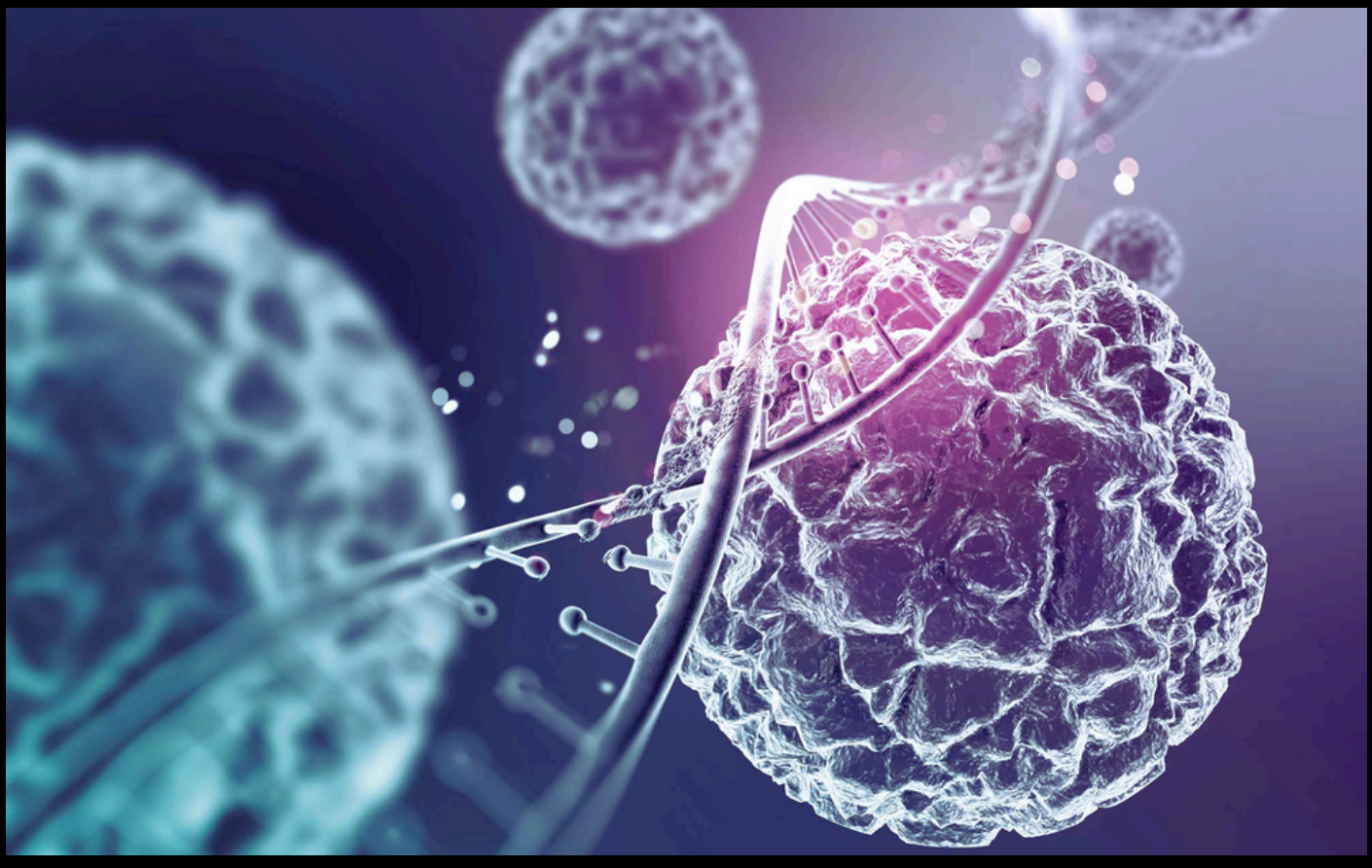
DEEPTECH INSIDER

Startup Series

Where Breakthrough Innovations Begin

BIOTECH

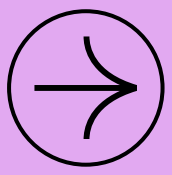
20 emerging innovators to watch in 2026 and beyond



FUSIX BIOTECH | CELLEVATE | EPOCH BIODESIGN | ALTERNATIVE PLANTS | WOAMY
AMPHISTAR | SAVEGGY | OCTARINE BIO | MIALGAE | ARSENALE BIOYARDS
GENERARE BIOSCIENCE | RHIZOCORE | EVODIABIO | CHROMOLOGICS | MULTUS
TWOGEE BIOTECH | MOA FOODTECH | SOLAR FOODS | ZYMVOL | NOVOBIOM

ENGINEERING THE BIOECONOMY

Nature as a Driver of Industrial Innovation



Life has spent billions of years solving problems that scientists are only beginning to understand. From molecular self-assembly and biological sensing to carbon fixation and cellular manufacturing, nature has evolved systems of extraordinary complexity and efficiency.

Today, a new generation of biotechnology companies is learning not only to study these systems, but to engineer and industrialise the biological processes that underpin them. Across food production, healthcare, advanced materials, agriculture, and environmental management, biology is increasingly becoming a manufacturing technology.

Cells, enzymes, microbes, and biological pathways are being developed into tools capable of producing everything from novel therapeutics and specialty chemicals to sustainable ingredients, functional materials, and environmental solutions.

Recent advances in synthetic biology, precision fermentation, computational biology, artificial intelligence, and automation are accelerating this transition.

Researchers can now analyse, model, and engineer biological systems at an unprecedented scale, opening access to molecular functions and biochemical pathways that were previously inaccessible within nature's vast biological diversity. At the same time, governments, industries, and investors are placing increasing strategic importance on biological innovation.

The ability to manufacture critical materials, ingredients, chemicals, and therapeutics through biological processes is becoming an important factor in supply-chain resilience, resource security, and industrial competitiveness. As a result, biotechnology is moving from a specialised scientific field toward a foundational technology underpinning multiple sectors of the global economy.

The companies featured in this issue represent some of the most promising emerging innovators operating across the European biotechnology ecosystem. Their technologies span enzyme engineering, computational protein design, microbial manufacturing, advanced therapeutics, circular bioeconomy solutions, and next-generation industrial bioprocesses.

Many are building entirely new production pathways based on biological systems, while others are uncovering previously inaccessible molecules, materials, and biological functions. Together, the 20 Emerging Innovators in Biotech showcase the founders, scientists, and entrepreneurs translating advances in biology into new industrial capabilities, products, and markets.

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BIOTECH

20 EMERGING INNOVATORS 2026

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ARSENALE BIOYARDS

ARSENALE BIOYARDS

AI-DRIVEN FERMENTATION
AND BIOMANUFACTURING
INFRASTRUCTURE

© Arsenale Bioyards

BIOINFRASTRUCTURE FOR PRECISION FERMENTATION AT SCALE

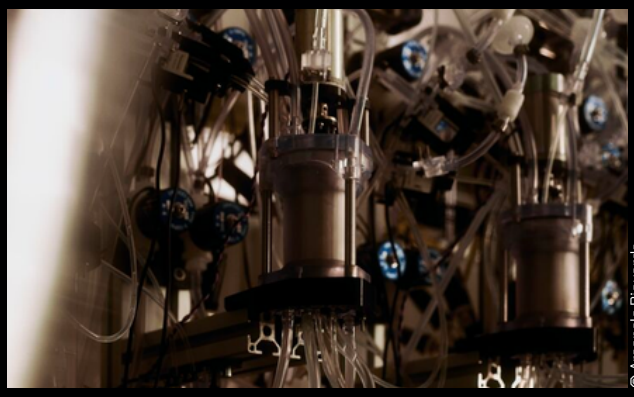
The transition toward bio-based production has long faced a persistent bottleneck: promising results achieved in laboratory environments often become difficult, slow, and expensive to reproduce under industrial conditions. This challenge has limited broader adoption of precision fermentation across sectors such as food, chemicals, materials, and consumer products. Italian company Arsenale Bioyards focuses on addressing this gap through an integrated platform designed to connect biological development with large-scale manufacturing. The company combines a data and AI engine with fermentation hardware and industrial production infrastructure intended to enable commercial production of bio-based alternatives at lower cost and greater speed. Arsenale aims to support more scalable deployment of biological manufacturing systems across multiple industries.

Technology and Product
Arsenale develops an integrated biomanufacturing platform intended to connect laboratory experimentation with industrial production. Small-scale fermentation systems generate process data that feeds into AI-driven modelling tools designed to analyse fermentation behaviour and scale-up scenarios. The company's larger production environments, called BioYards, provide industrial fermentation capacity for commercial manufacturing. Continuous feedback across development stages is intended to improve process optimisation, reduce scale-up complexity, and support faster deployment of bio-based production processes.

Industrial Fit and Applications
Precision fermentation is attracting increasing attention for producing food ingredients, specialty chemicals, biomaterials, and other engineered biological products. Arsenale positions its infrastructure as the production layer for organisations seeking pathways from early R&D toward commercial manufacturing. By combining process development, data generation, AI analysis, and production capacity, the platform is intended to address bottlenecks associated with industrial scaling. Wider adoption of such systems could contribute to growth of bio-based manufacturing ecosystems across multiple sectors.

Founding Team
Arsenale was founded by Massimo Portincaso (CEO), Niels Agerbaek (CTO), Matteo Zanotto (CIO/AI), and Arnaud Legris (COO). The founding and leadership team combines experience across biotechnology, industrial operations, scaling and commercialisation of scientific ventures. Founded in 2023, the company has expanded internationally while developing infrastructure intended to support industrial biomanufacturing and broader deployment of precision fermentation technologies.

Piccolo automated micro bioreactor platform for fermentation optimisation under industrial conditions.



Standardised bioreactor architecture designed to support scalable fermentation deployment.

Arsenale founders Matteo Zanotto, Massimo Portincaso, Niels Agerbaek, and Arnaud Legris (left to right).

