ADVANCED HEALTHCARE MATERIALS

Supporting Information

for *Adv. Healthcare Mater.*, DOI 10.1002/adhm.202201581

Biofabrication of Modular Spheroids as Tumor-Scale Microenvironments for Drug Screening

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Supplementary Information:

Using Automated 3D Bioassembly of Modular Tissue Units to Increase the Predictive Power of Preclinical Cancer Models in Drug Discovery

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Figs. S1 – S4
Table S1

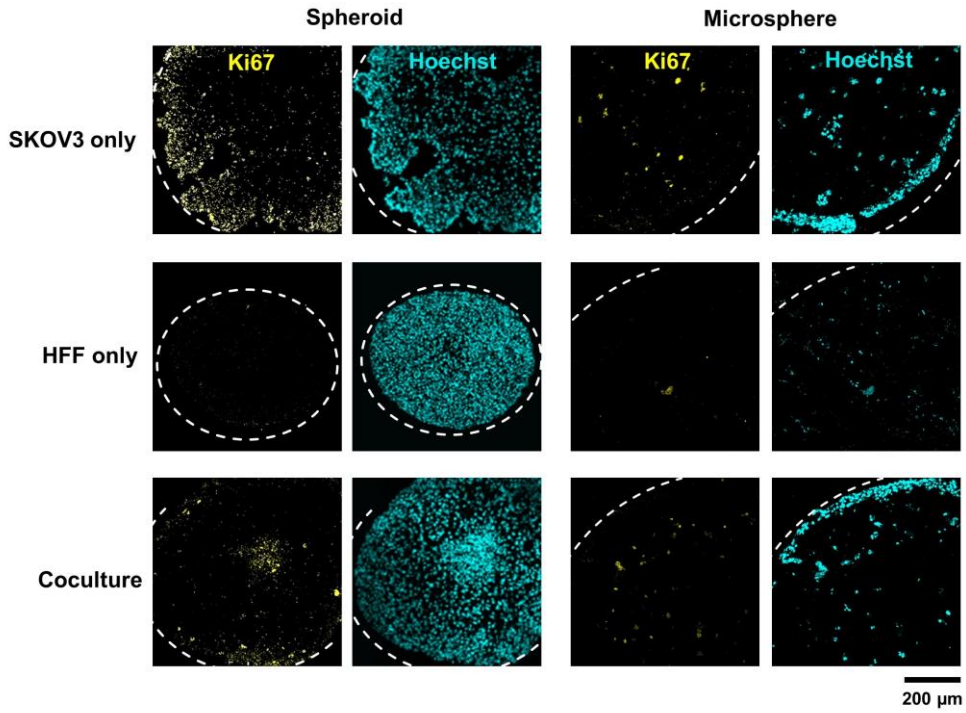

Figure S1. Proliferation marker (Ki67, yellow) and nuclei (Hoechst 33342, blue) of ovarian carcinoma spheroid and microsphere units. Dotted lines represent the edge of each tumour unit.

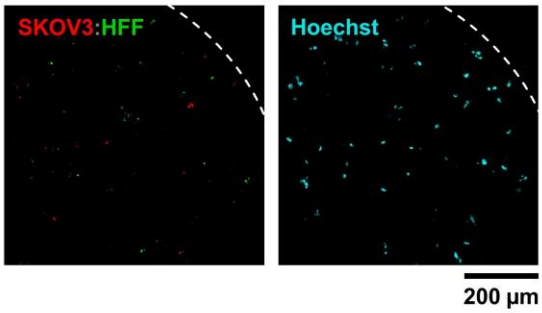

Figure S2. Cell distribution within coculture microspheres. SKOV3 (Qtracker 800, red) and HFF (Qtracker 655, green) cells positioned throughout microsphere. Total nuclei visible via Hoechst 33342 (blue).

