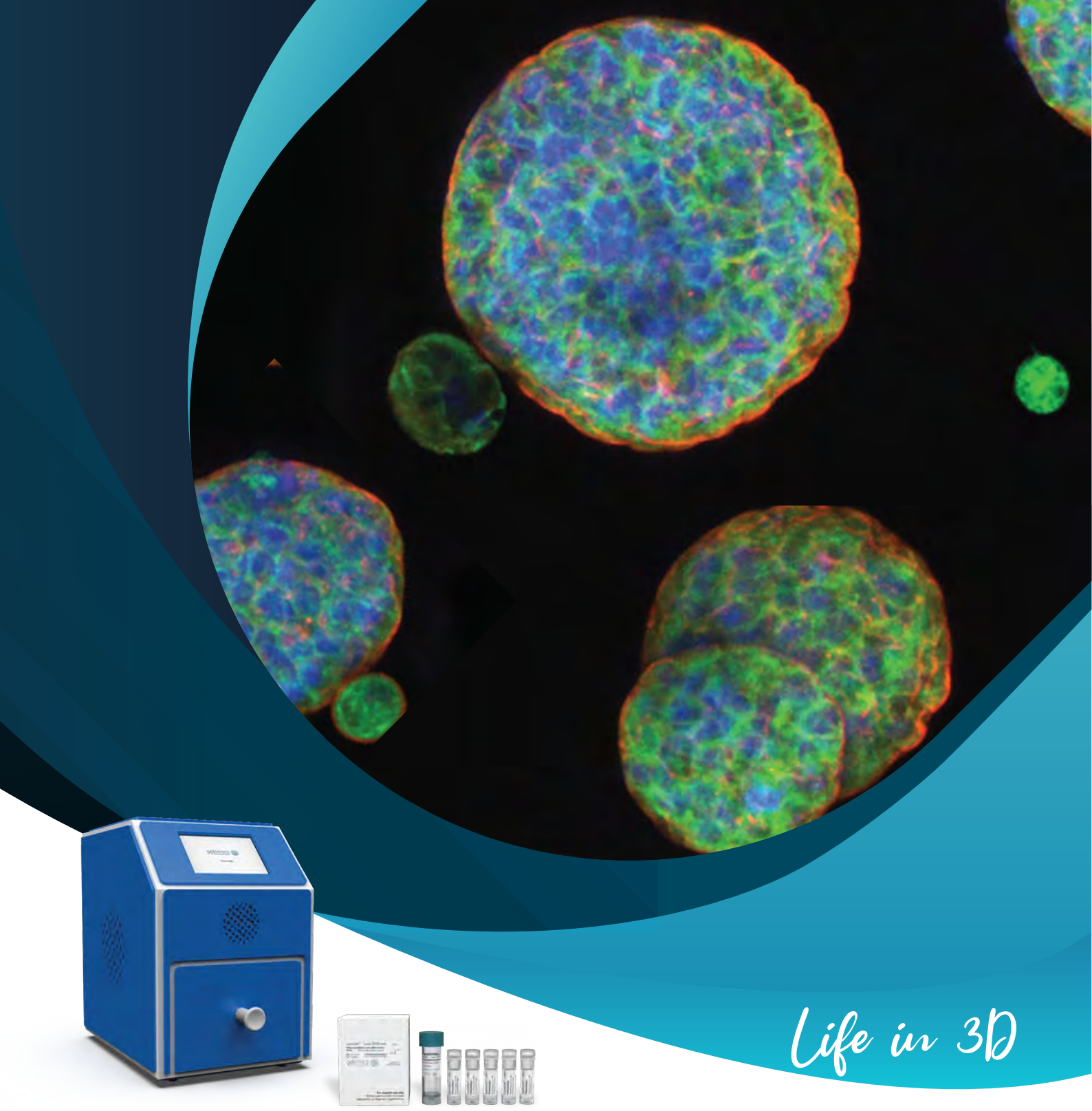


Life in 3D

LunaGel™ 3D Tissue Culture

The next generation of cell culture

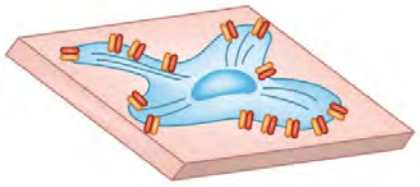
Revolutionizing drug development by enabling the growth of human tissue models *in vitro*, providing an ethical and predictive alternative to animal testing.

gelomics
3D cell culture technologies

Forced Phenotypes

The Problem with Current Cell Culture Systems

The current cell culture systems used in tens of thousands of academic and pharmaceutical laboratories face a critical challenge: they fail to replicate the native environments in which cells naturally thrive. Most labs rely on flat, rigid surfaces like polystyrene and glass, which cause cells to adopt unnatural shapes, exhibit abnormal polarization, and respond differently to pharmaceutical compounds, leading to a general loss of their natural phenotype. These unphysiologically stiff materials do not mimic the soft, complex tissue environments cells experience in the body. As a result, the behavior of cultured cells is often misleading, limiting the accuracy of biomedical research and drug development. Despite widespread recognition of these limitations, there remains a significant gap in the availability of accessible, reliable systems that can consistently reproduce the cellular microenvironment required for more predictive and effective research outcomes.



Conventional 2D cell culture on plastic or glass surfaces leads to aberrant cellular phenotypes and misleading data [1]

LunaGel™ Extracellular Matrix Kits

Growing Tissues rather than just Cells

LunaGel™ is a photocrosslinkable hydrogel cell culture system that recreates the natural extracellular matrix (ECM) surrounding cells in the human body, allowing researchers to grow three-dimensional microscopic tissues, rather than just cells on plastic surfaces. The major components of LunaGel™ include native ECM proteins such as collagen type I, III, IV, and V, as well as connective tissue glycoproteins and proteoglycans. LunaGel™ retains the intrinsic cell-instructive bioactivity of natural ECMs, facilitating cell attachment, proliferation, differentiation, migration, and proteolytic degradation.

