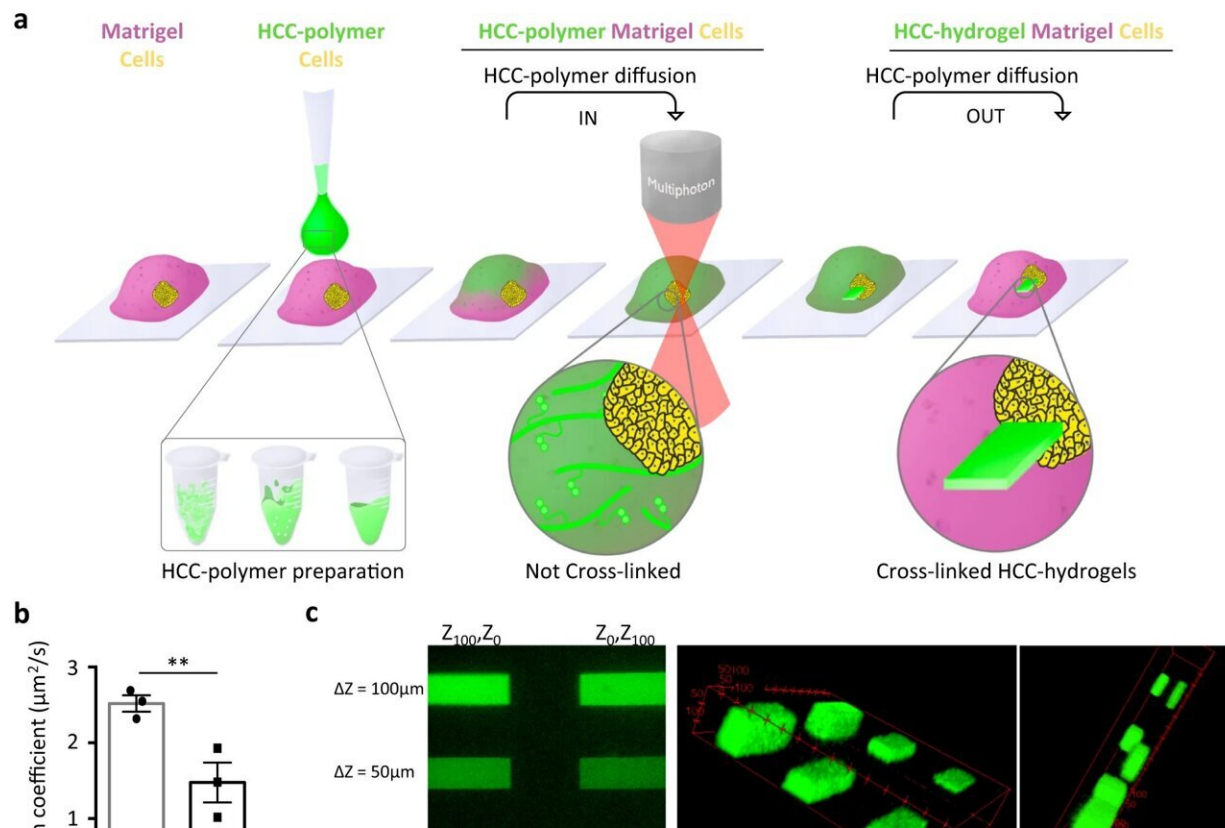


# Scientists demonstrate 3D 'bio-printing' inside organoids growing in hydrogels

June 9 2023



Performance of hydrogel-in-hydrogel printing. **a** Strategy and set-up for hydrogel-in-hydrogel live bioprinting. HCC-hydrogel 2P-printing can be performed within solid gel of a 3D organ-like culture at any experimentally required time point of cell growth by (i) allowing liquid HCC-polymers to diffuse within the pre-existing solid gel, (ii) fabricating 3D hydrogel objects by using a multiphoton microscope equipped with a motorized xyz stage and a femtosecond near-infrared tightly-focused pulsed laser emission, (iii) removing the un-crosslinked HCC-polymers from the 3D organ-like culture via diffusion.

**b** Quantification of the diffusion coefficient of 40 (gray) or 500 (black) kDa FITC-dextran within Matrigel. Data are shown as mean  $\pm$  s.d. of three independent replicates; unequal variance Student's *t*-test; \**P*

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