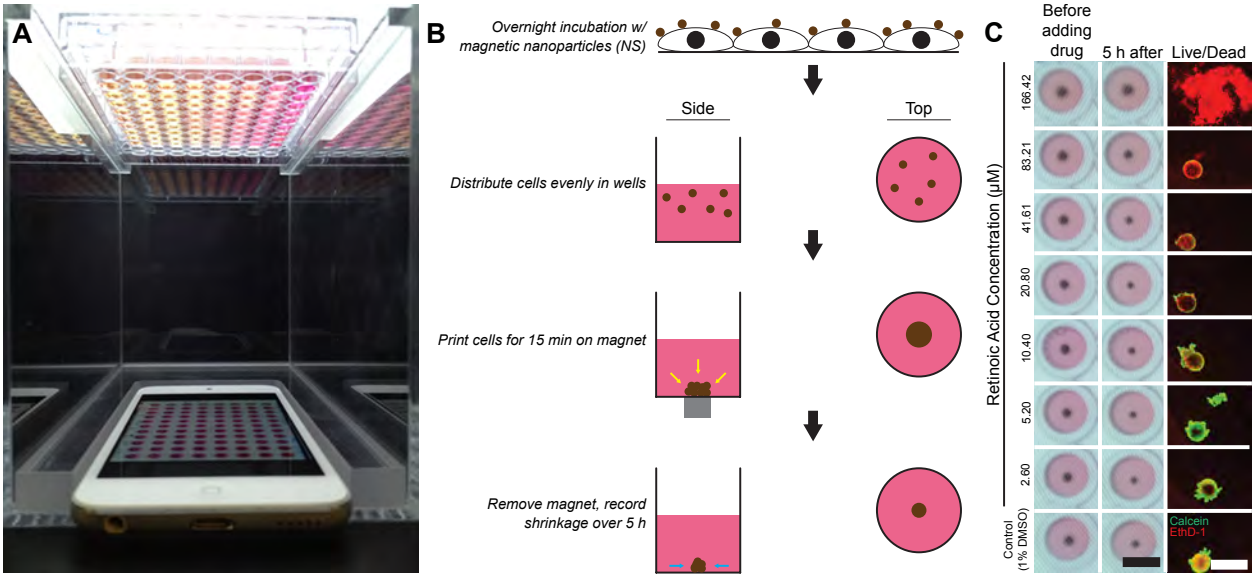
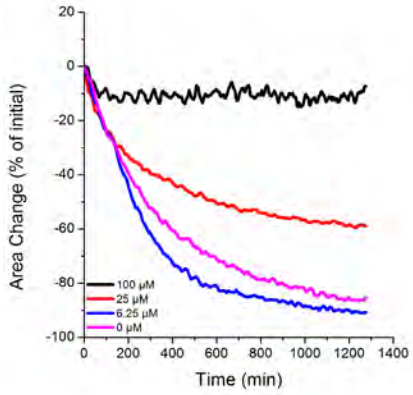
BiO Assay: Magnetic 3D Bioprinting for High-Throughput Screening

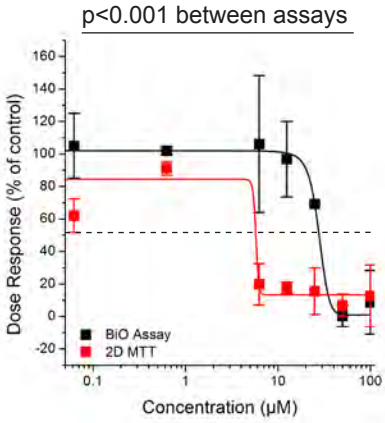
- ✔ Rapid printing of spheroids
- ✔ Dose-dependent shrinkage from toxicity
- ✔ Label-free, quantitative metrics
- ✔ iPod-based imaging - set it and go
- ✔ Automated data analysis (within 48 h)
- ✔ No specialized equipment
- ✔ High-throughput
- ✔ High-content (genomics, proteomics)
- ✔ Applicable to most cell types
- ✔ Available as screening service



BiO Assay: (A) iPod imaging setup and (B) schematic of spheroid formation and shrinkage. (C) Spheroids of 3T3s exposed to retinoic acid before and 5 h after adding drug, and the resulting live dead stain. Note that with increasing, more toxic concentrations, the spheroid is unable to shrink, which correlates with its viability. Black bar = 5 mm, white bar = 100 μm.



Results: BiO Assay results of magnetically bioprinted human osteosarcoma cells (HOS) to doxorubicin. (L) Area change of spheroids over time. (R) Dose-response of these spheroids, compared to a 2D MTT assay performed on the same combo. With increasing amounts of doxorubicin, the HOS spheroids were unable to shrink as easily. The response of HOS's is significantly more sensitive to doxorubicin in 3D than 2D (p<0.001).



020-BIOCMSYS	BiO Assay - Complete system with 6 NS (w/o iPod)	$1,699.00
020-BIOBSCSYS	BiO Assay - System only (3X NS, w/o imaging system)	$599.00
020-BIOIMGSYS	Imaging system (w/o drives or iPod)	$599.00
020-NSBIOIPD	Nanoshuttle refill, 6-pack (w/ free iPod)	$799.00
011-96WK	96-well Bio-Assembler Kit	$600.00

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Timm, D. M. et al. A high-throughput three-dimensional cell migration assay for toxicity screening with mobile device-based macroscopic image analysis. Sci. Rep. 3, 3000 (2013).

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