

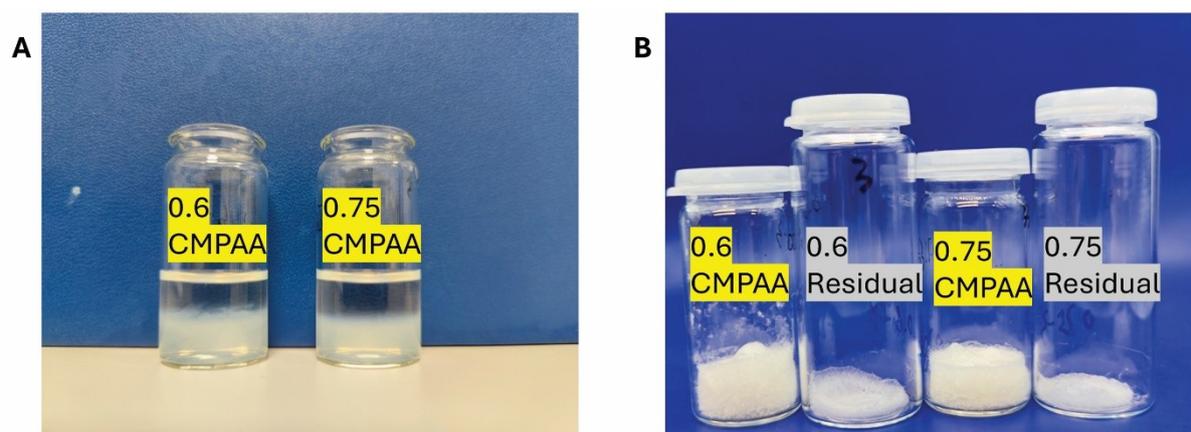
### Photocurable cellulose nanofibers and its copolymer with polyacrylamide as microgels to support 3D cell cultivation

