Supporting Information

---

**Fig. S1:** Schematic representation of the 3D domains used during the simulations
A) MIVO® bioreactor set-up in dynamic condition, B) geometrical configuration used for the simulations in static condition within the well.

---

**Fig. S2:** Tumor volume in mouse xenograft model after 6 mg/kg cisplatin treatment in comparison with control (sham treated mice, N=6)
Values are reported as mean ± SEM.

---

doi:10.14573/altex.2003131s
Fig. S3: Kinetics of cisplatin consumption within the hydrogel
Comparison between the theoretical model and the experimental data, where R is the reaction term defined according to the Michaelis-Menten kinetics. (N=3 biological replicates).
Fig. S4: Fluorescence images showing immunostaining of Ki67 (green) as index of proliferation and Caspase-3 (red) as marker of apoptosis of SKOV-3 cultured within alginate hydrogels without drug and cultured in static and in dynamic conditions with cisplatin 100 µM. Untreated controls were cultured in static conditions. Cells were stained after 2 or 7 days and counter-labeled with DAPI (blue). Scale bar is 500 µm. (N=3 biological replicates; n= 2 technical replicates).
Fig. S5: Comparison of markers of proliferation and apoptosis between dynamic and static culture without drug
(A) Fluorescence images showing immunostaining of Ki67 (green) as index of proliferation and Caspase-3 (red) as marker of apoptosis of SKOV-3 cultured for 7 days within alginate hydrogels without drug in static and in dynamic conditions, respectively. Cells were counter-labeled with DAPI (blue). Scale bar is 500 µm. (N=3 biological replicates; n= 2 technical replicates). (B) Comparison of the proliferation rate (assessed through Alamar Blue assay) of ovarian cancer cells embedded within alginate hydrogels cultured without and with drug (cisplatin 10 µM) in static and dynamic conditions. Values are reported as mean ± SD. Student’s paired T-test was performed to compare respectively the following conditions: dynamic no drug vs dynamic drug to evaluate the effects of the drug in a dynamic context; dynamic drug vs static drug to evaluate the effect of the dynamic culture; dynamic no drug vs static no drug to evaluate the effects of the dynamic culture without drug; *P < 0.05, (N=3 biological replicates; n= 2 technical replicates).
Fig. S6: Cell viability of SKOV-3 cultured in 2D conditions treated with 10 μM cisplatin assessed through Alamar blue assay. Cell viability was derived as % of live cells normalized to untreated controls. Values are reported as mean ± SD. (N=3 biological replicates; n= 2 technical replicates).