

Kick-off Meeting
Barcelona, 31st May 2018



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Background to Biogelx

- Biomaterials Company
- Spin-out from University of Strathclyde in 2013
- HQ at Biocity near Glasgow, Scotland
- Currently 10 employees
 - x 4 PhD scientists
- 3D Biomaterials specialist offering proprietary technologies and leading expertise in the area of **synthetic peptide hydrogels**
- Hydrogels can easily be tuned chemically and mechanically to match natural tissue environment for given cell types in a range of applications



Key focused areas

Applications

- 3D Cell Culture
 - In-vitro assays
 - Drug Discovery
 - High Content Screening
 - Drug Safety Testing
 - Lab on a chip
- 3D Bio-printing
 - Bioinks
 - Improved printability and biocompatibility
- Regenerative Medicines (clinical)
 - Tissue Engineering & Regeneration
 - Cellular therapies
- Drug Delivery

Customers & Collaborators

- Biotech/Pharma R&D
- Academic researchers
- Developers ATMP's
- Preclinical CROs
- Media manufacturers
- Cell culture platform providers
- Bioassay kit providers
- Cosmetic companies

Peptide Hydrogels

- 3D
- 99% water
- Nanoscale matrix structure
- Short peptides self assemble into fibers
- Suitable surface for cell adhesion
- Animal-free



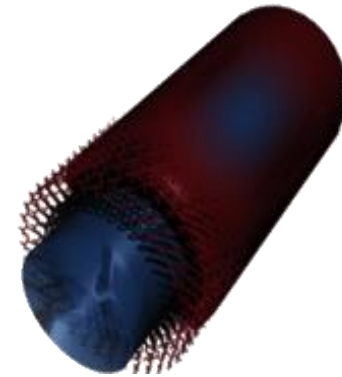
Product Technology

Gelator peptide



+

Surfactant peptide



Fiber assembly

Biogelx powder



ADD
WATER



'Pre-gel' solution



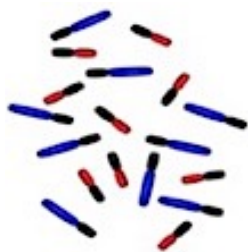
ADD
MEDIA



Gels for 2D/3D cell culture



Biogelx powder

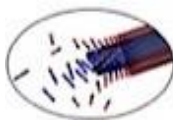


ADD
WATER



Fibre
co-assembly

'Pre-gel' solution



ADD
MEDIA



Gel crosslinking
using cell media

Gels for 2D/3D cell culture



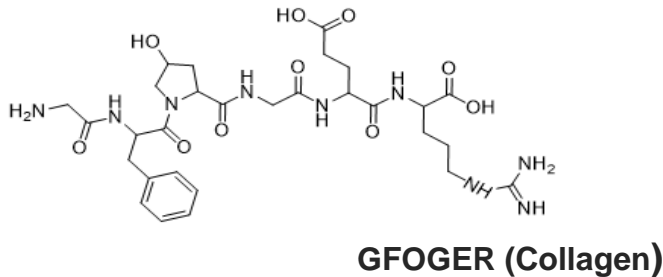
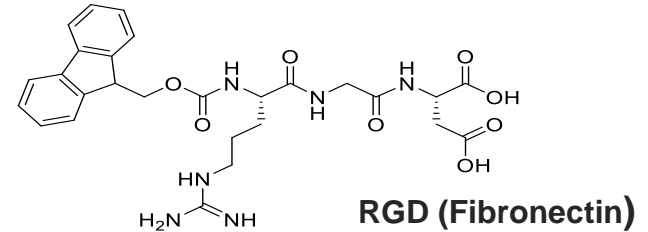
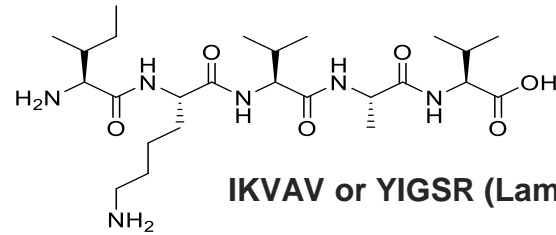
Mechanically Tuneable - A Gel for Every Cell