Arsenale Bioyards srl.
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ZYMVOL

PHYSICS BASED MODELLING
FOR ENZYME DISCOVERY
AND OPTIMISATION

ACCELERATING ENZYME DISCOVERY FOR INDUSTRIAL BIOCATALYSIS

Industrial manufacturing is under increasing pressure to improve efficiency, reduce waste streams, and lower dependence on resource intensive chemical processes. Enzymes are attracting growing attention because they can catalyse highly selective reactions under comparatively mild conditions, making them relevant for pharmaceuticals, chemicals, food ingredients, materials, and other industrial sectors. However, discovering suitable enzymes for specific reactions remains a major technical challenge due to the enormous complexity of protein sequence space and reaction behaviour. Barcelona-based company Zymvol develops computational technologies intended to accelerate the enzyme discovery and optimization process through physics-based molecular modelling and AI. The company focuses on helping industrial partners identify and optimise biocatalysts for production relevant applications while reducing experimental screening efforts and development timelines.

Technology and Product
Zymvol develops computational enzyme discovery and optimisation technologies for industrial biocatalysis. Its platform combines physics based molecular modelling, AI, bioinformatics, and laboratory validation to identify promising enzyme candidates and variants before extensive screening begins. The company supports projects ranging from enzyme discovery to optimisation of key industrial performance parameters, such as activity, selectivity and stability. Zymvol describes its approach as a way to explore large sequence spaces, prioritise candidates, and reduce experimental workload while keeping development linked to real industrial reaction conditions. Its services include in silico screening, enzyme engineering campaigns, and project support for new catalytic routes.

Industrial Fit and Applications
Zymvol works with companies seeking enzyme based routes for pharmaceuticals, fine chemicals, speciality ingredients, materials, and other industrial processes. Biocatalysis can support lower temperature reactions, improved selectivity, and more sustainable production pathways where suitable enzymes can be identified and scaled. Through collaborations, including work linked to industrial scale manufacturing partners, Zymvol positions its platform as a bridge between computational enzyme design, lab validation, and implementation in production relevant settings.

Founding Team
Zymvol was founded in 2017 by Dr. Maria Fátima Lucas, Dr. Emanuele Monza, and Víctor Gil. CEO Maria Fátima Lucas previously worked in computational chemistry and enzyme modelling, including research at the Barcelona Supercomputing Center. Her team combines expertise across molecular simulations, biocatalysis, software, and industrial enzyme development. This multidisciplinary background forms the basis of Zymvol's focus on computational enzyme discovery and industrial biocatalysis technologies.

In silico enzyme screening and molecular simulations for industrial biocatalysis applications.

Laboratory validation and optimisation of enzyme candidates for industrial biocatalysis.

Zymvol founder and CEO Dr. Maria Fátima Lucas.

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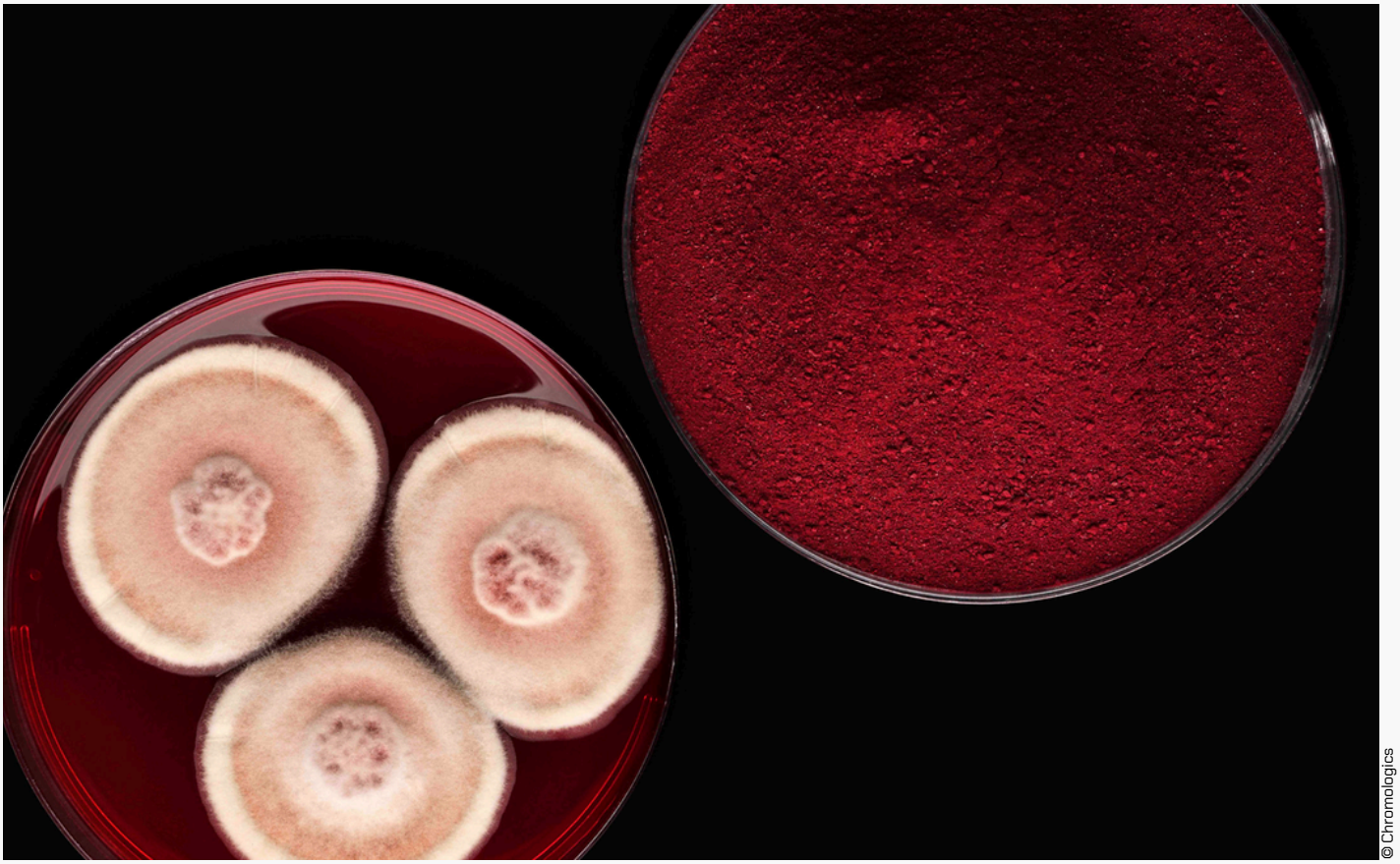
CHROMOLOGICS

FERMENTATION DERIVED NATURAL COLOURANTS FOR FOOD AND INDUSTRY



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PRECISION FERMENTATION FOR SUSTAINABLE COLOUR PRODUCTION

Colour plays a critical role across food, beverage, cosmetic, textile, and consumer product markets. Yet many widely used colourants continue to rely on synthetic chemistry, agricultural feedstocks, or animal derived ingredients that can present challenges related to sourcing, consistency, and sustainability. At the same time, manufacturers are often seeking natural alternatives that meet demanding performance requirements and can be produced at industrial scale. The Danish biotechnology company Chromologics develops fermentation derived colourants based on fungal production platforms. Originating from research at the Technical University of Denmark, the company applies precision fermentation to produce natural pigments designed for industrial applications. Its flagship ingredient, Natu.Red®, is positioned as a vegan, water soluble red colourant for food and beverage use.

Technology and Product
Chromologics develops natural colourants through submerged precision fermentation. For its flagship ingredient Natu.Red®, the company ferments a fungus with sugar and nutrients in water, enabling the organism to produce a red pigment during the process. This approach is intended to reduce dependence on extraction from crops, insects, or other raw materials that can be affected by seasonality, land use, and supply variability. According to Chromologics, its fermentation platform supports scalable production of stable, vegan, and water soluble colourants compatible with a wide range of dietary requirements including kosher and halal applications.

Industrial Fit and Applications
The company initially focuses on food and beverage manufacturers seeking natural alternatives to synthetic colours or insect derived carmine. Natu.Red® is positioned for broad food applications where stability, sourcing reliability, and dietary compatibility are important. The company has also explored potential use in cosmetics and other industries requiring natural colour solutions. By using fermentation instead of crop or insect extraction, Chromologics aims to offer more predictable production and reduce reliance on agricultural variability, while supporting manufacturers responding to consumer and regulatory demand for natural ingredients.

Founding and Management Team
Chromologics was co founded in 2017 by Gerit Tolborg and Anders Ødum as a spin out from the Technical University of Denmark. The company builds on Tolborg's PhD research, which led to the discovery of a novel group of fungal pigments. In 2026, Chromologics announced that Christian H. Steffensen would become CEO as Tolborg stepped down after leading the company from its early development phase toward regulatory submission and commercial launch.

© Chromologics
Submerged fungal fermentation for production of natural colourants using renewable feedstocks and scalable bioprocessing.


© Chromologics
Natu.Red® is designed for applications across confectionery, bakery, dairy, plant based foods, and non food sectors including cosmetics.


© Chromologics
Chromologics founders Gerit Tolborg and Anders Ødum

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ALTERNATIVE PLANTS

ACCESSING RARE BOTANICAL COMPOUNDS THROUGH PLANT CELL TECHNOLOGIES

ALTERNATIVE PLANTS

PLANT STEM CELL INGREDIENTS FOR SUSTAINABLE COSMETICS

Some of the most sought-after ingredients in modern cosmetics originate from plants that are difficult to cultivate at scale or grow only in specific ecological niches. As demand for natural actives increases, manufacturers face growing challenges related to resource availability, supply consistency, and biodiversity protection. Latvian biotechnology company Alternative Plants develops sustainable production routes for botanical ingredients used in cosmetic formulations. Rather than depending solely on agricultural cultivation or wild harvesting, the company applies biotechnology to create controlled manufacturing processes for plant-derived actives. Its activities focus on enabling reliable access to high-value botanical compounds while reducing pressure on natural plant resources.

Technology and Product
Inside a plant, specialised cells produce a wide range of secondary metabolites that contribute to defence, regeneration, and environmental adaptation. Many of these molecules are also valued as cosmetic actives. Alternative Plants develops proprietary plant cell lines derived from selected medicinal and rare plant species and cultivates them under controlled bioprocess conditions. The company combines plant tissue culture, cell line selection, bioreactor cultivation, extraction technologies, and analytical characterisation to produce ingredients with defined compositions. According to Alternative Plants, this approach enables reproducible production independent of seasonal variation and agricultural growing conditions.