Tunable Extracellular Matrix
Vary light exposure duration to easily adjust matrix stiffness

Easy And Fast
Create 3D cell culture models in <15 mins

Consistent Quality
Our manufacturing and quality control procedures ensure consistent properties

Bioactive Motifs
LunaGel™ ECM contains cell-instructive motifs and attachments sites

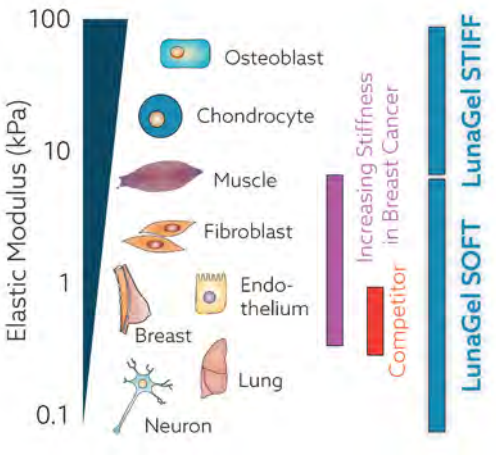
Proteolitic Degradability
Cells can cleave the LunaGel™ ECM and remodel their microenvironment

Biocompatibility
LunaGel™ ECM is compatible with a large variety of cells types

Overcoming the Limitations of Traditional Cell Culture Systems

ECM Stiffness Matter

All cells in the human body are exposed to mechanical forces which regulate cell function and tissue development and each cell type is specifically tuned to the mechanical properties of the tissue it resides in. Neuronal cells, for example, require a very soft matrix similar to brain tissue in order to thrive, while cartilage or bone cells require much stiffer environments[1]. The matrix properties of human tissues can also change with disease and in turn facilitate its progression. For example, normal mammary epithelial cell growth, survival, differentiation and morphogenesis are well-supported by interaction with a soft matrix similar to normal breast tissue stiffness. Following transformation during breast cancer, however, the tissue becomes progressively stiffer[2] and tumour cells become significantly more contractile and hyper-responsive to matrix mechanical cues, ultimately driving epithelial to mesenchymal transition (EMT) and metastasis[3,4,5]. Evidently, the importance of matrix elasticity is increasingly being studied and ECM stiffness has been shown to regulate stem cell differentiation[1,6], cell migration[7], epithelial to mesenchymal transition (EMT)[3], the induction of malignant cancer phenotypes[8], cell spreading and adhesion[9], calcium signalling, and many more physiological and pathophysiological cellular events.



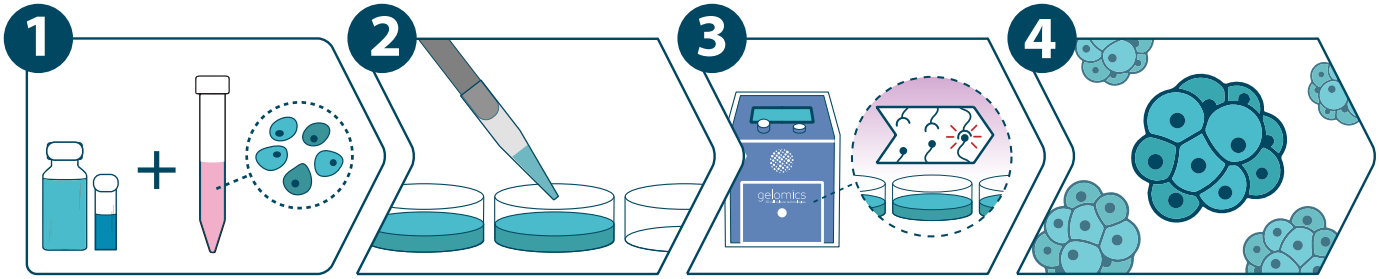
Cells are tuned to the material properties of their native matrix.

The LunaCrosslinker™ enables cell-friendly photocrosslinking

Simplifying 3D Cell Culture with LunaGel™ Tissue Culture System

Easily Replicate Tissue Microenvironments with Adjustable Stiffness and Imaging Compatibility

Creating 3D cell culture models has never been easier! LunaGel™ ECMs can be chemically modified and crosslinked using blue light in the LunaCrosslinker™, forming cell culture models that closely replicate natural microenvironments. Available in low stiffness (0 - 6.5 kPa) and high stiffness (0 - 25 kPa) formulations, LunaGel™ ECMs allow researchers to easily simulate the mechanical properties of a wide range of tissues in both healthy and diseased states. The LunaGel™ hydrogel system is transparent, permeable, and fully compatible with standard imaging systems. By adjusting the duration of light exposure in the LunaCrosslinker™, researchers can fine-tune ECM stiffness to match the physiological conditions of different tissue types.



Add cells to LunaGel™ solution

Dispense

Photocrosslink in LunaCrosslinker™

Let the cells do the rest!

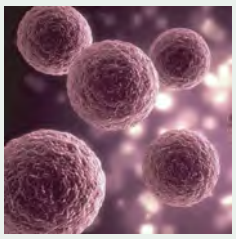
10 - 15 min

3 - 7+ days

LunaGel™ Photocrosslinkable Extracellular Matrices in Action

Application Examples of LunaGel™

The applications of LunaGel™ are vast and span 3D cell culture, 3D biofabrication, high-throughput manufacture and screening, drug delivery and many more. This White paper provides just a few examples of the wide range of potential applications in which LunaGel™ has proven to be an exceptional ECM substrate for biomedical research.



Photocrosslinkable ECM

3D Cell Culture
Organoid Culture
Tissue Engineering
Advanced Biomanufacturing

Automation Compatible

Automated Liquid Handling
High Throughput Screening
Migration Assays
Invasion Assays
Angiogenesis Assays

Animal Studies

Biocompatibility
Biodegradability
ContControlled ECM
for Cell Delivery
Toxicity screening

Controlling Matrix Stiffness by Light Exposure Duration

The LunaGel™ ECM offers unprecedented control over matrix stiffness covering a substantially larger range than any of the competitor products on the market. LunaGel™ ECMs employ a cell-friendly, rapid photocrosslinking process, allowing researchers to fine-tune the elastic modulus for different applications with just a few minutes of light exposure (Figure 1). Competitor products such as basement membrane extracts or collagen rely on lengthy thermal gelation for curing (30 – 60 min) and produce matrices with elastic modulus limited to < 1 kPa which are unphysiological for most cell types.

