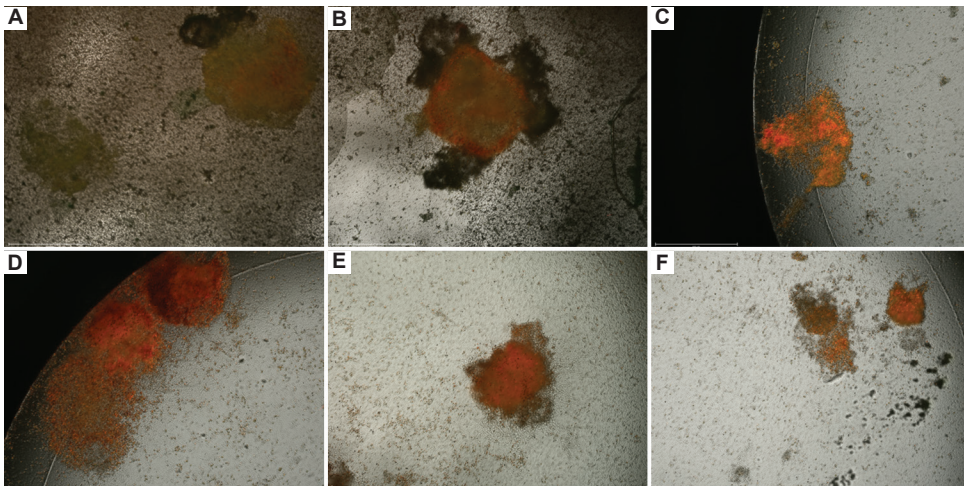


Figure S4. (A-F) Suspended *Pocillopora verrucosa* polyps cultured using a fed-batch strategy on Day 6. Scale bars: 600 μm ; magnification: 10 \times .