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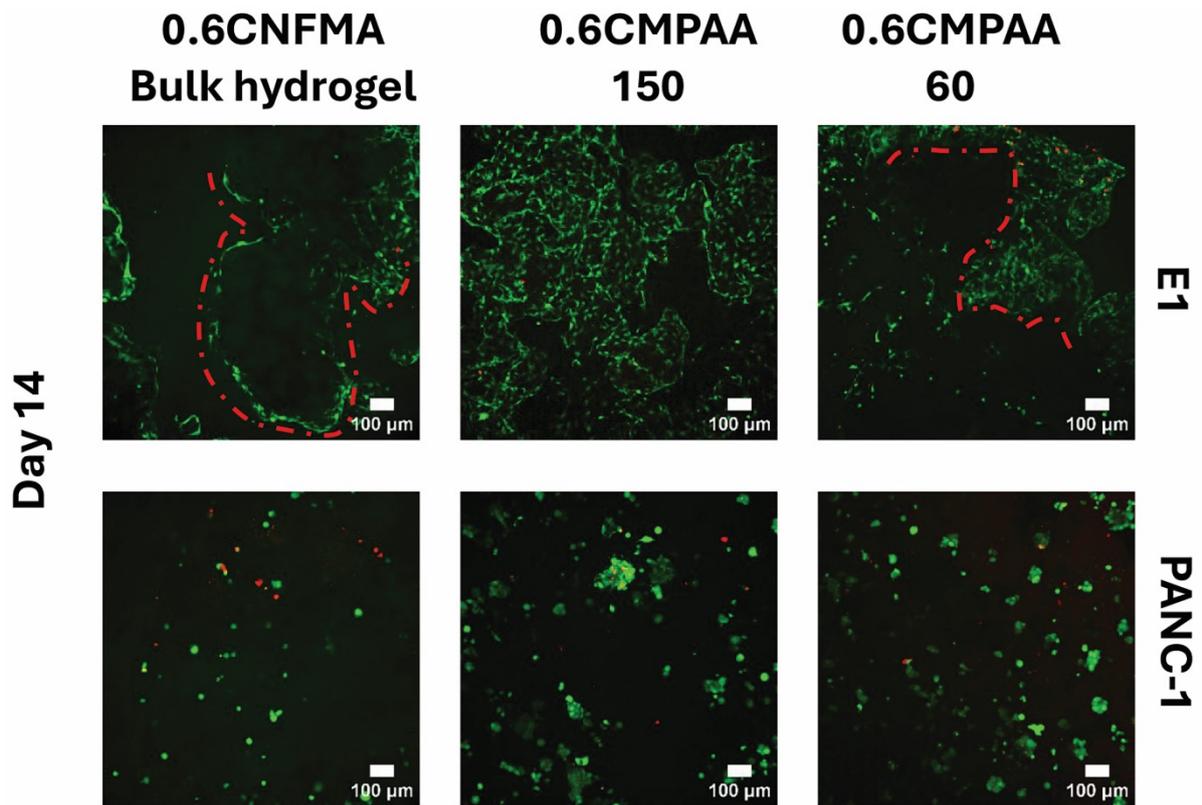
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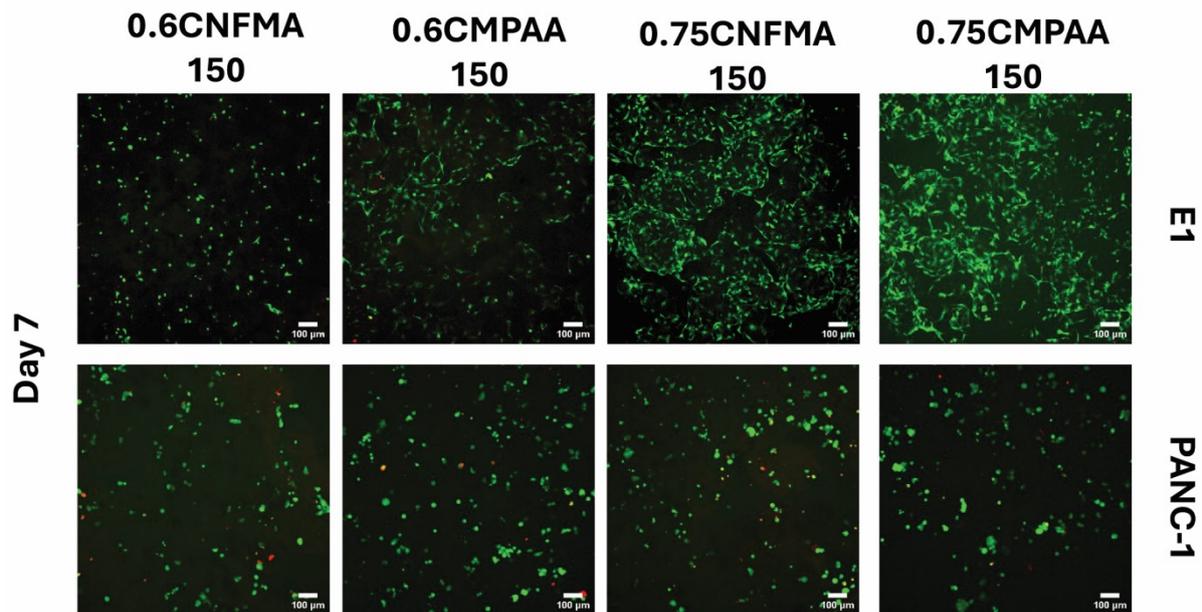
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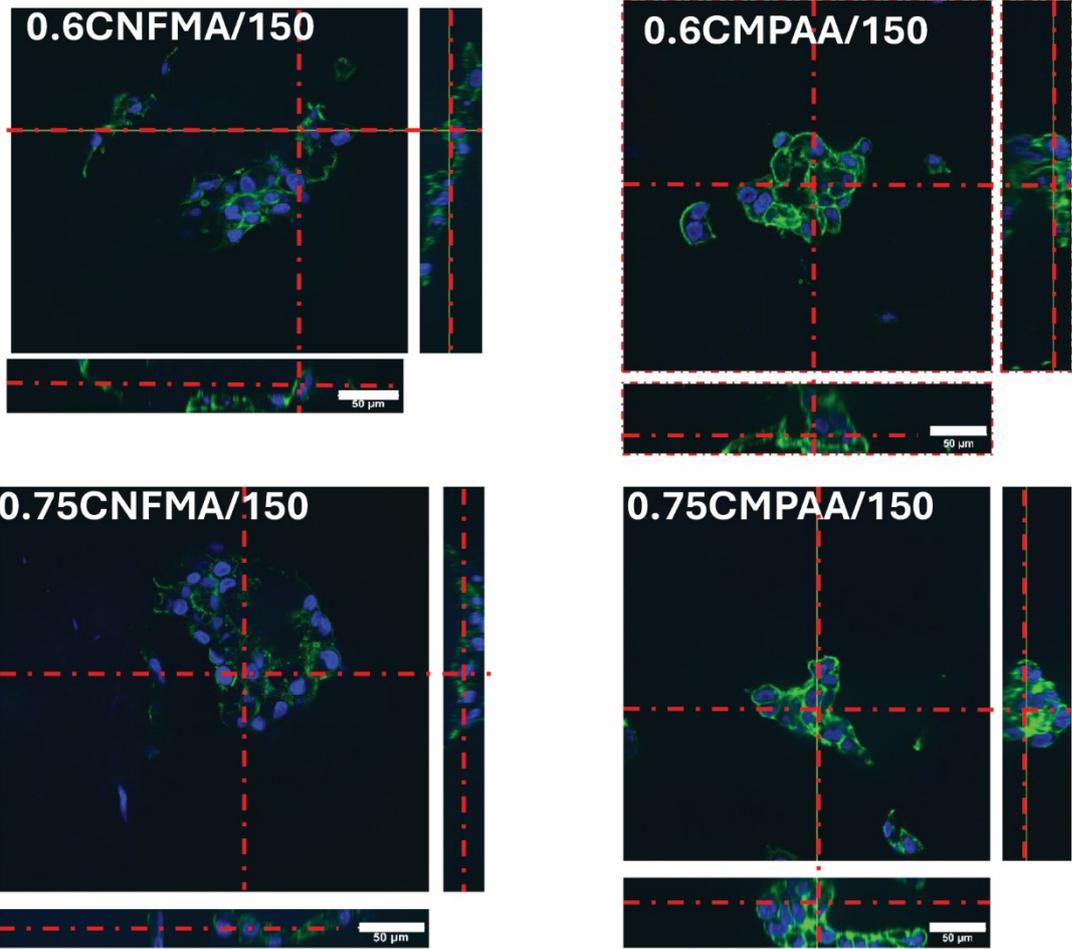
**Figure S1:** Evaluation of PAA grafting in 0.6/0.75 CMPAA granular hydrogels. A) Granular hydrogels washed with Milli-Q water. B) Granular hydrogels and the water residual after freeze-drying.



**Figure S2:** Representative fluorescence microscopy images of live/dead staining of E1 and PANC-1 cells on day 14 (live cells: green, dead cells: red). The bulk hydrogel was formed by photo-crosslinking as a reference sample, and cells predominantly grew along the edges or surface. Compared to 0.6CMPAA/150, in the granular hydrogel prepared from microgels passed through a 60  $\mu\text{m}$  mesh, E1 cells primarily grew along the edges due to dense packing, whereas PANC-1 cells formed smaller spheroids.



**Figure S3:** Representative fluorescence microscopy images of live/dead staining of E1 and PANC-1 cells on day 7 (live cells shown in green, dead cells in red). Compared to other hydrogels, the 0.6CNFMA/150 sample exhibited predominantly rounded E1 cells rather than an extended morphology.



**Figure S4:** Orthogonal views of fluorescence microscopy images showing cytoskeleton staining of PANC-1 cells on day 14 (Nuclei: blue, F-actin: green, scale bar: 50 μm).