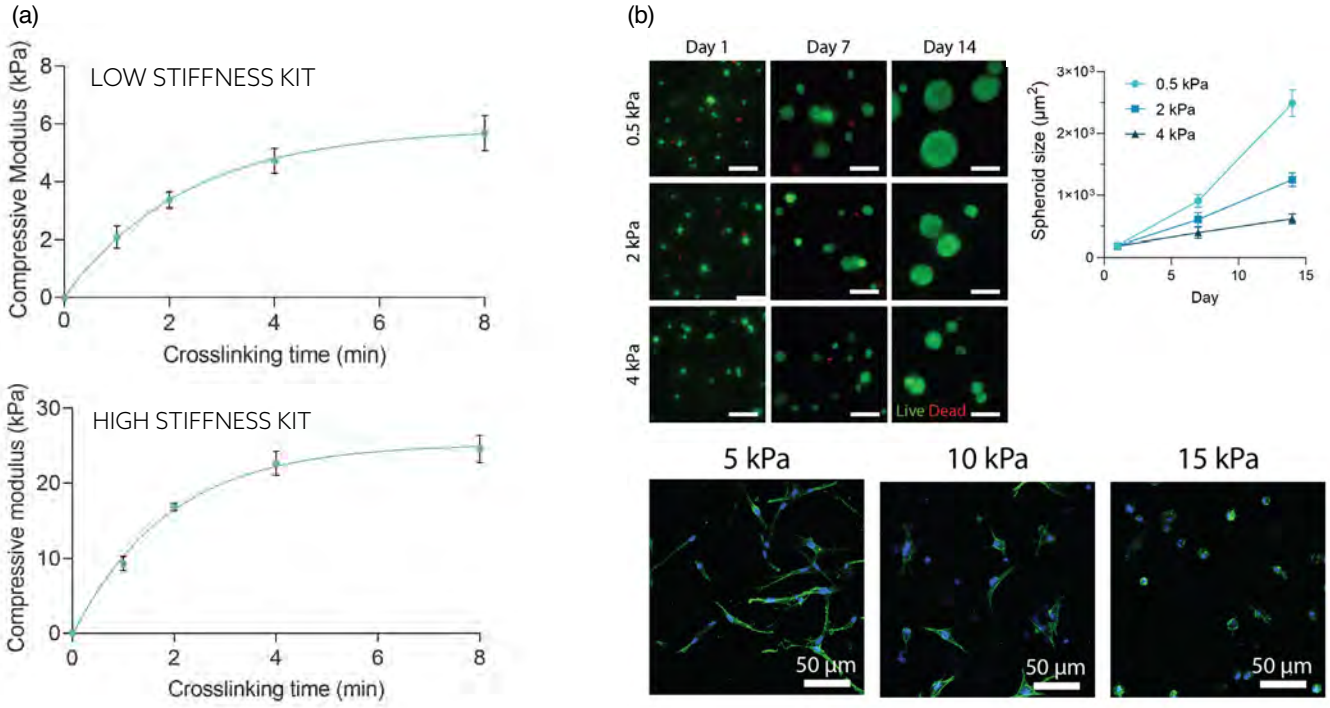


Figure 1: LunaGel™ Extracellular Matrices allow precise control over mechanical properties and cell response.
Elastic/compressive modulus of LunaGel™ (a) low and high stiffness samples were crosslinked by exposure to visible light in the LunaCrosslinker™. Matrix stiffness regulates (b) MCF-7 Breast Cancer Spheroid growth and human Mesenchymal Stem Cell morphology.

Cancer Spheroid/Organoid Culture

Recent high-impact papers have demonstrated that primary tumour growth, epithelial-to-mesenchymal transition (EMT), and metastasis are regulated by ECM stiffness. The ability to tightly control the ECM stiffness makes LunaGel ™ is the ideal product to study this crucial biological pathway. LunaGel™ has been successfully used to culture a large variety of commonly used cancer cell lines derived from breast cancer (MCF-7, MDA-MB-231), prostate cancer (LNCaP, PC3), ovarian cancer (OV-MZ-6), liver cancer (HUH-7, C3A) and melanoma (SK-MEL-28, WM35). Below are some examples of microtumours formed by commonly used prostate and breast cancer cell lines (Figure 2).

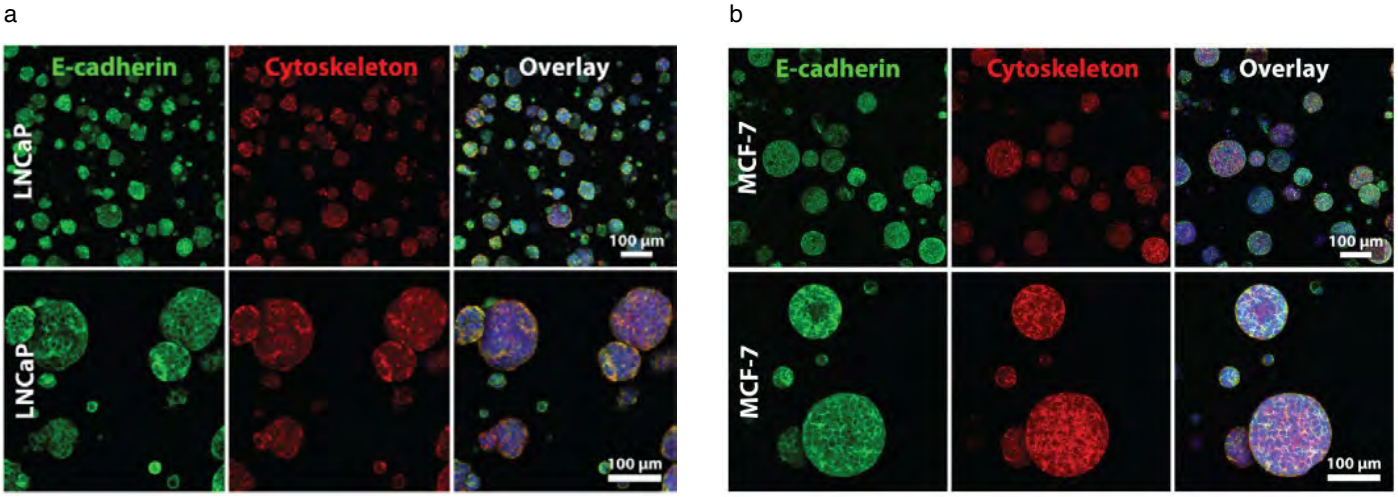


Figure 2: Representative images of cancer spheroids generated in LunaGel™ SOFT *(Meinert, et al, Prostate Cancer, 2018)*.

(a) LNCaP prostate cancers cells and (b) MCF-7 breast cancer cells were encapsulated in LunaGel™ (3 kPa) and cultured under standard conditions for 14 days, followed by fixation with 4% PFA and immunofluorescence staining for E-Cadherin (green) and actin (red).

LunaGel™ ECMs are the ideal substrate to study EMT processes in vitro. The below images demonstrate that MDA-MB-231 breast cancer cell phenotypes are highly regulated by ECM stiffness. After 7 days of culture on LunaGel™ substrates replicating breast tissue in different states of pathology (ranging from healthy tissue to late-stage cancer), cell invasiveness increased as a function of ECM stiffness, corroborating clinical data suggesting preferential occurrence of metastasis in breast cancer with higher tissues stiffness. A shift towards more migratory cell morphologies associated with metastasis (magnified inserts) was observed with increasing LunaGel™ ECM stiffness. Critically, this key biological process, so consequential for cancer metastasis and patient survival, cannot be effectively studied using traditional BME Products. These products lack the ability to replicate the pathological stiffness necessary to model advanced cancer environments, limiting their effectiveness in capturing the complex mechanical properties crucial for understanding metastasis.