Industrial Fit and Applications
Botanical ingredients are widely used across the cosmetics industry, but conventional sourcing often depends on agricultural production, seasonal availability, and harvesting of natural plant resources. Alternative Plants positions plant cell cultivation as an alternative production route capable of supplying bioactive compounds independent of climate and land-use constraints. The ingredients are developed for skincare, anti-ageing, skin-barrier, antioxidant, anti-inflammatory, and scalp-care applications. Through efficacy testing, ingredient characterisation, and collaboration with cosmetic manufacturers, the startup supports the development of scientifically characterised botanical formulations.

Founding and Management Team
Alternative Plants was founded by Anna Ramata-Stunda (CEO/CSO) and Mārtiņš Borodušķis (COO/CTO), who have been developing plant cell cultivation technologies since 2017. Combining expertise in biotechnology, plant cell culture, cosmetic ingredient development, and commercialisation, the founders established the company to translate plant stem cell research into industrial applications.

Selected plant species used as sources for the development of plant cell-derived ingredients.

Alternative Plants' SilvaCell ingredient is developed for cosmetic formulations focused on skin barrier support and antioxidant skincare applications.

The Alternative Plants team with founders Anna Ramata-Stunda and Mārtiņš Borodušķis (front row, centre and first from left).

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Website: www.alternativeplants.eu/

SOLAR FOODS

PROTEIN PRODUCTION FROM
AIR, ELECTRICITY, AND CO_2

© Solar Foods

GAS FERMENTATION PLATFORM FOR NEXT-GENERATION FOOD SYSTEMS

Most food production today remains fundamentally tied to agriculture, requiring arable land, water, favourable climate conditions, and complex supply chains. As global demand for protein continues to increase, researchers and companies are exploring alternative production methods that reduce dependence on these constraints. The Finnish food technology company Solar Foods develops microbial protein production systems designed to decouple food manufacturing from conventional agriculture. Its flagship product, Solein®, is produced using a naturally occurring single-cell microorganism cultivated through a gas fermentation process that uses carbon dioxide, hydrogen, oxygen, and mineral nutrients. Originating from research conducted by VTT Technical Research Centre of Finland and LUT University, the technology aims to create a new category of protein production based on renewable electricity and industrial bioprocessing rather than traditional farming.

Technology and Product
Instead of feeding microorganisms with agricultural sugars or plant-derived feedstocks, Solar Foods cultivates its Solein® microorganism using gases generated from air, water, and electricity. Water is first separated into hydrogen and oxygen through electrolysis, after which the microorganism grows by using hydrogen as an energy source together with carbon dioxide, oxygen, and nutrients inside a bioreactor. The resulting biomass is processed into Solein®, a protein-rich ingredient containing protein, dietary fibre, fats, vitamins, and minerals. Solar Foods states that Solein originates from a natural, non-modified single-cell organism and is designed as a functional ingredient for food applications.

Industrial Fit and Applications
Solein is designed as an ingredient platform for food manufacturers. According to Solar Foods, the protein can be incorporated into dairy alternatives, meat alternatives, beverages, snacks, spreads, noodles, pasta, bakery products, and other food categories. The company is developing production facilities intended to scale industrial manufacturing of Solein while expanding regulatory approvals across international markets. Wider adoption of gas fermentation-based protein systems could support efforts to diversify food production pathways and reduce dependence on conventional agricultural inputs in selected food industry applications.

Founding Team
Solar Foods was founded by Dr. Pasi Vainikka and Dr. Juha-Pekka Pitkänen based on research originating from VTT Technical Research Centre of Finland and LUT University. Vainikka previously worked in renewable energy and energy systems research at VTT, while Pitkänen specialised in bioprocess technology and biotechnology development. Their combined expertise in energy systems, industrial biotechnology, and process engineering forms the foundation of Solar Foods' gas fermentation platform and Solein® production technology.

Solein® protein produced through Solar Foods' gas fermentation process using carbon dioxide, hydrogen, and microbial cultivation.

The ingredient can be incorporated into beverages, dairy alternatives, snacks, bakery products, and other food applications.

Solar Foods co-founder Dr. Pasi Vainikka at the company's Solein® production bioreactor facility.

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RHIZOCORE

MYCORRHIZAL FUNGI TECHNOLOGIES
FOR WOODLAND REGENERATION

RHIZOCORE
TECHNOLOGIES

© Rhizocore

RESTORING FOREST ECOSYSTEMS THROUGH APPLIED MYCOLOGY

Large scale reforestation and ecosystem restoration increasingly face a challenge below ground level: degraded soils often lack the fungal networks that support healthy tree establishment and long term woodland resilience. Mycorrhizal fungi form symbiotic relationships with plant roots, influencing nutrient uptake, water availability, stress tolerance, and broader ecosystem dynamics. Intensive land use, agriculture, and deforestation can disrupt these underground systems, contributing to lower survival rates in newly planted forests. UK company Rhizocore Technologies develops fungal solutions intended to restore these relationships through locally adapted mycorrhizal inoculants. The company focuses on applying mycology to improve woodland regeneration, strengthen ecosystem resilience, and support restoration strategies in forestry and environmental management.

Technology and Product
Rhizocore develops locally adapted mycorrhizal fungal inoculants designed to enhance tree establishment and woodland restoration. Its flagship product, RhizoPellet™, contains screened fungal strains selected for compatibility with specific planting environments and tree species. According to the company, these fungi form symbiotic networks with roots, increasing nutrient and water uptake while improving resilience to drought and soil stress. The platform combines fungal isolation, cultivation, bioprocessing, and field validation to support scalable deployment across forestry environments. Rhizocore reports screening collections of locally adapted fungal strains to identify species associated with improved tree establishment and growth outcomes.

Industrial Fit and Applications
Rhizocore develops applied mycology technologies for forestry, land management, and environmental remediation. In forestry, its solutions support woodland creation, ecosystem restoration, and commercial planting projects by improving tree establishment and resilience under changing environmental conditions. Beyond forestry, the company is developing fungal-based remediation systems designed to reduce nutrient pollution from agricultural runoff before it reaches rivers and waterways. Together, these applications highlight the potential of applied mycology as a nature-based approach to challenges across agriculture, water management, and ecosystem restoration.

Founder
Rhizocore was founded by CEO Dr. Toby Parkes, a plant scientist whose work focuses on plant–microbe interactions and ecological restoration. He holds a PhD in Biochemistry from the University of Bath and previously conducted research at the Royal Botanic Gardens, Kew, contributing to the Millennium Seed Bank Project. His background in plant science and conservation biology forms the foundation of Rhizocore's applied mycology technologies and environmental focus.


© Rhizocore
Locally adapted mycorrhizal fungi form symbiotic relationships associated with tree growth and ecosystem resilience.


© Rhizocore
Fungal networks beneath forest soils support nutrient uptake, tree establishment, and ecosystem regeneration.


© Rhizocore
Rhizocore founder Dr. Toby Parkes.

Rhizocore Technologies
UK Agri-Tech Centre, Roslin EH25 9RG, UK
Website: www.rhizocore.com/

MOA FOODTECH

AI-DRIVEN FERMENTATION
FOR FUNCTIONAL
INGREDIENTS

© MOA Foodtech

TURNING FOOD INDUSTRY SIDE STREAMS INTO VALUABLE INGREDIENTS

Every year, the global food industry generates millions of tonnes of side streams rich in carbohydrates, proteins, fibres, and other nutrients. While much of this biomass is currently directed toward low-value uses, disposal, or energy recovery, it represents a largely untapped resource for high-value ingredient production. At the same time, food manufacturers face increasing pressure to reduce waste, improve resource efficiency, and secure alternative ingredient sources. Spanish biotechnology company MOA Foodtech addresses these challenges through a combination of artificial intelligence, fermentation science, and industrial biotechnology. By identifying viable fermentation routes for complex side streams, the company converts food-processing side streams into commercially relevant ingredients through tailored microbial conversion processes.

Technology and Product
The composition of agricultural and food-processing side streams can vary significantly depending on origin and processing conditions, making fermentation development a complex optimisation challenge. MOA Foodtech has developed Albatros™, an AI-driven platform designed to combine metabolic modelling and process simulation to identify suitable microorganisms and fermentation conditions for a given side stream. According to the company, this approach can reduce development timelines from months to significantly shorter evaluation cycles. According to the company, the system combines machine learning, metabolic modelling, microbial screening, and process simulation to support strain selection and fermentation design. By integrating computational process development with fermentation, downstream processing, and scale-up, MOA aims to accelerate the development of functional ingredients from diverse biomass streams.

Industrial Fit and Applications
As food manufacturers seek new ingredient sources and more resilient supply chains, fermentation is emerging as a route to diversify raw material inputs. MOA focuses on developing functional ingredients from agri-food side streams, targeting applications across food and feed markets. Working alongside food producers and ingredient companies, the startup evaluates how different biomass sources can be converted into commercially relevant products through tailored fermentation processes. The resulting ingredients are designed to integrate into existing manufacturing and distribution networks.

Founding Team
MOA Foodtech was founded in 2021 by Bosco Emparanza (CEO) together with Susana Sánchez (CSO) and José María Elorza (CFO). The founding team combines expertise in biotechnology, fermentation, food innovation, and industrial process development. Today, the company brings together specialists in artificial intelligence, microbial fermentation, ingredient development, and scale-up engineering.


© MOA Foodtech
Fermentation development and process optimisation support the conversion of agri-food side streams into functional ingredients.

© MOA Foodtech
Food-industry side streams can serve as feedstocks for the production of protein-rich and functional ingredients.


© MOA Foodtech
MOA Foodtech founders Bosco Emparanza, Susana Sánchez, José María Elorza (left to right).

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TWOGEE BIOTECH

TURNING BIOMASS RESIDUES
INTO SECOND-GENERATION
RAW MATERIALS

ENZYME ENGINEERING FOR CIRCULAR INDUSTRIAL FEEDSTOCKS

Every harvest leaves behind vast quantities of straw, stalks, husks, and other plant residues. While these materials contain valuable carbon-rich compounds, much of their potential remains locked within complex lignocellulosic structures that remain difficult to process efficiently. As industries seek alternatives to fossil-based raw materials, interest is growing in technologies capable of unlocking these underutilised resources. Munich-based startup Twogee Biotech develops customised enzyme solutions designed to convert agricultural and industrial biomass side streams into valuable feedstocks for biotechnology and sustainable manufacturing. By combining custom-fit enzyme cocktails, industrial production stains, circular economy principles and tech-licensing for cost-effective on-site enzyme production, the company provides economic solutions to transform low-value side streams into building blocks for the emerging bioeconomy.

