

# MECHSCOPY

## Control 3D cell cultures to enhance cancer drug efficacy screening

Cancer drug candidates are typically selected using flat 2D cell culture and animal models, and currently over 95% of the drug candidates fail in the clinical stage. To reduce the high failure rate, 3D cell culture is gaining prominence in research, and via the recently renewed drug regulation (FDA Modernization Act 2.0 of Dec. 2022).

3D cultures for drug development can embed cells within tissue matrix materials. However, 3D cultures have unrepeatability issues and they fail to model the accurate physiological condition. The recent research has established that 3D culture materials have elevated sample-to-sample variation and internal heterogeneity, and such changes in biomechanical properties regulate drug resistance and phenotype of cells.

We introduce a MechScopy technology to make the 3D cultures repeatable and overcome heterogeneity at desired physiological conditions. The technology can be used as an add on in standard live-cell microscopy, as well as a standalone instrument. Commercial aspects involve separate parts of the innovation: device hardware, software, and cloud-based analytics.

MechScopy enables enhanced control over 3D cultures to screen cancer drug efficacy, and find new drug targets.

### COMPETITIVE ADVANTAGE

- Only technology for 3D culture at as high stiffness as found in breast-cancer tumor tissues
- Simultaneous multiple-location data in time lapses
- Use before/after or during experiments

### SEARCHING FOR

- Collaboration and partnerships
- Research funding applications
- Funding for future startup
- Input from key industry areas to push our invention to the market

### IPR STATUS

- Two patents pending (2022, 2023)

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