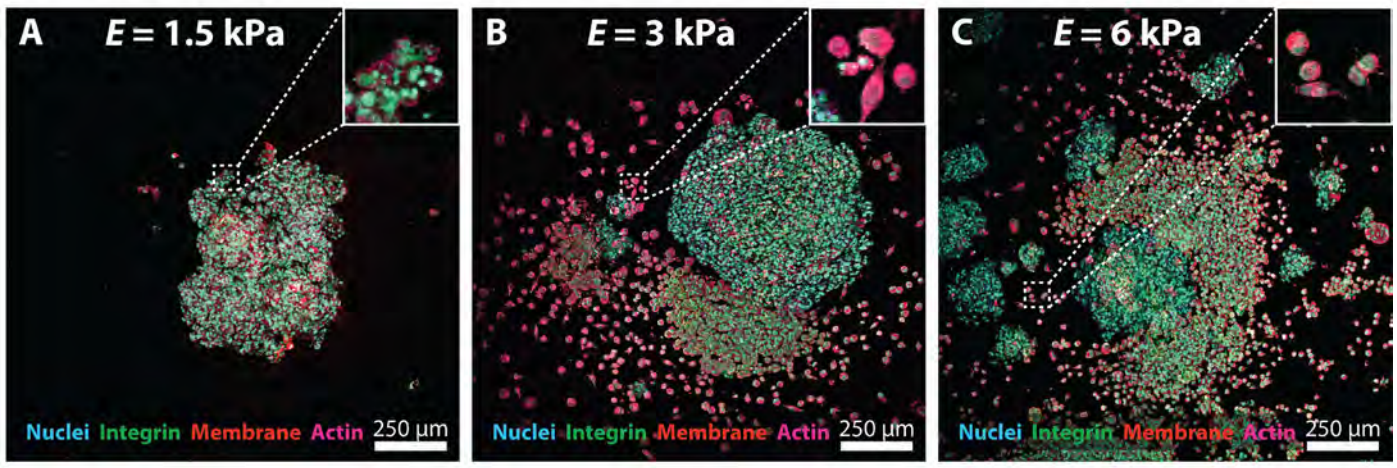


Figure 3: MDA-MB-231 breast cancer cell invasiveness increases with ECM stiffness.

MDA-MB-231 spheroids were cultured on LunaGel™ Bovine Gelatin - Low Stiffness ECM with compressive moduli of (A) 1.5 kPa, (B) 3 kPa, and (C) 6 kPa to mimic the mechanical properties of healthy breast tissue, as well as breast tissue with early stage and late stage cancer, respectively, for 7 days.

Inducing physiological gene expression patterns in human hepatoma-derived (C3A) cells

Liver cells express a variety of iron regulators including transferrin receptors (TFRs) and metallothioneins (MTs) in vivo. However, the expression of these genes is largely lost during in vitro 2D monolayer culture, limiting the value of current laboratory models. Figure 4 demonstrates that the expression of key marker genes including TFR1, TFR2, and MT2 is significantly higher in LunaGel™ ECM compared to monolayer and Matrigel culture (the current market leader in 3D cell culture products), showing that in LunaGel™, the liver cells are showing stronger retention of their characteristic liver cell phenotype in LunaGel™ compared to Matrigel. Furthermore, the expression of these genes is regulated by ECM stiffness, suggesting that disrupted iron homeostasis which is often observed in hepatocellular carcinoma patients, may be induced by changes in the ECM properties during cancer progression.

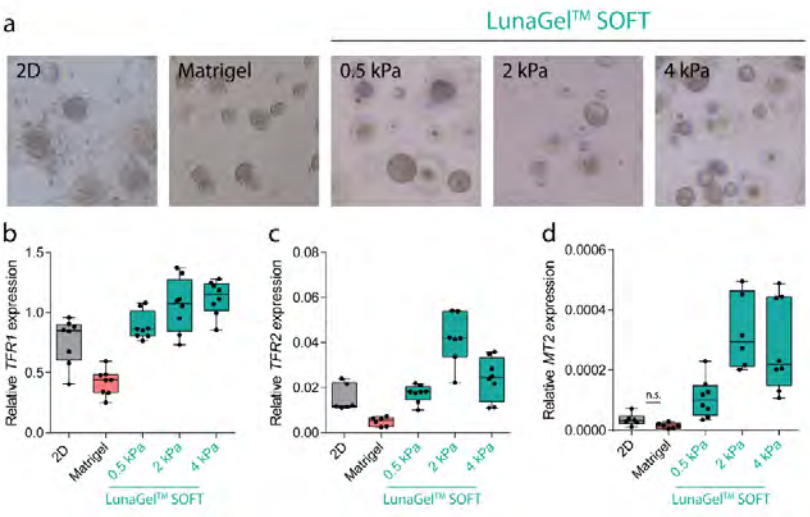


Figure 4: C3A liver cells cultured in LunaGel™ show varying levels of iron regulator gene expression depending on matrix stiffness

(a) Representative brightfield images of C3A cells after 6 days of culture in 2D monolayer, Matrigel, and LunaGel™ at varying ECM stiffness. Spheroids formed in LunaGel™ appear more regular and spherical compared to Matrigel. The expression of (b) TFR1, (c) TFR2, and (d) MT2 all indicators of healthy and functional liver cellsat day 6 was highest in LunaGel™ cultures and further regulated by ECM stiffness.

Investigating the effects of IGF-I:IGFBP-3:VN trimeric complexes on melanoma spheroid growth

The LunaGel™ ECM offers unprecedented control over matrix stiffness, covering a substantially larger range than any of the competitor products on the market. LunaGel™ employs a cell-friendly, rapid photocrosslinking process, allowing researchers to fine-tune the elastic modulus between 0.1 and 10 kPa within just a few minutes of light exposure (Figure 1). Add information related to the sub-heading on IFG-1 trimeric complexes...