Technology and Product
Breaking down lignocellulosic biomass efficiently requires highly specialised biological tools. Twogee develops customised enzyme solutions tailored to specific feedstocks and industrial requirements. The company combines enzyme screening, strain development, as well as fermentation and hydrolysis process developments predictive to customer-scales to improve the conversion of agricultural residues and industrial side streams into usable intermediates. According to Twogee, its approach is designed to accelerate process development while enabling more efficient utilisation of diverse lignocellulosic feedstocks. The current development activities focus on solutions enabling second-generation sugars and other bio-based feedstocks for downstream applications in biotechnology and synthetic biology.

Industrial Fit and Applications
Many bio-based industries face the challenge of securing sustainable carbon sources without competing with food production. Twogee addresses this challenge by focusing on agricultural residues such as wheat straw, corn stover, bagasse, and other lignocellulosic side streams. The resulting second-generation feedstocks can support applications in industrial biotechnology, synthetic biology, bio-based chemicals, and advanced materials manufacturing. In addition to technology development, the company is exploring licensing approaches intended to enable local enzyme production and decentralised biomass processing, supporting regional circular value chains and improved resource efficiency.

Founding Team
Twogee Biotech was founded in 2024 by Dr. Frank Wallrapp and Dr. Helge Jochens, who bring more than a decade of experience in industrial biotechnology, enzyme development, and fermentation technologies. Emerging from Munich's biotechnology ecosystem and supported by the BioM MAxL Incubator, the team combines expertise in enzyme engineering, process development, industrial scale-up, and commercial biotechnology.


© Twogee Biotech

Twogee combines enzyme engineering and bioprocess development to unlock value from underutilised biomass streams.


© Twogee Biotech

Agricultural by-products and lignocellulosic residues assessed for conversion into second-generation bio-based feedstocks.


© Twogee Biotech

Twogee Biotech founders Dr. Helge Jochens and Dr. Frank Wallrapp (left to right).

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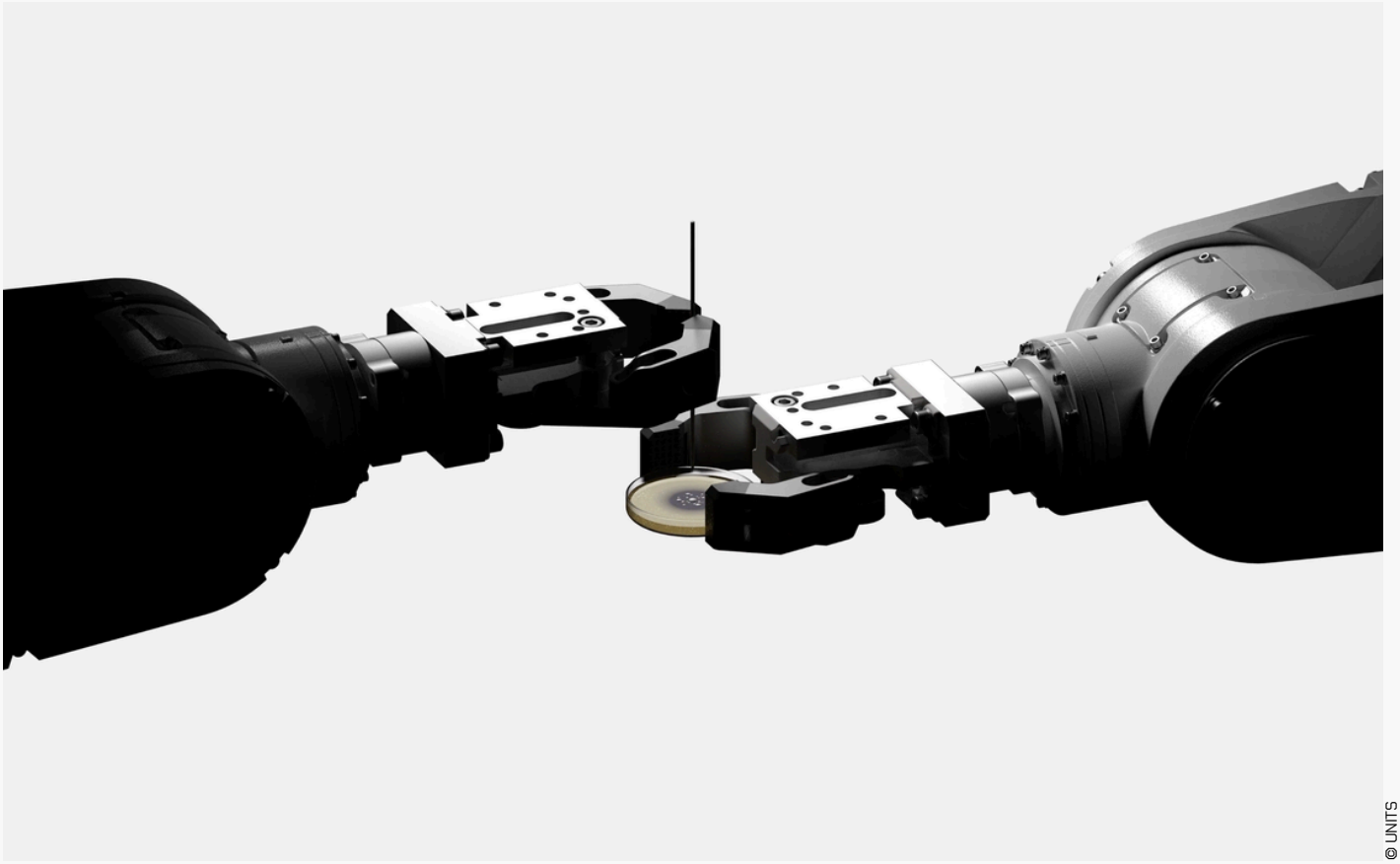
GENERARE BIOSCIENCE

DECODING MICROBIAL
GENOMES TO DISCOVER
NOVEL MOLECULES



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UNLOCKING EVOLUTION-DERIVED CHEMISTRY FOR DRUG DISCOVERY

The history of medicine is filled with discoveries that originated in unexpected places. Antibiotics emerged from soil microbes, while many modern medicines, across several therapeutic areas including oncology, trace their origins to compounds evolved by nature over millions of years. Yet only a small fraction of the molecular diversity encoded across Earth's microbial life has been experimentally explored. Hidden within microbial genomes are countless chemical structures that have never been isolated, analysed, or tested. Paris-based biotech company Generare was founded to decode this Nature-evolved unexplored territory. By combining synthetic biology, genomics, automation, and computational analysis, the company seeks to transform microbial DNA into a source of entirely new molecular discoveries. Its approach centres on revealing molecules that have remained invisible to science until now, bringing unexplored biological chemistry space into reach.

Technology and Product
Every microbial genome can be viewed as a molecular blueprint containing instructions for the production of specialised compounds. Many of these instructions are organised in biosynthetic gene clusters whose products remain unknown because they are never naturally expressed under laboratory conditions. Generare develops technologies that identify these genetic sequences, prioritize them for novelty & biological potential, transfer them into engineered hosts, and experimentally produce and characterise the molecules they encode. The company combines genome mining, synthetic biology, high-throughput screening, analytical chemistry, and machine-learning-supported data analysis to discover previously inaccessible natural products at scale. Each discovery contributes to a growing dataset linking genetic information to molecular function.

Industrial Fit and Applications
For pharmaceutical researchers, finding entirely new chemical starting points remains one of the most difficult challenges in drug discovery. Generare focuses on expanding the accessible chemical universe by uncovering molecules beyond conventional screening collections. The resulting compounds and datasets can support early-stage pharmaceutical research, bioactive compound discovery, and computational drug-development programmes. Beyond pharmaceutical research, novel natural products may also offer future opportunities in biotechnology and agricultural applications where new biological functions are sought.

Founding and Management Team
Generare was founded in 2023 by CEO Guillaume Vandenesch and CSO Dr. Vincent Libis. Vandenesch previously worked in the deep-tech innovation ecosystem, while Libis spent more than a decade developing synthetic biology approaches for natural-product discovery and biosynthetic gene-cluster engineering. His ERC-funded research and academic work form the scientific foundation of the company's technology.


© Generare Bioscience
Automation and high-throughput experimentation support Generare's molecular discovery workflows.


© Generare Bioscience
Genome mining, synthetic biology, and analytical chemistry are used to identify and characterise previously unknown natural products.


© Generare Bioscience
The Generare team with founders Guillaume Vandenesch and Dr. Vincent Libis.

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EVODIABIO

evodia

PRECISION-FERMENTED
AROMAS FOR THE FOOD
AND BEVERAGE INDUSTRY

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RECREATING NATURE'S FLAVOUR MOLECULES THROUGH YEAST BIOTECH

Few ingredients shape the sensory experience of food and beverages as profoundly as aroma. Volatile compounds influence perception long before flavour reaches the palate, defining many of the characteristic notes consumers associate with a product. Many natural aroma molecules, however, remain difficult to source at scale, often requiring large amounts of agricultural raw materials to obtain only small quantities of valuable compounds. At the same time, climate change and resource constraints are placing increasing pressure on traditional supply chains for aromatic crops. Danish biotech company EvodiaBio develops fermentation-based production routes for natural aroma compounds used in food and beverage applications. Founded in 2021, the company applies precision fermentation to reproduce aroma molecules that occur naturally in plants. Its initial focus lies on hop-derived aroma compounds for brewing, particularly for low- and no-alcohol beer, while the underlying technology is designed to support broader flavour and aroma applications across the food industry.

Technology and Product
Aroma molecules such as monoterpenes are responsible for many of the characteristic notes found in hops, citrus fruits, herbs, and other plants. EvodiaBio engineers yeast strains capable of producing selected aroma compounds through precision fermentation, reproducing biosynthetic pathways found in plants and other organisms. According to the company, its patented Yops® technology enables the commercial-scale production of natural monoterpenes without relying on conventional crop cultivation or extraction processes. The resulting aroma ingredients are formulated into flavour blends that can be integrated into existing beverage production workflows. Current commercial products focus on hop-inspired aroma solutions developed for brewing applications.