Our peptide hydrogels can be tuned mechanically to match the natural tissue environment for a given cell type

Chemically Tunable

- Surfactant functionality can be altered
- Synthetic biomimetic sequences
- Alternative to proteins and growth factors
- Mechanical tuneability still possible



Product Range

- Biogelx Standard Powder
- Biogelx Functionalised Powders
 - Biogelx - RGD (fibronectin)
 - Biogelx - IKVAV (laminin)
 - Biogelx - YIGSR (laminin)
 - Biogelx - LBA (lactobionic acid)
 - Biogelx - GFOGER (collagen)
- Biogelx Custom Powders
 - Custom formulations matched for specific tissue types
- Pack Sizes
 - 50mg 100mg 250mg 500mg



Totally tuneable
Simple chemistry
Flexible handling

Competitive Positioning

	ANIMAL DERIVED Collagen, Matrigel	NATURAL HYDROGELS Alginate, Silk Materials	SYNTHETIC POLYMERS Polyacrylamide, PEG	OTHER PEPTIDE HYDROGELS Puramatrix, Peptigel	BIOGELX™ GELS
BIOCOMPATIBILITY	✓	✓	✓	✓	✓
EASE OF USE	✗	✓	✗	✗	✓
REPRODUCIBILITY	✗	✗	✓	✓	✓
MECHANICAL TUNEABILITY	✗	✗	✗	✗	✓
BIOMIMETIC FUNCTIONALITY	✓	✗	✗	✗	✓
CLINICAL APPLICABILITY	✗	✓	✓	✓	✓

Participation in the project



ESR 9 - BGX	Development of Peptide Hydrogels for Use in Anti-Cancer Strategies	PhD: Yes	Deliv.: 3.1, 3.3	Start date: M9	Duration 36	WP3
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Biogelx has designed functionalized gels that provide **appropriate extracellular matrix (ECM) components** in a 3D configuration with **controllable mechanical properties**. The possibility of utilizing our hydrogels to mimic both healthy and cancerous tissue environments could provide a valuable tool for drug discovery

Participation in the project



Dr. Laura Goldie (PI)
Head of Technical Services
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Mitch Scanlan
CEO
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Dr. Elia Lopez-Bernardo
Global BD Manager
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Research Responsibilities



WP3: *In vitro* Delivery and Imaging

Task 3.1: Synthesis catalysts carriers bearing targeting ligands

Task 3.3: Test the efficiency of prodrug conversion in 2D and 3D cancer models

ESR 9 – BGX Objectives:

1. Design and synthesize hydrogels mimicking both healthy and cancerous tissue
2. Development of a realistic *in vitro* 3D cancer model using peptide hydrogels
3. Gain insight into the ability of peptide hydrogels to act as nanoparticle carriers

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Secondments and Deliverables



Secondments:

Technische Universiteit Eindhoven – synthesis of gel-based catalysts (M27, 3 months)

IBEC – imaging gels with STORM (M36, 4 months).

Expected results:

D3.3: Peptide hydrogel formulations tuned to mimic cancer

D3.3: *In vitro* model for testing nanoparticle delivery

D3.1: Peptide hydrogel formulations for therapeutic delivery of catalytic NP

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Training



Providing technical training on hydrogels for 3D cell-based models and knowledge on the start-up and spinoff system, entrepreneurship and career development in industries and SMEs

Events:

1. Introducing the THERACAT Network & How to plan and start a PhD (Month 12)
5. Getting ready for the next career step (Month 36)

Planned Secondments at BGX:

ESR7 - IBEC: Imaging of gel models. To be scheduled. ~Month 21 (3 months)

ESR8 -TUE: Testing activity of SCPN in gel models. To be scheduled. ~Month 36 (3 months)

Committee participation:

Member of THERACAT Training Committee

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