

Paper-Based Technology for Cell Cryopreservation

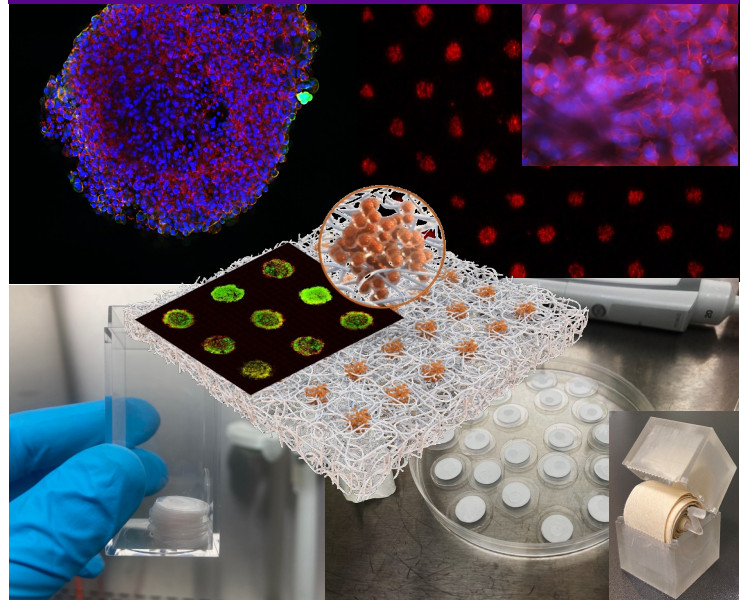
Energy saving and cost-effective method for cell and 3D Tumor Models cryopreservation

SUMMARY

The healthcare industry is heavily dependent on mammalian cells for various application, including but not limited to drug screening, vaccine production, and personalized medicine. Current methods mix cells with cryoprotectants and store them in liquid nitrogen, which is expensive, labor intensive and space-consuming.

Scientists at New York University Abu Dhabi have made a transformative technological advance by developing a method to preserve mammalian cells on filter paper. The technology supports the creation and cryopreservation of arrays of 3D tumor models. Given that the paper has high surface area, and is flexible, yet, mechanically stable, it can be rolled, stacked, or folded to significantly reduce space requirement. The technology has been validated with cell lines of cervical, breast, prostate, and blood cancers.

RESEARCH MARKETING SUMMARY



VALUE PROPOSITION

Versatility

Suitable for a wide range of cell types, including stem cells, immune cells, germ cells, and neoplastic cells.

Scalability

Allows efficient processing and storage of any quantities of cells, making it equally suitable for small academic or clinical laboratories, and large-scale repositories.

Advancement

Opens the door for the creation and cryopreservation of arrays 3D tumor models.

Simplicity

Seamless integration into existing infrastructures. Easily transferable across different laboratories, ensuring smooth adoption.

Standardization

Consistent outcomes facilitate compliance with regulatory standards.

Cost-Effectiveness

Reduces operational costs by optimizing space and labor allocation.

Paper-Based Technology for Cell and 3D Tumor Model Cryopreservation

APPLICATIONS AND USES

The invention has significant potential in the fields of biotechnology and medical research, particularly for laboratories and medical facilities looking to reduce costs and improve operational efficiency.

It is ideally suited for:

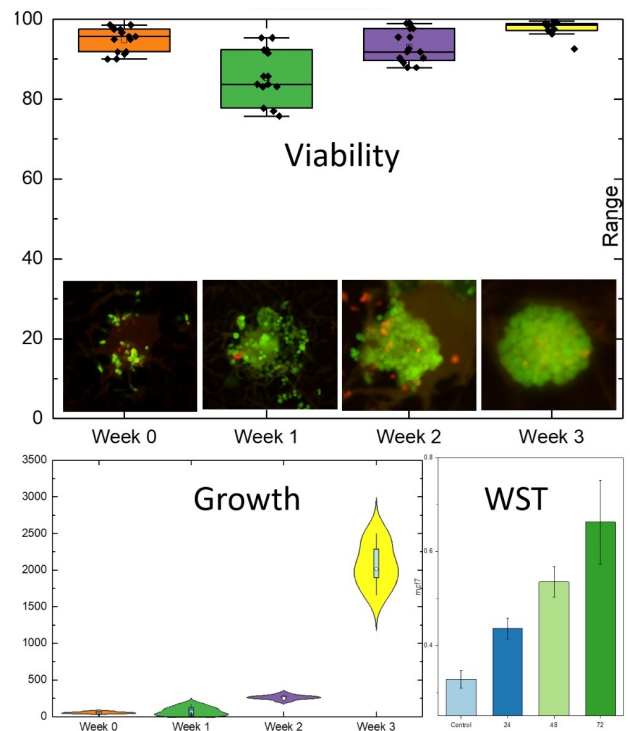
- Cancer research, drug development and personalized medicine.
- Stem-cell research and regenerative medicine.
- Immunotherapy, including CAR-T cell therapy.
- Biobanking, providing a valuable efficient storage solution
- Preservation of genetic material from endangered species and valuable livestock.

ENGAGEMENT OPPORTUNITIES

We are offering opportunities for joint ventures, collaborative pilot studies and licensing with industry partners to further develop and commercialize this technology.

CONTACT DETAILS FOR ENQUIRIES

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Paper-based 3D Tumor Models Formation and Cryopreservation: Evaluation of Cell Viability, Growth, and Metabolic Activity

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Intellectual Property
Patent Number: US11737452B2
New York University in Abu Dhabi Corp.

Proof of Concept
<https://pubmed.ncbi.nlm.nih.gov/32293146/>