Industrial Fit and Applications
Brewers increasingly face challenges linked to ingredient availability, product consistency, and consumer demand for flavourful alcohol-free alternatives. EvodiaBio's fermentation-derived aroma ingredients are designed to supplement selected conventionally sourced hop aroma compounds in brewing applications. Since the commercial launch of Yops® in 2025, the ingredients have been adopted by breweries across Europe, North America, and Brazil and, according to EvodiaBio, have contributed to more than 100 commercial brews. Current activities focus on beer production, particularly low- and no-alcohol products.

Founding and Management Team
EvodiaBio was founded by Simon Dusséaux, Victor Forman, Sotirios Kampranis, and Jarne Elleholm. Emerging from research and innovation activities within the Danish biotechnology ecosystem, the founding team combines expertise in synthetic biology, metabolic engineering, fermentation, aroma chemistry, brewing, and business development. Today, CEO Camilla Kloss Fenneberg leads the company's commercial and strategic development.


© EvodiaBio
Industrial fermentation systems enable the scalable production of monoterpene aroma compounds through engineered yeast strains.


© EvodiaBio
Yops® aroma ingredients developed through precision fermentation for hop-inspired flavour profiles in brewing.

© EvodiaBio
EvodiaBio founding and management team.

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AMPHISTAR

AmphiStar
BIOSURFACTANTS

BIOSURFACTANT PLATFORM
FOR CIRCULAR SURFACTANT
INNOVATION

SUSTAINABLE BIOSURFACTANTS FROM WASTE STREAMS

Most people encounter surfactants dozens of times a day without noticing them. They help shampoos foam, detergents clean, paints spread evenly, and cosmetics maintain their texture. Yet many surfactants remain derived from fossil resources or agricultural feedstocks such as palm oil. Belgian biotechnology company AmphiStar is developing biosurfactants produced from waste and side streams through microbial fermentation processes. Originating as a spin-off of Ghent University and the Bio Base Europe Pilot Plant, the company focuses on transforming local bio-based waste streams into high-performance glycolipid biosurfactants. Its technology combines industrial biotechnology, fermentation, synthetic biology, and process engineering with the goal of expanding the availability of scalable alternatives to conventional surfactants across consumer and industrial markets.

Technology and Product
Instead of starting with virgin vegetable oils or refined sugar feedstocks, AmphiStar uses materials traditionally considered waste. The company has developed AmphiNova®, a proprietary technology through which it reports having designed more than 80 bio-based surfactants produced via fermentation from agri-food side and waste streams. Its portfolio focuses on second-generation sophorolipids developed using proprietary strain development, fermentation, and purification technologies. According to AmphiStar, the technology supports the production of sophorolipid biosurfactants with different molecular structures and functional properties tailored to formulation requirements. It combines strain engineering, precision fermentation, downstream processing, and scale-up to transform waste-derived feedstocks into surfactant ingredients.

Industrial Fit and Applications
Surfactants are used across a wide range of industrial formulations, from household cleaners and personal care products to textiles and agrochemicals. AmphiStar develops biosurfactants for applications including shampoos, skincare products, detergents, dishwashing liquids, and industrial cleaners. Its AmphiCare® and AmphiClean® product lines currently focus on personal and home care, while selected AmphiNova® molecules are being developed for industrial, institutional, and agrochemical applications. Through partnerships with formulation specialists, distributors, and manufacturers, the company aims to support broader adoption of waste-based biosurfactants as alternatives to conventional surfactant systems.

Founding and Management Team
The company was founded by Dr. Sophie Roelants, Ir. Bernd Everaert, Ir. Karolien Maes, Dr. Sofie De Maeseneire, and Prof. Wim Soetaert and emerged from research and expertise developed at Ghent University and the Bio Base Europe Pilot Plant. Since joining as CEO in 2024, Pierre-Franck Valentin has led AmphiStar's industrialisation and expansion efforts.


© Fille Roelants

From feedstock selection to process optimisation, AmphiStar develops microbial production routes for glycolipid surfactants.

© AmphiStar

AmphiClean® ingredients have been evaluated in household cleaning formulations, including a limited-edition Ecover product.


© Fille Roelants

The AmphiStar team with CEO Pierre-Franck Valentin (front row, second from right)

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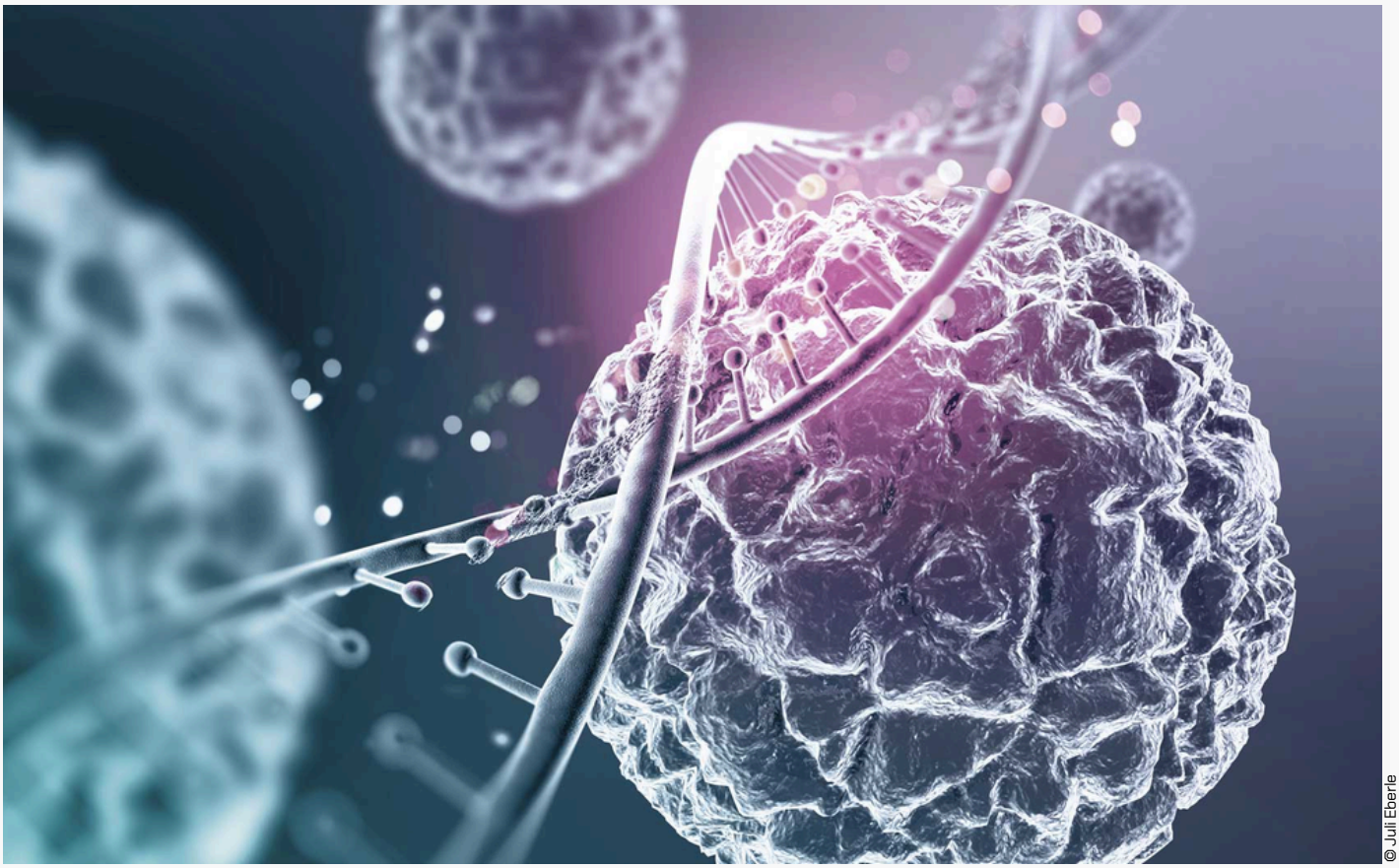
FUSIX BIOTECH

ENGINEERED VIRAL PLATFORMS DESIGNED TO TRIGGER ANTI-TUMOUR IMMUNE RESPONSES



© Juli Eberle

FUSOGENIC ONCOLYTIC VIRUSES FOR CANCER IMMUNOTHERAPY

Viruses are typically viewed as agents of disease. In cancer research, however, certain viruses are being re-engineered as therapeutic tools capable of selectively targeting tumour cells while activating immune responses against cancer. This field, known as oncolytic virotherapy, continues to attract significant research and industry interest as researchers search for new ways to address tumours that remain difficult to treat with existing immunotherapies. Munich-based biotechnology company Fusix Biotech develops engineered oncolytic virus platforms designed to combine direct tumour destruction with immune activation. Emerging from research at the Technical University of Munich and TUM University Hospital Klinikum rechts der Isar, the company focuses on fusion-enhanced viral immunotherapies intended to attack solid tumours through multiple biological mechanisms.

Technology and Product
Instead of relying solely on immune checkpoint modulation or targeted drug approaches, Fusix Biotech engineers viruses designed to directly infect and destroy tumour cells. Its proprietary InFUSE™ platform is based on fusion-enhanced oncolytic viruses that trigger cell-cell fusion between infected and neighbouring tumour cells. According to the company, this process can induce tumour cell lysis, local release of therapeutic payloads, inflammatory signalling, and activation of anti-tumour immune responses. The platform combines viral engineering, immuno-oncology, and vector development technologies. Fusix's lead candidate, FUSE102, is being developed for advanced hepatocellular carcinoma.

Industrial Fit and Applications
Many solid tumours remain difficult to treat because they suppress or evade immune responses within the tumour microenvironment. Fusix positions its fusion-enhanced viral platform for oncology applications where enhanced immune activation and tumour targeting may be beneficial. The company's technology is being developed for systemic intravenous administration and potential combination with existing immunotherapy approaches. Current activities focus on preclinical development, translational research, and preparation for clinical evaluation in liver cancer.