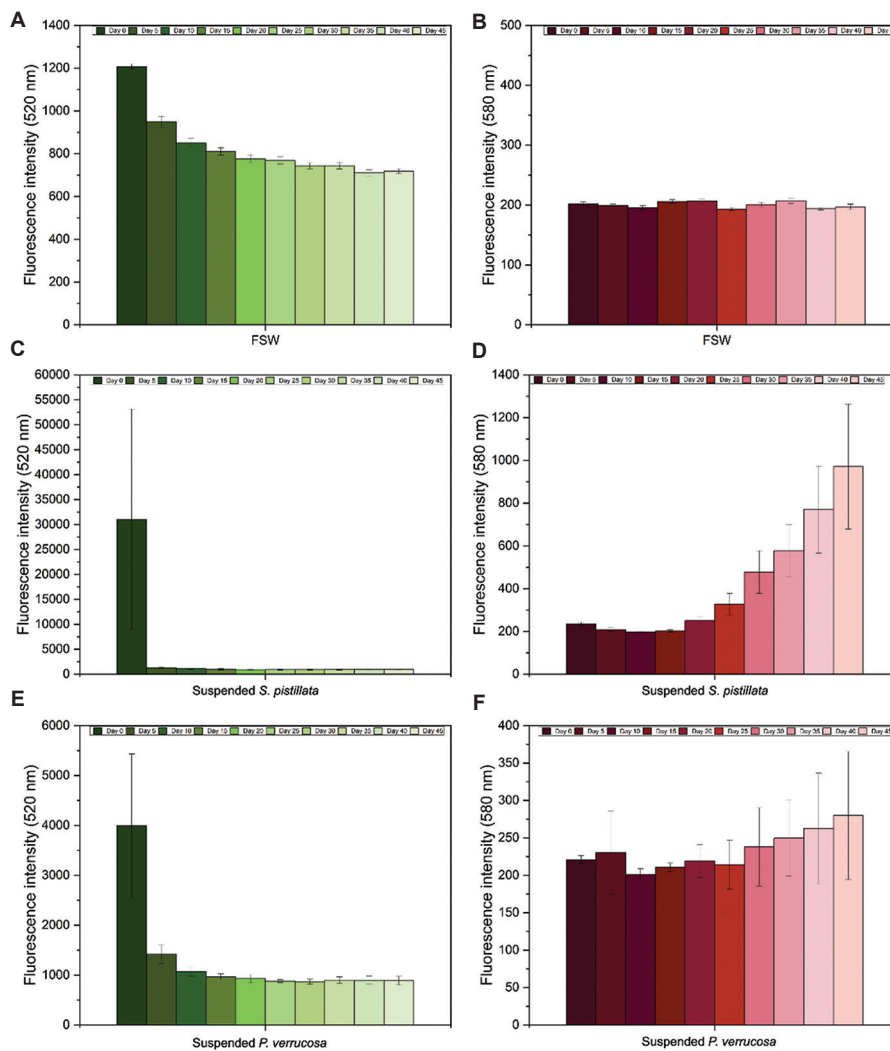


Figure S5. Green and red fluorescence intensity from filtered seawater (A and B), suspended *Stylophora pistillata* polyps (C and D), and *Pocillopora verrucosa* polyps (E and F)

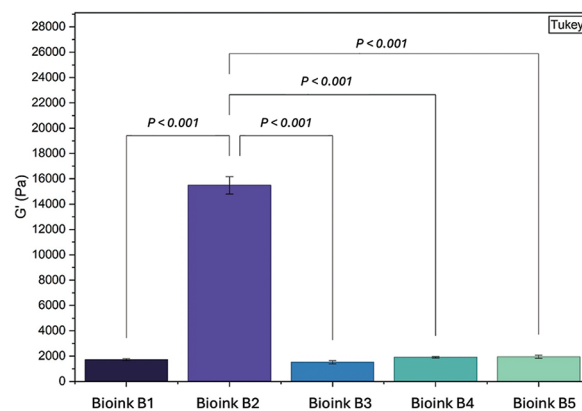
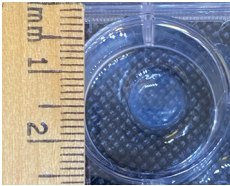
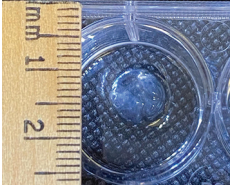
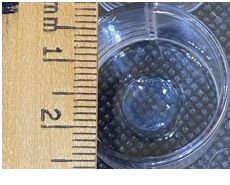
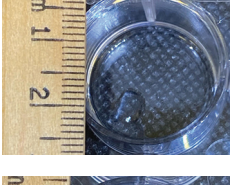
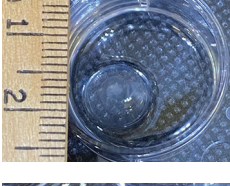
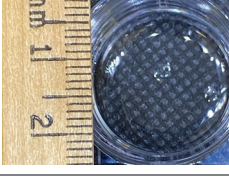


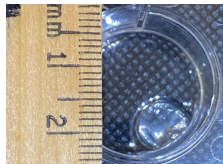
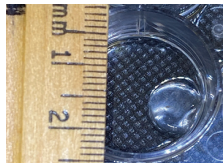
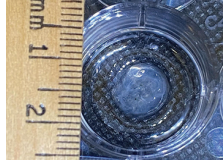


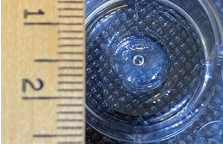
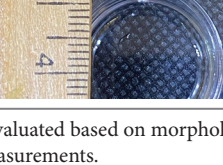
Figure S6. Tukey test of the storage modulus of the bioinks after 30 days of seawater submersion

Table S1. Bioink stability after 30 days of submersion in filtered seawater at 27°C

Bioink	Stability after 30 days
B1	
B2	
B3	
B4	
B5	
B6	

(Cont'd...)

Table S1. (Continued)

Bioink	Stability after 30 days
B7	
B8	
B9	
B10	
B11	
B12	
B13	

Note: Polyp viability was evaluated based on morphological assessment and tissue fluorescence measurements.