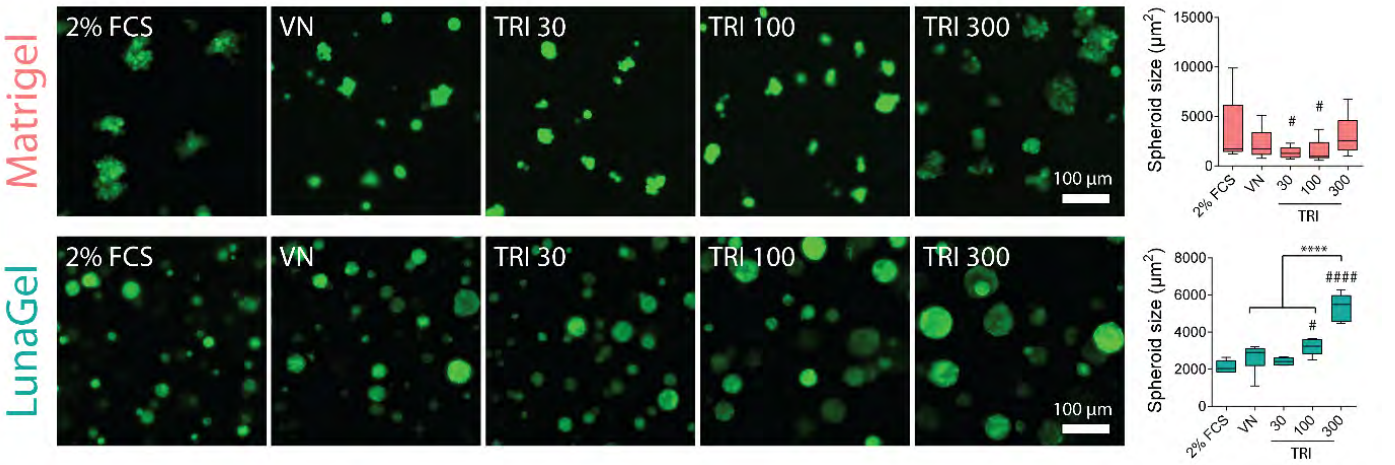


Figure 5: IGF-1:IGFBP-3:VN (TRI) complex stimulates the growth of melanoma spheroids in LunaGel™ ECM *(Murekatete, et al, Scientific Reports, 2018).*

SK-MEL-28 cells were seeded onto Matrigel® or encapsulated in LunaGel™ (5 kPa). On day 14, cells were stained with FDA for visualisation and spheroid size assessment. TRI 30 = 1 ng/mL VN + 30 ng/mL IGF-I + 90 ng/mL IGFBP-3; TRI 100 = 1 ug/mL VN + 100 ng/mL IGF-I + 300 ng/mL IGFBP-3; TRI 300 = 1 g/mL VN + 300 ng/mL IGF-I + 900 ng/ mL IGFBP-3. n = 6 (2 technical repeats, 3 experimental repeats); # $p < 0.05$ compared to 2% FCS, #### $p < 0.0001$ compared to 2% FCS; **** $p < 0.0001$.

Drug Screening and Development – 2D vs 3D cell culture in LunaGel™

LunaGel™ ECM facilitates drug-response studies that are highly predictive of the in vivo situation. Below is an example of MCF-7 breast cancer spheroids subjected to a chemotherapeutic agent (Abraxane/human serum albumin-conjugated paclitaxel). While Abraxane treatment led to almost complete loss of viability in monolayer cultures, the metabolic response and viability of MCF-7 cells, a cell line derived from non-metastatic breast tumours, was more similar to in vivo responses when cultured in LunaGel™[11,12] (Figure 6). By comparison, Abraxane treatment of metastatic MDA-MB-231 breast cancer cells led to a substantially larger decrease in metabolic activity and viability, as well as a loss of metastatic cellular morphologies.

The difference in cell response non-metastatic MCF-7 and metastatic MDA-MB-231 cells may be related to the variances in growth and migration patterns. MCF-7 cells form tumour-like spheroids which may hinder the penetration of the drug to the cells to the spheroid core. MDA-MB-231, on the other hand, are metastatic and highly migratory, and hence often exist as single cells rather than cell clusters, in turn leading to higher drug efficiencies. Indeed, this finding is support by clinical studies which clearly demonstrate more effective treatment of metastatic cancers with Abraxane compared to primary tumours, ultimately leading to the use of Abraxane for metastatic breast cancer treatment. Using a non-physiological 2D model would have incorrectly led to the conclusion that Abraxane is an effective treatment for both non-metastatic and metastatic breast cancer tumors. Using LunaGel™, the data clearly show that Abraxane is an effective therapeutic for metastatic tumors, but ineffective for non-metastatic tumors. This example highlights the importance of using predictive, accurate models to assess the efficacy of cancer therapeutics.

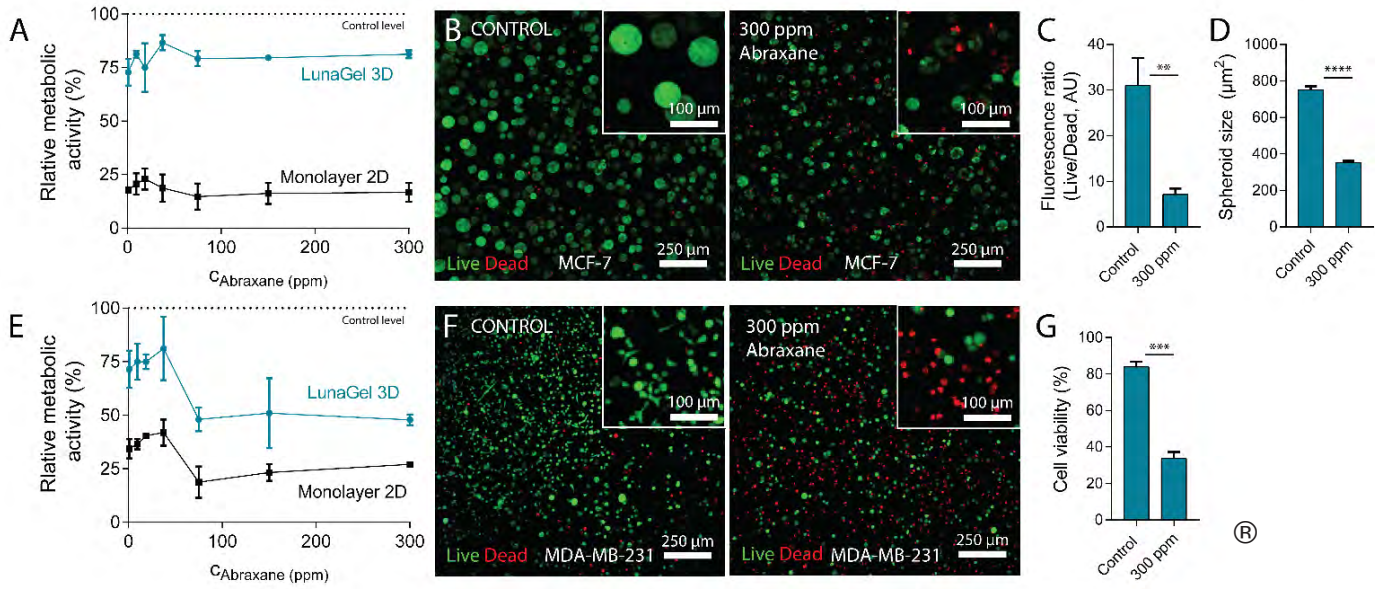


Figure 6: Response of MCF-7 and MDA-MB-231 breast cancer cells to Abraxane treatment.