Founding and Management Team
Fusix Biotech was founded in 2022 by Dr. Jennifer Altomonte, Dr. Teresa Krabbe, Prof. Markus Gerhard, and Dr. Marian Wiegand as a spin-out from the Technical University of Munich and TUM University Hospital Klinikum rechts der Isar. The founding team combines expertise in molecular biology, virology, immunology, oncology, viral vector development, and translational cancer research. CEO Dr. Jennifer Altomonte is the inventor of the company's InFUSE™ platform and has more than two decades of experience in viral engineering and oncolytic virus research.


© Juli Eberle
Sample preparation and testing activities for next-generation cancer immunotherapies.


© Juli Eberle
Fusix's InFUSE™ platform is being developed to harness fusion-enhanced oncolytic viruses for cancer treatment.


© Juli Eberle
Fusix founders Marian Wiegand, Jennifer Altomonte, Markus Gerhard, and Teresa Krabbe (left to right).

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WOAMY

CELLULOSE BIOFOAMS FOR
CIRCULAR PACKAGING AND
MATERIAL APPLICATIONS

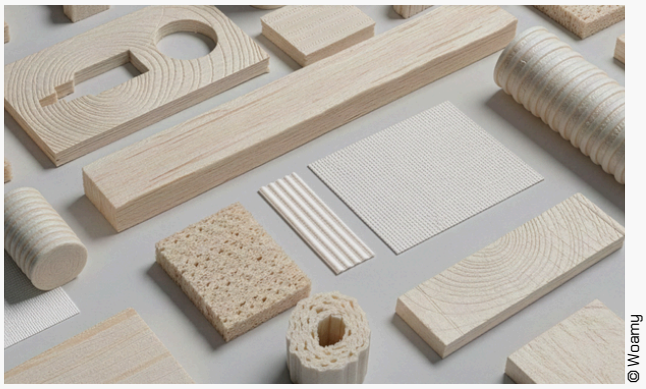
ENGINEERING FOAM BEYOND FOSSIL PLASTICS

For decades, lightweight foams have quietly protected products as they move through global supply chains. From consumer electronics and furniture to industrial equipment, foam materials play an important role in packaging, transport, and product protection. Yet many of these materials are still produced from fossil resources and often remain difficult to recycle at scale once they reach end of life. As industries seek more circular material solutions, attention is increasingly turning to bio-based alternatives capable of combining performance with resource efficiency. The Finnish company Woamy develops cellulose-based biofoams designed as substitutes for conventional plastic foams. Originating from the FoamWood research project at Aalto University, the company builds on more than a decade of materials research focused on lightweight fibre structures. Its technology is intended to provide recyclable, biodegradable, and plastic-free foam materials for packaging and material protection applications.

Technology and Product
Nature has already solved many of the challenges engineers face when designing lightweight and resilient structures. Inspired by the directional architecture of wood, Woamy developed a cellulose-based biofoam designed to combine low weight with mechanical performance. The material consists of renewable cellulose fibres arranged in elongated foam structures that mimic certain structural characteristics found in natural wood. The technology is produced through a mould-free, fast-drying process that reportedly avoids chemical additives, extreme pressures, and high temperatures while supporting recyclable and biodegradable material solutions at competitive cost.

Industrial Fit and Applications
Few industrial materials are as widely used yet as rarely noticed as protective foams. From consumer electronics and luxury goods to furniture and e-commerce packaging, foam materials play a critical role in transport protection and product handling. Woamy positions its cellulose biofoam as an alternative for packaging converters and manufacturers seeking plastic-free cushioning materials that integrate into existing packaging workflows. Current applications include protective inserts, flexible cushioning materials, surface protection solutions, and transport packaging designed as sustainable alternatives to a wide range of fossil-based foam materials, including polystyrene and polyurethane.

Founding Team
Woamy was co-founded by CEO Susanna Partanen based on technology originating from the FoamWood research project at Aalto University. Building on more than a decade of research into cellulose-based foam structures, the team combines expertise in materials science, engineering, design, and commercialisation. The team focuses on translating laboratory-developed biofoam technologies into scalable alternatives to conventional plastic foams.


© Woamy
Woamy's cellulose-based biofoam can be formed into a variety of shapes and protective packaging components.


© Júli Moon
Biofoam packaging insert designed to protect fragile products during transport and handling.


© Woamy
Woamy team with founder and CEO Susanna Partanen (second from the left).

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SAVEGGY

EDIBLE PROTECTION FOR FRESH PRODUCE AND PLASTIC FREE PACKAGING

REDUCING FOOD WASTE THROUGH PLANT BASED PROTECTION

Fresh fruits and vegetables often begin losing quality immediately after harvest. Moisture loss, oxidation, and handling during transport contribute to shortened shelf life and substantial waste across supply chains. Conventional plastic packaging can slow deterioration, yet increasing regulatory pressure and sustainability targets are driving interest in alternative solutions. The Swedish startup Saveggy develops edible plant based protection technologies intended to maintain produce quality while reducing dependence on plastic packaging. Inspired by natural protective mechanisms found in plants, the company specialises in extending freshness of fruits and vegetables through minimal ingredient formulations designed for integration into existing distribution systems. Saveggy aims to address two persistent challenges simultaneously: post harvest food waste and plastic consumption in fresh produce markets.

Technology and Product
Saveggy develops an edible protection made from rapeseed oil and gluten-free oat oil, without additives or allergens. The platform-based formulation combines a core recipe with crop-specific adaptations designed to match the biological and physiological characteristics of different produce varieties. Applied to fresh produce, the protection forms a thin barrier intended to reduce moisture loss and slow oxidation processes associated with post-harvest quality decline. According to the company, the technology integrates into existing distribution flows, with application equipment installed at the packing stage. Initial validation has focused on cucumbers, while development is underway for bananas, peppers, eggplants, and zucchini.

Industrial Fit and Applications
The company positions its technology for growers, packers, retailers, and food distribution systems seeking to reduce post harvest losses while limiting plastic packaging. Initial deployment focuses on cucumbers, a product commonly wrapped in plastic to preserve freshness, though broader applications across fruits and vegetables are under development. Wider adoption of edible protection systems could support reduced food waste, improved resource efficiency, and lower packaging demand throughout fresh produce supply chains. Actual impact remains dependent on crop type, logistics conditions, and implementation scale.

Founding Team
Saveggy was founded in 2020 by Arash Fayyazi and Vahid Sohrabpour. Both co founders previously worked in the packaging industry and bring backgrounds in applied physics, logistics, and processing. Their collaboration began around addressing food waste and plastic pollution through alternatives to conventional produce packaging. This experience forms the basis of Saveggy's focus on plant based post harvest protection technologies.


© Saveggy AB
Plant based edible protection layers designed to support freshness of harvested produce.


© Saveggy AB
Saveggy is exploring protection technologies for peppers and additional fresh produce categories.


© Saveggy AB
Saveggy founders Arash Fayyazi and Vahid Sohrabpour (left to right).

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NOVOBIOM

novobiom

A FUNGAL BIOREFINERY FOR
CIRCULAR INDUSTRIES

© Novobiom

USING THE POWER OF FUNGI TO TURN WASTE INTO PRODUCTS

Beneath forests, soils, and decaying organic matter, fungi perform some of nature's most complex recycling functions. Their ability to break down persistent compounds, transform biomass, and interact with ecosystems has attracted growing interest from environmental and industrial biotechnology. The Belgian company Novobiom builds its fungal biorefinery platform around these biological capabilities, combining applied mycology, fermentation technologies, and computational tools to address challenges linked to waste management, soil restoration, and circular production systems. Originating from a biomimicry-driven approach, the company operates a fungal biorefinery — one platform of proprietary strains, fermentation, and digital modelling — that transforms contaminated materials and industrial waste streams into usable resources. Its biorefinery runs three output streams on one fungal backbone: bioremediation of contaminated soils, conversion of textile waste into recycled polyester, and production of biosurfactants and biomolecules.

Technology and Product
Instead of treating fungi solely as production organisms, Novobiom uses them as biological transformation systems. The company develops proprietary fungal strains, large-scale solid-state fermentation technologies, and AI-supported modelling tools designed to convert waste streams into higher-value products while supporting environmental remediation. Current activities include textile waste conversion processes that generate feedstocks for bioproduction and technologies for the treatment of contaminated soils, sludges, and water. Novobiom combines fungal cultivation, digital modelling, and process engineering to optimise performance across diverse feedstocks and operating conditions.

Industrial Fit and Applications
Many biological waste streams and contaminated materials remain difficult and costly to manage using conventional treatment approaches. Novobiom addresses these challenges through a technology framework that combines proprietary fungal strains, genome-scale modelling, and solid-state fermentation. Current applications focus on the bioremediation of contaminated sites and the conversion of low-value waste streams into higher-value products. According to the company, a shared foundation of strains, computational models, and fermentation technologies enables multiple application areas to be addressed through a common biological infrastructure.

Founding Team
The company was founded by Jean-Michel Scheuren (CEO) and Dr. Caroline Zaoui (CSO). Scheuren is a business engineer with an additional degree in environmental science and management, whose background spans environmental management, innovation, and biotechnology. Zaoui is a microbiologist and former Marie Skłodowska-Curie fellow with a PhD from Hannover Medical School. Their expertise forms the foundation of Novobiom's fungal biotechnology platform.


© Novobiom
Mycelial networks capable of breaking down complex organic materials and supporting resource recovery processes.


© Deeptech Insider
Mixed textile waste streams targeted for conversion through fungal bioprocessing.


© Novobiom
Novobiom founders Jean-Michel Scheuren and Dr. Caroline Zaoui.

