

Date

Deadline

CONTACT

Organisation	3DBioFibR Inc.	Department	Business Development
Contact person	Jonathan Krupski	Email	jkrupski@3dbiofibr.com
City	Halifax	Website	https://3dbiofibr.com/
Country	Canada		

Organisation type

Research organisation type	☐ Research Organisation ☐ University ☒ Company ☐ Other	Is your company a Small and Medium Sized Enterprise (SME*)? Number of employees: 17	☒ YES ☐ NO
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Your enterprise is an SME if:

- it is engaged in **economic activity**
- it has **less than 250 employees**
- it has either an **annual turnover not exceeding €50M**, or an **balance sheet total not exceeding €43M**
- it is **autonomous**

For the definition of SMEs, look at: http://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition_en

Short introduction of key areas of institute's research: 3DBioFibR is a biomaterials manufacturer that specializes in the production of nano/microscale biopolymer fibres. We have developed a patent-issued contact drawing technology that can produce fibres from any naturally self-assembling biopolymer, including collagen, chitosan, spider silk, cellulose, alginate, zein, and keratin, as well as synthetic polymers like PCL. Our technology achieves 3,600x the production scale of electrospinning, producing fibres that recapitulate natural structure and mechanics. We provide fibres in a number of different form factors. These include 2D/3D non-woven scaffolds, with thickness, porosity, and overall architecture that can be tuned in-line with specific end-use applications. Our collagen fiber (CollaFibR®) scaffolds are proven to drive attachment and aligned proliferation of a wide range of cell types, including iPCs, MSCs, fibroblasts, myoblasts, sensory neurons, keratinocytes, and endothelial cells. As such our CollaFibR® scaffolds have been applied by clinical partners and researchers as an ECM-like matrix for applications 3D Cell Culture (organoids, organ-on-chip) and tissue engineering. We can also process biopolymer fibres into multifilament yarns of indefinite lengths, which can be braided, knitted, or woven into higher-order textiles. Our collagen yarns exhibit impressive tenacity and elongation at break, rendering them compatible with industrial weaving, braiding, and knitting processes. These yarns are load bearing and fully resorbable, facilitating integration into textile-based implantable devices with optimized biocompatibility. For bioprinting applications - we offer μ CollaFibR™, an additive for bioinks and hydrogels composed of short collagen fibres (50 μ m length), that functions to improve shape retention of bio-printed constructs. μ CollaFibR™ acts like rebar in cement, improving mechanical strength of bioprinted constructs in both extension and compression – mitigating cell driven compaction. μ CollaFibR™ therefore allows users to print with high fidelity without relying on heavy crosslinking – reducing the overall stiffness within their construct to make for a more cell-friendly environment. Unlike traditional bioink additives, μ CollaFibR™ does not affect bioink viscosity - allowing for easy integration into existing printing protocols. μ CollaFibR™ also acts as a physiologically relevant site for cell attachment, facilitating organized cell growth while providing the physiochemical cues required to develop complex tissue systems. μ CollaFibR™ is compatible with most common bioinks (GelMA, alginate, agarose, gelatin, etc.), and can be dispersed in any aqueous solvent (pH>2).

Former participation in an FP European project?

☐ YES ☒ NO

Project title / Acronym:

Activities performed:

Expertise / Commitment offered

Description of your expertise:

3DBioFibR is a diverse team of polymer physicists, biochemists, and experienced business leaders, including 5 PhDs. Our CEO, Kevin Sullivan, has 25+ years of experience in biotech, and has raised over \$90 million in equity, debt, and non-dilutive funding from agencies including the U.S. DoD, NIH, NIAID, Industry Canada, and IRAP. Our CSO, Dr. John Frampton, is a Tier II Canada Research Chair in Cellular, Biomaterial, and Matrix Interaction, and has published over 40 papers and 2 patents. This range of expertise, coupled with our proprietary fiber manufacturing technology, renders 3DBioFibR a high-value partner for companies searching for fine-tuned, high-performance biomaterials, both in early-stage R&D projects and long-term commercial relationships. Specialized testing capabilities include uniaxial tensile testing, compression testing, cell culture (BSL 2), refractometry, ATR-FTIR, NMR, circular dichroism, AFM, SDS-PAGE, dynamic light scattering, rheology, SEM, TEM, LC-MS, XRD.

Keywords specifying your expertise:

Biopolymer Fiber, Collagen, Chitosan, Spider Silk, Cellulose, Alginate, Hyaluronic Acid, PCL, Non-wovens, Scaffold, Yarn, 3D Cell Culture, Bioprinting, Bioink, Matrix, Organoid, Organ-On-Chip, Human Tissue Model, Tissue Engineering, Cell Therapy, Wound Care, Suture, Soft Tissue Repair, Orthopaedics, Defence, Textiles.

Commitment offered:

☒ Research
 ☐ Demonstration
 ☐ Training
☒ Technology
 ☐ Dissemination
 ☐ Other:

Interested in participation in project types:

☒ Research & Innovation Action
 ☐ Innovation Action
 ☐ EIC Pathfinder

Work Programme research areas: indicate your interest

Call topic(s): HORIZON-HLTH-2027-03-TOOL-02: Advancing bio-printing of living cells for regenerative medicine

Do you have other partners for this topic (which partners/country)?

Profile of partner sought

Role

☐ technology development
 ☐ research
 ☐ training
☐ dissemination
 ☐ demonstration
 ☐ other _____

Country /region

☐

Expertise required

I agree with the publication of my contact data:

☒ YES

☐ NO