Relative metabolic activity of (A) MCF-7 and (E) MDA-MB-231 breast cancer cells encapsulated in LunaGel™ and monolayer cultures following 3 days of treatment with varying concentrations of Abraxane (metabolic response of treated groups was normalised to untreated controls). Viability and spheroid/cell morphology of (B) MCF-7 and (F) MDA-MB-231 cells in untreated cultures (control) and following treatment with 300 ppm Abraxane. Quantification of (C) relative integrated fluorescence intensities (live/dead) and (D) spheroid size revealed cytotoxic effects of Abraxane treatment in embedded MCF-7 cultures. (G) Treatment of MDA-MB-231 cells reduced cell viability by > 50% compared to controls.

Drug Screening and Development – Automated Determination of IC50 Values of Anticancer Drugs

The IC50 is a quantitative measure that indicates how much of a particular inhibitory substance (e.g. drug) is needed to inhibit a given biological process or biochemical function by 50%. In this study, our collaborators have used automated liquid handling to produce LunaGel™ 3D cell culture samples with MDA-MB-231 breast cancer cells. The effect of paclitaxel, a chemotherapeutic agent, was studied using high-throughput screening approaches used in pharmaceutical industry. The ability to use LunaGel™ with high-throughput techniques is a clear advantage over other 3D cell culture platforms.

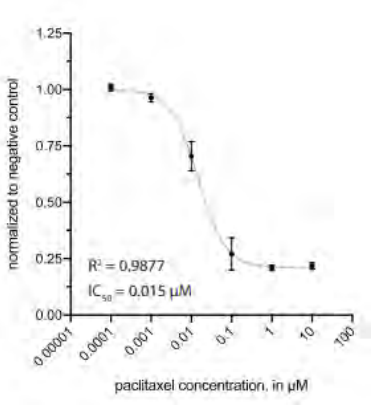


Figure 7. Determination of the IC50 of paclitaxel using LunaGel™ (Eggert, et al, unpublished data, 2020)

MDA-MB-231 breast cancer cells were cultured in LunaGel™ (5 kPa) for 7 days, and incubated with different concentrations of paclitaxel for 120 h. Metabolic activity was assessed using automated oxygen consumption measurements.

Cell Delivery/Animal Experiments

LunaGel™ products offer an effective alternative to animal models, particularly for studying processes like ECM stiffness, EMT, and cancer metastasis. However, given the extensive reliance on animal models in preclinical drug development, it is widely recognized in the industry that transitioning to alternative approaches will take time. Importantly, LunaGel™ is also compatible with *in vivo* models, providing a platform for direct comparison studies. This allows for the evaluation of *in vivo* models using LunaGel ECM substrates alongside in vitro models, offering an important step towards the eventual acceptance and adoption of non-animal models as a viable alternative to traditional animal testing. For example, as shown in Figure 8, LunaGel-embedded luciferase-labelled OV-MZ-6 ovarian cancer cells successfully led to primary tumour formation and metastases in mice. Treatment with Paclitaxel (similar to Abraxane) resulted in reduced tumour burden and metastasis, in line with the findings from the *in vitro* studies.

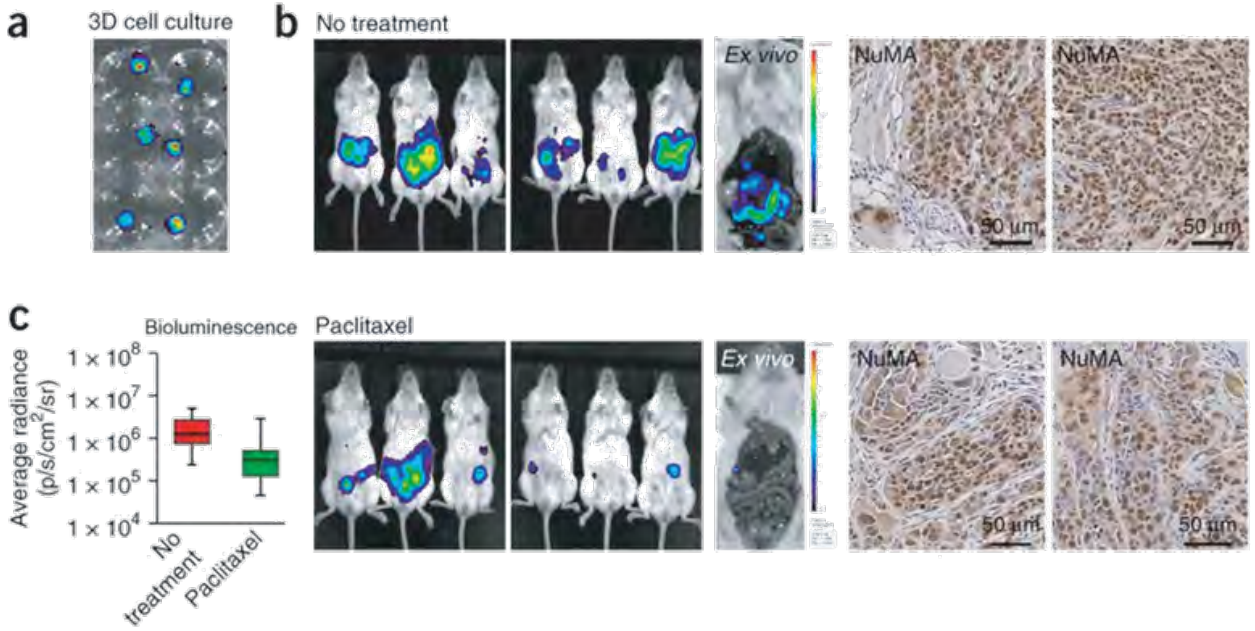


Figure 8: Application of LunaGel™ as cell delivery vehicle in an intraperitoneal animal model *(Loessner, et al, Nature Protocols, 2018)*.

(a) Luciferase-transduced ovarian cancer cells (OV-MZ-6) were encapsulated in LunaGel™ and bioluminescence indicative of spheroid formation was confirmed at day 14 of *in vitro* pre-culture. (b) Bioluminescence imaging confirmed substantial tumour formation 8 weeks following implantation and *ex vivo* imaging of the peritoneal organs indicated the presence of metastases. Human-derived tumour load was confirmed by positive staining for human-specific nuclear mitotic apparatus protein 1 (NuMA). (c) 4 weeks following implantation, mice were treated with intraperitoneal paclitaxel injections (10 mg/kg administered twice per week) over 4 weeks, leading to decreased tumour load and metastases.

Tube formation/angiogenesis assays

LunaGel™ ECM has successfully been applied for the *in vitro* generation of capillary-like networks formed by primary endothelial cells (human umbilical vein endothelial cells, HUVECs) and pericytes (primary human mesenchymal stem cells, MSCs) (Figure 9). In contrast to existing tube formation assays in Matrigel, capillary-like structures can be generated by embedded cells (true 3D environment), as opposed to seeding cells on top of the hydrogel, and in addition, are stable for much longer (up to 20 days compared to 1-2 days in Matrigel). When cultured in specialised microfluidic chips, LunaGel™-embedded HUVECs/MSCs form perfusable capillaries capable of replicating physiological blood flow conditions (Figure 9).