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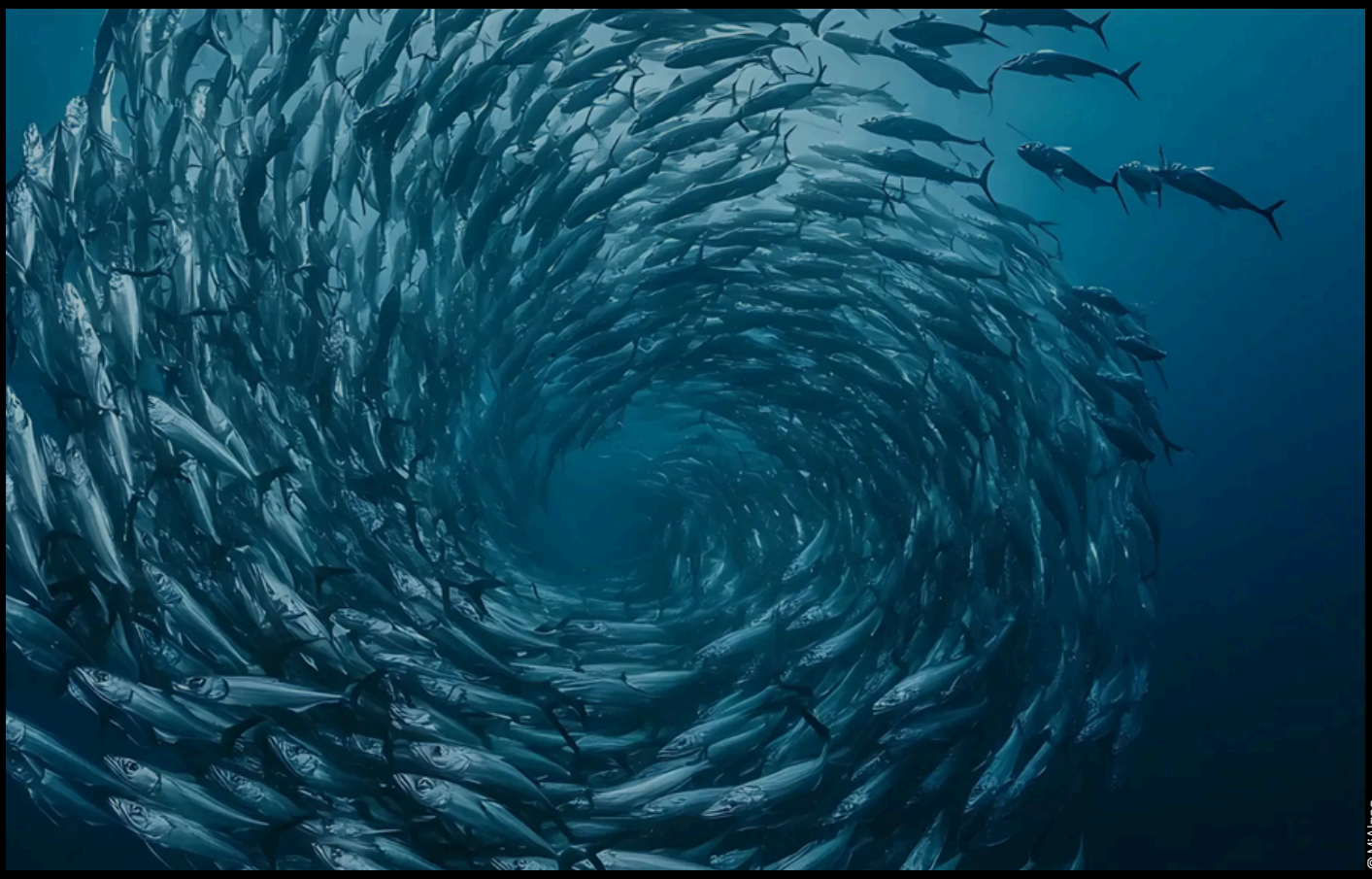
MIALGAE

OMEGA-3 MICROALGAE
FROM WHISKY INDUSTRY
BY-PRODUCTS



CIRCULAR BIOTECHNOLOGY FOR PET NUTRITION AND AQUACULTURE

Every year, millions of tonnes of fish are harvested not for direct human consumption, but to supply fish oil and fishmeal used in aquaculture and animal nutrition. At the same time, food and beverage industries generate nutrient-rich by-products that often remain underutilised. Scottish biotechnology company MiAlgae connects these two challenges through a circular production platform that converts whisky industry by-products into omega-3-rich microalgae. Founded in 2016, the company develops fermentation-based processes designed to produce marine omega-3 ingredients without relying on wild-caught fish. By combining industrial biotechnology, fermentation, and circular economy principles, MiAlgae aims to create alternative sources of omega-3 for aquaculture and pet food applications while reducing pressure on marine ecosystems.

Technology and Product
Rather than extracting omega-3 from marine fish, MiAlgae cultivates microalgae using nutrient-rich by-products from whisky production. According to the company, these co-products serve as feedstock for a proprietary fermentation platform in which microalgae are grown in industrial bioreactors before being harvested and dried into omega-3-rich ingredients. The technology combines fermentation, algae cultivation, and bioprocess engineering to produce DHA-rich biomass intended for animal nutrition applications. 'MiAlgae's product portfolio includes MiAlgaePet and MiAlgaeFish, ingredients developed for pet food and aquaculture feed manufacturers seeking fish-free sources of marine omega-3.

Industrial Fit and Applications
Omega-3 fatty acids are widely used in aquaculture, pet nutrition, and feed formulations, but conventional supply chains remain heavily dependent on marine resources. MiAlgae positions its technology as a circular alternative by producing omega-3-rich microalgae from distillery by-products. Current commercial focus areas include pet food and aquaculture feed ingredients, where DHA is used as a key nutritional ingredient. Through industrial-scale fermentation facilities and partnerships across the feed value chain, the company aims to expand the availability of fish-free omega-3 ingredients while reducing reliance on wild fish stocks.

Founding Team
MiAlgae was founded in 2016 by Douglas Martin (CEO) while studying Synthetic Biology and Biotechnology at the University of Edinburgh. Martin co-developed the company's proprietary omega-3 production platform together with Technical Director Dr. Shreekanth Ramananthan and Technical Consultant Julian Pietrzyk. Today, the management team combines expertise in biotechnology, bioprocess engineering, manufacturing and commercialisation.

'MiAlgae uses bioreactors to produce omega-3 rich microalgae ingredients from distillery by-products.

Process development and optimisation of microalgae cultivation systems for omega-3 production.

MiAlgae founder and CEO Douglas Martin.

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OCTARINE BIO

COLOUR PRODUCTION THROUGH
SYNTHETIC BIOLOGY AND PRECISION
FERMENTATION

© Octarine Bio

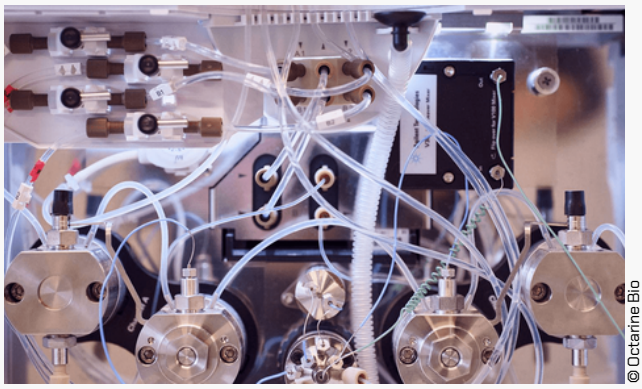
BIO BASED PIGMENTS AND ENZYME TECHNOLOGIES FOR INDUSTRY

Colour is embedded in nearly every industrial sector, from textiles and packaging to cosmetics, plastics, and food. Conventional pigment production often relies on petrochemical feedstocks and processes associated with significant environmental burdens, including energy use, emissions, and chemical waste. As industries explore alternative manufacturing pathways, biological production methods are attracting increasing attention. Danish company Octarine Bio develops synthetic biology platforms designed to produce bio based pigments and functional ingredients through precision fermentation and enzyme engineering. The company focuses on technologies intended to support more sustainable production systems while maintaining industrial performance requirements across multiple applications.

Technology and Product
Octarine Bio develops engineered microbial systems and precision fermentation processes designed to produce bio based pigments and other functional ingredients. Its PurePalette™ platform focuses on colourants intended for applications including textiles, packaging, plastics, coatings, and personal care products. The company combines cell factory engineering with proprietary enzyme technologies aimed at improving properties such as stability, performance, and manufacturability. According to Octarine, these technologies enable pigment production through fermentation pathways using renewable feedstocks while supporting compatibility with existing industrial processes and large scale manufacturing environments.

Industrial Fit and Applications
Industries using conventional dyes and pigments face growing pressure linked to emissions, toxicity, fossil feedstocks, and supply chain resilience. Octarine positions its technologies as alternatives for sectors requiring high performance colourants without fundamental changes to manufacturing infrastructure. Potential applications extend beyond textiles toward food, cosmetics, packaging, printing, and engineered materials. Improved access to scalable bio based pigments could support broader adoption of biological manufacturing approaches across industrial value chains. Actual environmental impact depends on deployment conditions and specific applications.

Founding Team
Octarine Bio was founded by CEO Dr. Nethaji Gallage and CSO Dr. Nick Milne. Their backgrounds combine synthetic biology, metabolic engineering, fermentation science, and commercialisation of bio based technologies. Prior work includes engineering microorganisms for production of bio based compounds and scaling fermentation processes toward industrial applications.


© Octarine Bio
Precision fermentation and enzyme engineering systems designed for production of bio based pigments and functional ingredients.


© Octarine Bio
Fermentation derived pigments intended for textiles, packaging, cosmetics, and other industries.


© Octarine Bio
Octarine Bio founders Dr. Nick Milne and Dr. Nethaji Gallage (left to right).

