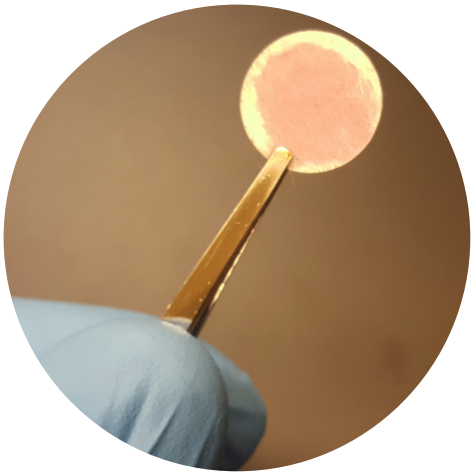
SeedEZ

LENA BIOSCIENCES



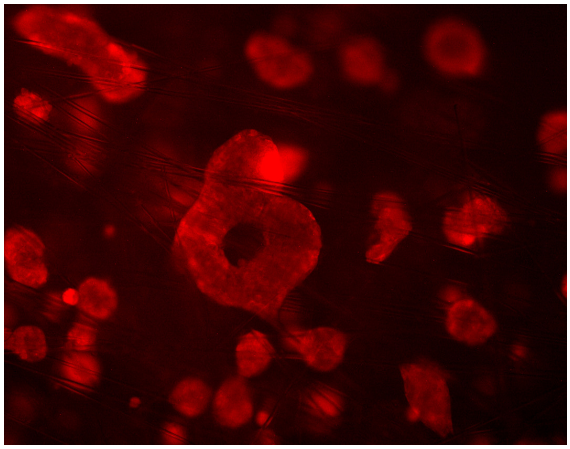
ABOUT SEEDEZ

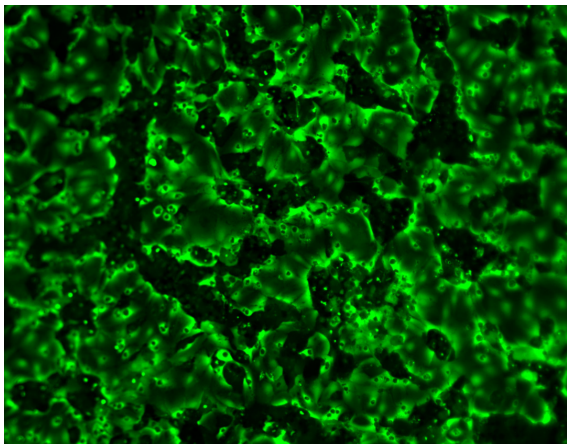
Our SeedEZ cell culture scaffold allows cells to grow in three dimensions (3D) as in living tissues. The scaffold is composed of glass microfibers that are completely inert and transparent. The arrangement of the microfibers creates tiny pores that allow for the passage of nutrients and gases needed for cell survival. The abundance of room in the scaffold enables the cells to divide, branch out, and take on their natural geometry as if they were still inside the human body.

SeedEZ enables the cells to utilize their cadherin (cell to cell) and integrin (cell to extracellular matrix) receptors which are vital for tissue representative cell behavior, drug responses, and cell therapy outcomes.

PRODUCT

SeedEZ supports a wide range of cell types and extracellular matrices.





BENEFITS

- Increases cell survival and metabolism
- Allows for the study of cellular communication between different cell types

HOW IT WORKS

- SeedEZ is simple to use and works like a piece of paper. Simply pipette one or more cell types into the scaffold and incubate it. Assays and imaging are run in situ.

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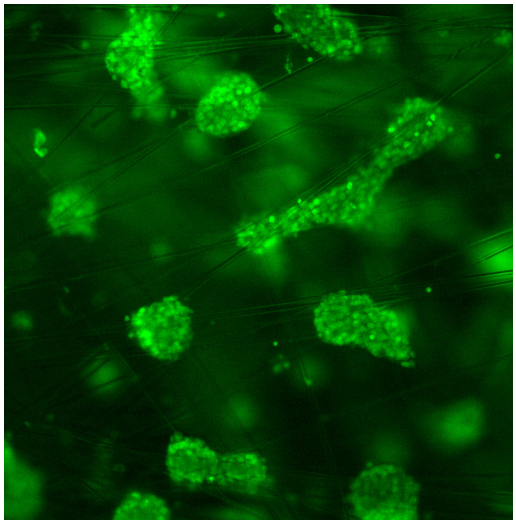

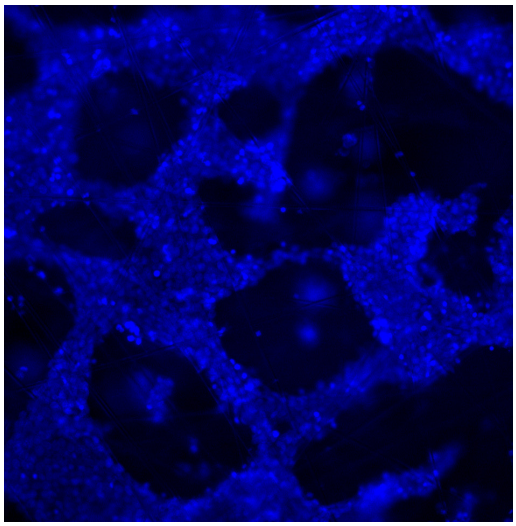

WHY 3D CELL CULTURE IS A BETTER TISSUE MODEL

In the human body, cells assume a generally round, three dimensional (3D) shape. In traditional 2D cell culturing, cells are grown in a flat, plastic dish. The cells adhere and spread on the synthetic surface forming a single monolayer. In a monolayer of cells, the cells are flat, stretched and under stress. They are limited in cell-cell and cell-matrix interactions so they begin to form unnatural cell attachments. This contributes to poor survival of normal cells and prevents us from modeling higher order cell processes, such as tumor invasion and metastasis, that are inherently 3D. In their unnatural 2D state, cellular gene and protein expression are altered which results in artificial changes to cell structure, function, signaling, and responses to drugs.Today, many drugs are also designed to target specific receptors on the cell surface (targeted therapies). The expression and organization of these receptors becomes distorted in a dish due to an altered cytoskeleton which affects the efficacy of the receptor-targeted drug. Collectively, stress and distortion of the cell cytoskeleton greatly reduces the predictive ability of in vitro studies.

Culturing cells in 3D solves all of these problems and facilitates the translation of results. In 3D, cell shape, function, and surface receptors (drug targets) are restored. The cells grow in a multi-layer fashion instead of in a monolayer. They are able to interact with one another, form natural cell-cell attachments, and communicate with the extracellular matrix. Transport of molecules to and from the cells occurs as it does in the human body, providing a more realistic model of the challenges and physical barriers that exist during drug delivery and transport. 3D cell culture enables researchers to more accurately model and study complex events that take place in the human body and translate those findings to humans.

TESTIMONIALS

"SeedEZ is simple to use, robust and easy to handle. We have used it to culture breast cancer cells and they grow very well."

— Professor Valerie Speirs, University of Leeds

"SeedEZ offers a powerful suite of tools that every cancer research team must have. If you get stuck, their support team will help out immediately. Using SeedEZ for drug screening and gene assessment would make the revaluation in cancer medicine."

— Professor Yong Teng, Georgia Cancer Center, Augusta University

311 Ferst Drive, Atlanta, GA 30332 • 404-206-2676
sales@lenabio.com • www.lenabio.com