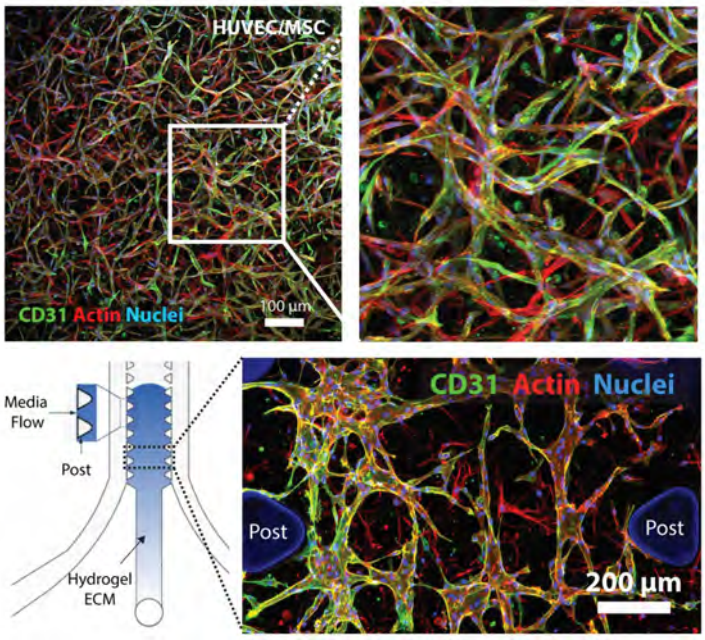


Figure 9: Capillary-like network formation of HUVECs and MSCs in LunaGel™ low stiffness

(A) HUVECs and MSCs were cultured in LunaGel™ low stiffness (0.8 kPa) in the presence of VEGF, SDF-1, and FGF-2, fixed with 4% PFA and stained for endothelial cell marker CD31 (green) and actin (red). (B) HUVEC/MSC cultured in LunaGel™ low stiffness form perfusable capillary networks in microfluidic chips.

Engineering anisotropic muscle tissue

Myoblasts (C2C12) encapsulated in LunaGel™ form functional myotubes – microscopic muscle fibres that spontaneously start twitching as they mature. In this study, myoblasts suspended in LunaGel™ pre-cursor solutions were first patterned to form lines using standing ultrasound waves, followed by photocrosslinking of the LunaGel™ matrix. This process "locked" the cells in place, allowing them to form into highly aligned muscle fibres that express key markers of skeletal muscle tissue (Figure 10) and twitch, just like real muscles.

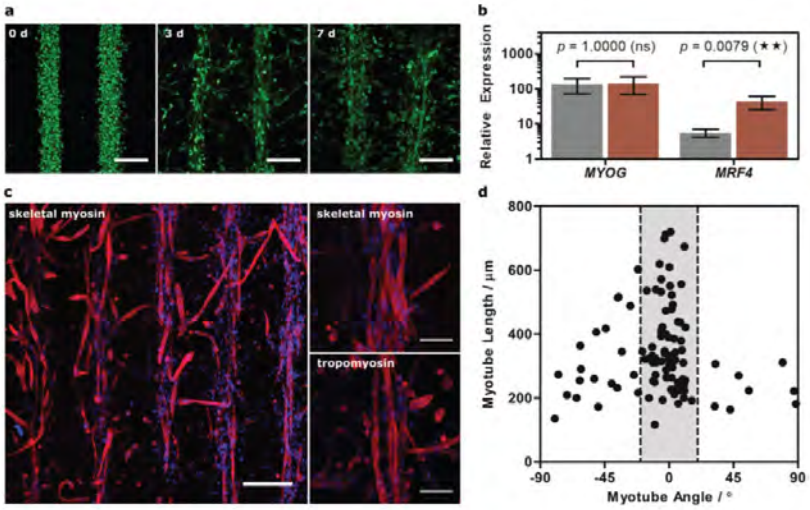


Figure 10: Engineered ultra-sound pat terned muscle tissue in LunaGel™ *(Armstrong, et al, Advanced Materials, 2018)*

(a) Confocal images of patterned myoblasts stained with Calcein over 7 days of culture. (b) Relative gene expression of skeletal muscle markers MYOG and MRF4 in unpatterned (grey) and patterned (red) tissues. (c) Immunostaining for skeletal muscle markers (red) and cell nuclei (blue) at day 7. (d) Myotube length as a function of orientation angle.

3D Bioprinting/Advanced Biomanufacturing

Bioprinting – the spatially controlled deposition of cells in so-called bioinks (hydrogels) using specialised 3D printing systems - is a hot topic in research. Bioprinting holds promise for the engineering of functional tissues and advanced 3D cell culture models. Below are some examples of LunaGel™ used as an advanced bioink for 3D printing.

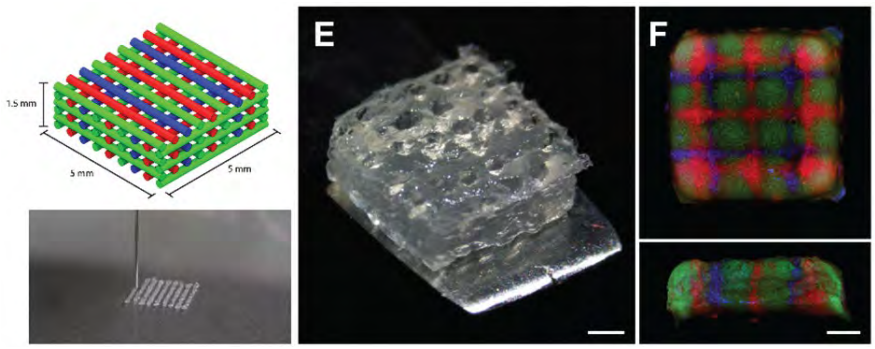


Figure 11: Bioprinting of LunaGel™ ECM.

LunaGel™ ECM was allowed to gelate at room temperature and extruded through a G20 needle using a Gesim BioScaffolder printing system.
To demonstrate the capability of precise deposition of multiple cell types in one print, fluorescent beads of different colours were embedded in the LunaGel™ matrix.

Bioprinting of cells embedded in LunaGel™, in this example human periodontal ligament fibroblasts, retains cell viability and facilitates the spreading, migration, and proliferation of embedded cells (Figure 12).