Octarine Bio ApS
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MULTUS

MULTUS

CELL-SPECIFIC CULTURE MEDIA
FOR BIOMANUFACTURING
INDUSTRIES

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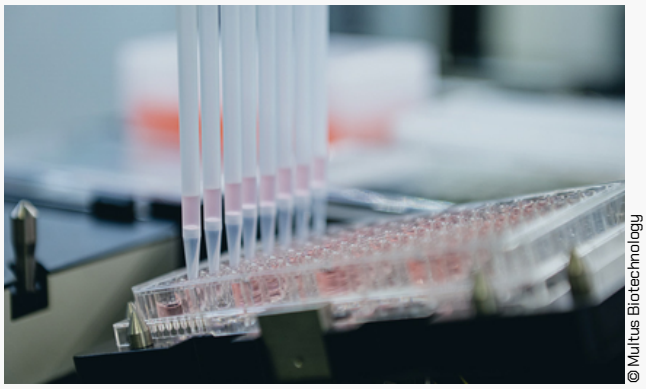
BUILDING CELL CULTURE INFRASTRUCTURE FOR BIOINDUSTRIES

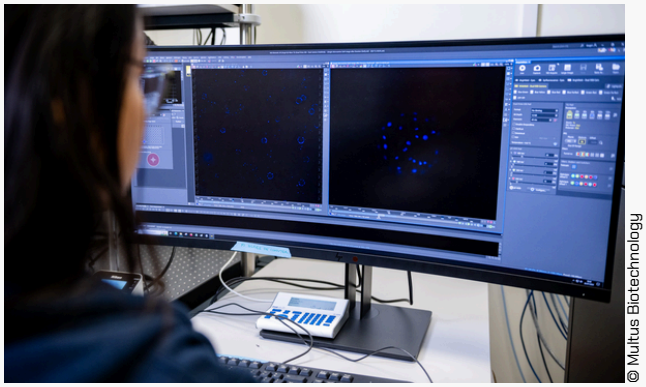
Biological manufacturing is increasingly attracting attention as industries explore alternatives to conventional production methods for food, ingredients, materials, and other products. Yet scaling living systems from laboratory environments to reliable industrial processes remains technically demanding. Cell growth conditions, media composition, and manufacturing costs continue to influence whether promising concepts become commercially viable products. UK Company Multus Biotechnology develops technologies intended to address part of this challenge by combining AI, high-throughput robotic automation and cell biology to design custom media for biomanufacturing across medicine, materials, and food. The company focuses on enabling more scalable development pathways for both established and emerging biomanufacturing sectors by supporting the production environments required for cells to grow efficiently.

Technology and Services
Multus develops cell-specific culture media for a range of biomanufacturing applications spanning advanced therapies, biologics, cultivated foods, and novel materials. The company's MediOP™ platform combines AI, high-throughput robotic automation, and cell biology. According to Multus, this approach has enabled the creation of a large and rapidly growing structured dataset on cell culture media performance. The resulting data supports proprietary AI models designed to develop cell-specific formulations intended to improve yield, quality, and consistency across different applications. Multus offers media customisation services tailored to customers' development stages, timelines, and commercial objectives.

Industrial Fit and Applications
The company positions its technologies as enabling infrastructure for organizations developing biologics, cell and gene therapies, cultivated foods and other products produced through cell culture systems. Founded with roots in cellular agriculture, the company's platform serves a broad range of industries where scalable, optimized media remains a critical and underserved need. Improved media performance and fit-for-purpose formulations are intended to address barriers that continue to limit commercialization across these sectors.

Founding Team
Multus Biotechnology was established in 2020 by members of Imperial College London's synthetic biology community. Co-founder and CEO Cai Linton and Co-founder and CTO Kevin Pan played key roles in building the company, combining expertise in cell biology, bioengineering, and software development to create the foundation of what became the MediOP™ platform. Since its establishment in 2020, the company has expanded operations and raised funding to develop technologies intended to support scalable biomanufacturing and cellular agriculture.


© Multus Biotechnology
MediOP™ combines AI, robotic automation, and cell biology to develop tailored cell culture media formulations.


© Multus Biotechnology
The platform uses large scale media performance datasets to support predictive optimisation across cell types and applications.


© Multus Biotechnology
Multus co-founders Cai Linton and Kevin Pan.

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CELLEVATE

3D CELL CULTURE PLATFORMS FOR
VIRAL VACCINES, VIRAL VECTORS
AND CELL-BASED THERAPIES

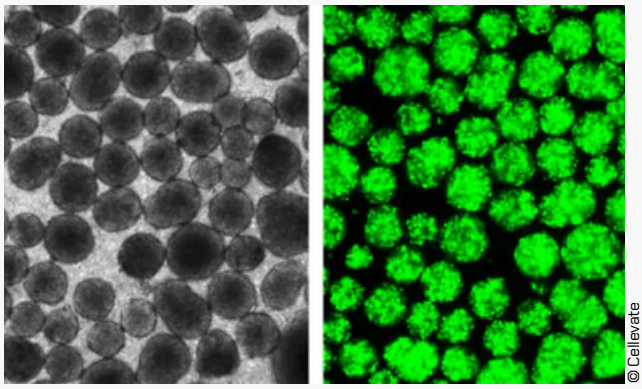
NANOFIBER CELL CULTURE PLATFORMS FOR ADVANCED BIOPROCESSING

Biopharmaceutical manufacturing increasingly depends on cell culture systems capable of supporting higher yields, scalable production, and consistent process performance. Conventional two-dimensional culture environments can limit cell growth and productivity, particularly in applications such as manufacturing of viral vaccines, viral vectors and cell-based therapies. The Swedish biotech company Cellevate develops nanofiber-based cell culture products designed to address these challenges through 3D cell culture structures for scalable expansion of adherent cells. The company focuses on technologies intended to improve productivity, scalability, and process integration across biomanufacturing workflows ranging from pre-clinical to commercial production.

Technology and Product
Cellevate develops nanofiber-based cell culture products built on its proprietary Cellevat3d® platform. The technology uses cellulose-based nanofibers designed to promote the formation of three-dimensional cell structures and support cell growth in bioreactors. According to the company, the platform has demonstrated significantly increased viral yields in selected Vero and HEK293-based processes compared with conventional processes, while supporting improved scalability and process consistency. Initial products focus on viral vaccine production, lentiviral vectors, and other upstream bioprocessing applications. Cellevate positions the technology as an integrated solution for stirred tank bioreactors spanning small-scale through large-scale commercial manufacturing processes.

Industrial Fit and Applications
The company targets applications such as manufacturing of viral vaccines, viral vectors , and expansion of various kinds of cells. Nanofiber-based products are designed for use in stirred tank bioreactors and can integrate well into existing upstream bioprocessing workflows. Cellevate reports collaborations with biopharmaceutical companies and CDMOs to evaluate performance in production relevant settings. Wider adoption of three-dimensional cell culture platforms could support efforts to improve manufacturing productivity, process economics, and scalability across advanced biotherapeutic production systems.

Founding and Management Team
Cellevate was co-founded by Maximilian Ottosson, Albin Jakobsson, and Professor Lars Montelius based on nanofiber research from Lund University and NanoLund. Today, the company is led by CEO Karsten Fjärstedt together with CTO Dr. Christel Fenge, COO Dr. Linda Dexlin Mellby, and CFO Déspina Georgiadou Hedin. Their backgrounds span bioprocessing, biopharmaceutical manufacturing, diagnostics, and commercialisation of life science technologies.


© Cellevate
Cellevat3d® nanofiber platforms aim to support dense cell spheroid formation for viral vector and vaccine production.


© Cellevate
Laboratory evaluation of 3D cell culture technologies for advanced bioprocessing workflows.


© Cellevate
Cellevate management team: Karsten Fjärstedt, Linda Dexlin Mellby, Déspina Georgiadou Hedin, and Christel Fenge (left to right).

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EPOCH BIODESIGN

AI DESIGNED RECYCLING TECHNOLOGIES FOR MATERIAL CIRCULARITY

© Epoch Biodesign

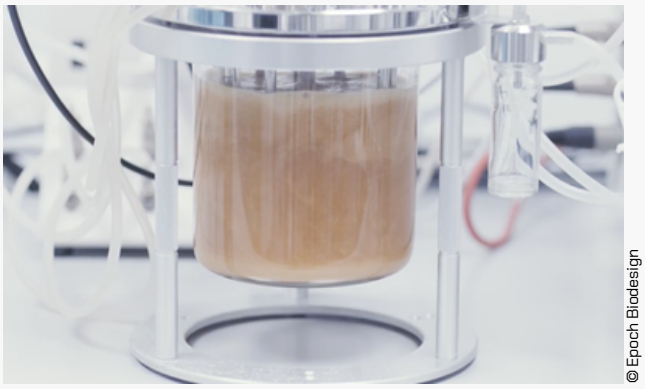
ENGINEERING ENZYMES FOR CIRCULAR PLASTICS AND TEXTILES

Modern materials such as textiles, engineered plastics, and composites often outperform natural alternatives in durability and cost, yet many remain difficult to recycle once products reach end of life. Mixed fibres, coatings, and complex formulations frequently limit conventional recycling pathways, contributing to landfill accumulation and continued demand for virgin fossil feedstocks. UK company Epoch Biodesign develops technologies intended to address this challenge through engineered enzymes capable of breaking down waste materials at the molecular level. Combining synthetic biology, AI, and process engineering, the company focuses on transforming complex plastic and textile waste into reusable chemical building blocks. Epoch aims to support circular manufacturing systems across industries including apparel, automotive, and materials.

Technology and Product
Epoch Biodesign develops enzyme engineering technologies designed to break down plastics and textiles into reusable molecular components. Its platform combines generative AI, physics based protein modelling, synthetic biology, and automated laboratory screening to identify enzyme variants with targeted degradation properties. According to the company, engineered enzymes can depolymerise complex waste streams into high purity monomers intended for reintroduction into manufacturing processes. Initial focus areas include nylon and synthetic textile waste. The platform is designed to accelerate enzyme discovery while supporting industrial recycling pathways for materials that remain difficult to process using conventional methods.

Industrial Fit and Applications
Many industrial sectors rely on materials that currently lack economically viable end of life solutions. Epoch positions its technology for applications spanning apparel, automotive components, industrial textiles, and engineered plastics. By targeting mixed and difficult to recycle waste streams, the company aims to enable circular production models in which materials re-enter manufacturing processes as feedstocks. If deployed at scale, enzymatic recycling technologies could support more circular manufacturing systems by reducing reliance on virgin petrochemical inputs and improving resource efficiency.

Founding Team
Epoch Biodesign was founded by CEO Jacob Nathan, who began exploring biological approaches to plastic degradation through an independent school research project. Building on this early work, he established the company to develop enzyme-based recycling technologies for difficult-to-recycle plastics. Today, Epoch combines expertise in synthetic biology, enzyme engineering, machine learning, and industrial bioprocess development to advance biological recycling solutions.


© Epoch Biodesign
Bioreactor systems supporting development of enzymatic recycling processes.


© Epoch Biodesign
Automated high throughput screening of enzyme variants at Epoch Biodesign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Epoch Biodesign management team, including founder and CEO Jacob Nathan (sixth from left)

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