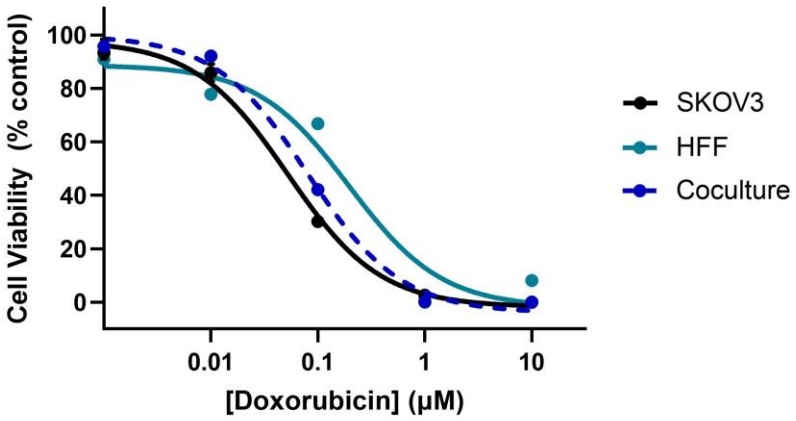

Figure S3. Chemosensitivity of 2D cultured ovarian carcinoma models. Dose response curves of doxorubicin on cell viability (n=3). Error bars represent ± standard deviation.

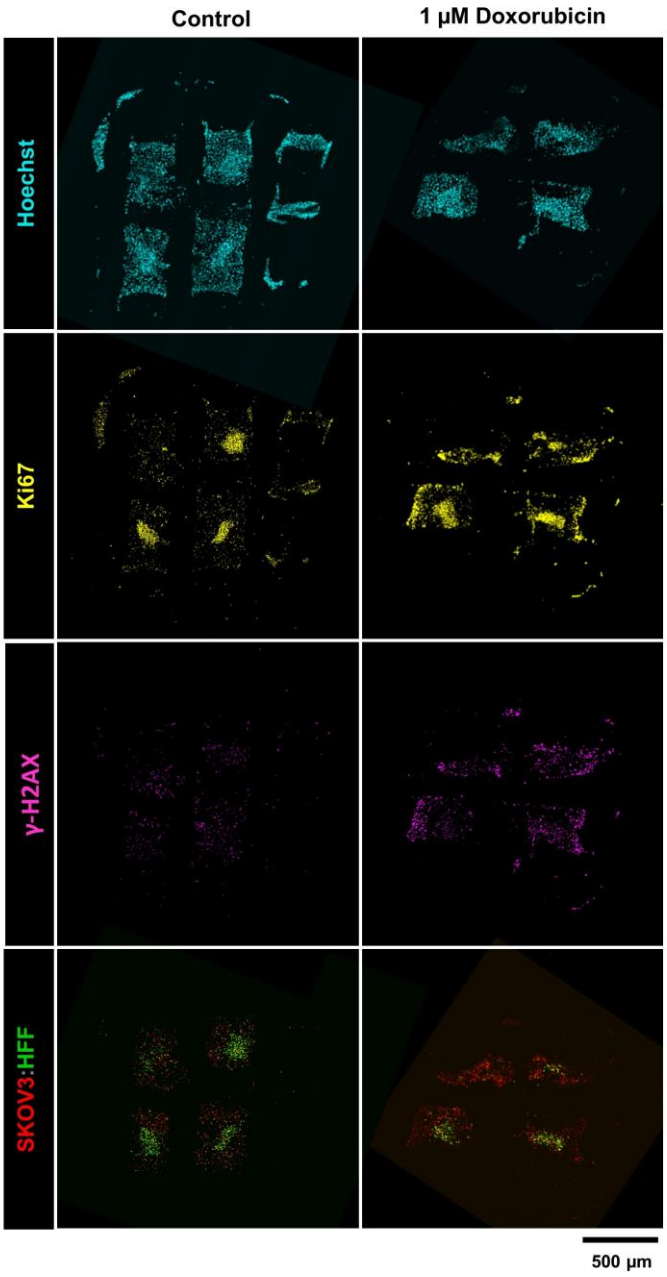
Control
1 µM Doxorubicin
Hoechst
Ki67
γ-H2AX
SKOV3:HFF
500 µm

Figure S4. Immunofluorescence imaging of whole bioassembled SKOV3:HFF coculture spheroids with or without treatment with 1 µM doxorubicin. Cell nuclei (Hoechst, blue), cell proliferation marker (Ki67, yellow), DNA double-strand breaks (γ-H2AX , pink) and cell distribution of SKOV3 (Qtracker 800, red) and HFF (Qtracker 655, green) cells.

Table S1. Total cell number encapsulated in 10% Gel-MA microspheres (n=3)

	Cells		
	SKOV3	**HFF**	**Coculture**
Cells per microsphere	5829 ± 263	6168 ± 159	5610 ± 540
Coefficient of variation	0.045	0.025	0.096