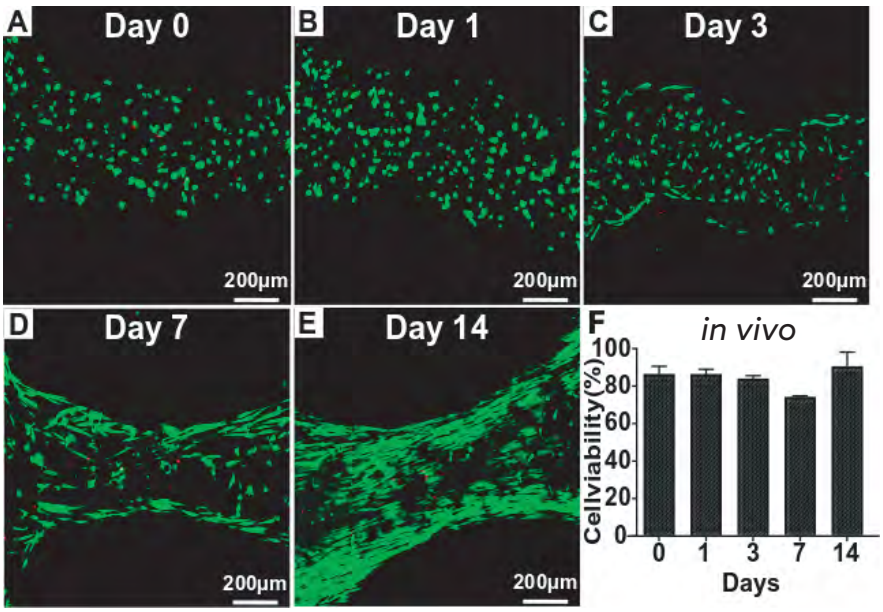


Figure 12: Bioprinting of human fibroblasts retains high cell viability and facilitates physiological cellular behaviour *(Raveendran, et al, Dental Materials, 2019)*

Human periodontal fibroblasts were resuspended in LunaGel™ ECM and printed using Gesim BioScaffolder. Living cells appear green, dead cells appear red.

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LunaCrosslinker™

Visible Light Crosslinking System

SKU: 0004

Features

- Easy handling at room temperature
- Photocrosslinking technology enables precise control of mechanical properties
- High bioactivity, supporting cell attachment and proteolytic degradation
- Compatible with automated liquid handling systems for streamlined workflows
- Optically Transparent, forms hydrogels compatible with standard imaging systems and bioassays

Protocol

- Reconstitute the photoinitiator in PBS, mix with LunaGel™ ECM and cells, and photocrosslink the solution using the LunaCrosslinker™ to form 3D cell culture models. By controlling the duration of light exposure you can produce hydrogels with a specified stiffness. Add your favourite culture media and you're culturing in 3D!

Kit Contents

- 5 mL LunaGel™ ECM (2x/1.5x solution, sterile), This kit contains enough LunaGel™ to create a total volume of 10 mL/7.5 mL hydrogel
- 5 vials of photoinitiator (freeze-dried, sterile)

BIOKÉ
www.bioke.com

LunaGel™
Photocrosslinkable Extracellular Matrix

The major components of LunaGel™ include the ECM proteins collagen type I, III, IV, and V, as well as connective tissue glycoproteins and proteoglycans. LunaGel™ retains the intrinsic cell-instructive bioactivity of natural ECMs facilitating cell attachment, proliferation, differentiation, migration, and proteolytic degradation. LunaGel™'s unique photocrosslinking technology allows unprecedented control over matrix porosity and stiffness, allowing researchers to replicate the physicochemical properties of a variety of healthy and diseased tissues in 3D cell culture applications.

LunaGel™ ECM has been successfully used in a wide range of applications including cell attachment and proliferation, stem cell culture and differentiation, mechanotransduction assays, cancer spheroid assays, angiogenesis assays, 3D bioprinting, tissue engineering, and more.

LunaGel™ is supplied as a sterile solution with freeze-dried photoinitiator. Available as Low Stiffness (0 - 6.5 kPa) and High Stiffness kits (0 - 25 kPa).

Cold Water Fish Skin

- No heating or cooling is required
- Cell-instructive motifs for optimal cell growth and differentiation
- Optically Transparent: Forms hydrogels compatible with standard imaging systems and bioassays
- Easy to use: Handle at room temperature

SKU: 0007 I Low stiffness (0 - 6.5kPa), 10 mL

SKU: 0011 I High stiffness (0 - 25kPa), 7.5 mL

Porcine Skin

- Cell-instructive motifs for optimal cell growth and differentiation
- Optically Transparent: Forms hydrogels compatible with standard imaging systems and bioassays
- Easy to use: Handle at room temperature

SKU: 0002 I Low stiffness (0 - 6.5kPa), 10 mL

SKU: 0012 I High stiffness (0 - 25kPa), 7.5 mL

Bovine Skin

- Cell-instructive motifs for optimal cell growth and differentiation
- Optically Transparent: Forms hydrogels compatible with standard imaging systems and bioassays
- Easy to use: Handle at room temperature

SKU: 0019 I Low stiffness (0 - 6.5kPa), 10 mL

SKU: 0020 I High stiffness (0 - 25kPa), 7.5 mL

Bovine Bone

- Cell-instructive motifs for optimal cell growth and differentiation
- Optically Transparent: Forms hydrogels compatible with standard imaging systems and bioassays
- Easy to use: Handle at room temperature

SKU: 0005 I Low stiffness (0 - 6.5kPa), 10 mL

SKU: 0009 I High stiffness (0 - 25kPa), 7.5 mL

LunaGel™ Ultrapure GelMA ECM

- High Purity: Based on Rousselot X-Pure® GelMA with ultra-low impurity levels
- Low bacterial endotoxin levels
- GMP-Grade
- Stable at room temperature
- Optically Transparent: Forms hydrogels compatible with standard imaging systems and bioassays

SKU: 0017 l Low stiffness (0 - 6.5kPa), 10 mL

SKU: 0018 l High stiffness (0 - 25kPa), 7.5 mL

LunaGel™ Cell Recovery Kit

- Recovers viable cells, spheroids, and organoids
- Hydrogel digestion in under 1 hour at 37°C
- Supports re-seeding, nucleic acid and protein extraction, flow indent
- Designed for LunaGel™ matrices

SKU: 0015

Gelatin Methacryloyl (GelMA)

- Lyophilized and sterile
- Degree of methacrylation: 75 – 85%
- Customizable: Reconstitute in PBS or HEPES buffer at desired concentration
- Blendable: Can be used alone or combined with other materials

SKU: 0014 l Gold Water Fish, 1g

SKU: 0010 l Porcine Skin, 1g

SKU: 0024 l Bovine Skin, 1g

SKU: 0013 l Bovine Bone, 1g

LAP Photoinitiator

- Ready-to-use

SKU: 0021

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