



## **FACT SHEET**

### **The Company**

EMBION™ Technologies S.A. is a hard-tech, disruptive spin-off of the EPFL and provides access to next-generation nutrition innovation through a novel platform technology. The patented ionic catalyst approach is based on the principle of bold simplicity – EMBION empowers a scalable and affordable method to meet the globally growing demand for high functionality plant-based nutrition.

EMBION, “The Life Cycle Company,” supports the global transition to a circular bioeconomy. Through its proprietary rapid-prototyping platform, the company enables the upcycling of industrial biomass side-streams into bioactives for human and animal health and nutrition.

EMBION’s mission is to catalyze the world’s transition to zero waste. Three scientists in Chemical Engineering from the Swiss Federal Institute of Technology in Lausanne (EPFL) and Zurich (ETHZ) co-founded EMBION Technologies S.A. in 2016. Georgios Savoglidis, Sviatlana Siankevich and Georgios Fengos met while studying at the University of Patras in Greece, where they shared a common vision of a completely new approach to building the bioeconomy and to create a world where life and nature are in sync. EMBION idealizes the world’s state of perfection whereby nature and human thrive together.

The Swiss startup is based in and expanding its operations in Lausanne, Switzerland’s internationally renowned high-tech hub for fundamental and applied research in natural sciences and engineering.

### **The EMBION™ platform technology**

EMBION catalyzes the future of nutrition by introducing a portfolio of sophisticated, complex EMBION-BIOACTIVES with expanded prebiotic properties. EMBION developed a way to extract and formulate bioactive oligomers efficiently, so that these nutrients have very targeted functionality when introduced in foods, beverages and beyond.

EMBION’s rapid-prototyping platform, based on its patented processing and catalyst technologies, is built to both innovate and replicate rapidly and consistently across many sectors. The platform technology accelerates nutrition innovation and production in a way that is affordable, higher in functionality, traceable, reusable, and safe. Its use minimizes research and development costs and reduces the time from discovery to commercial production by 80%, essentially reducing the typical 5-year development time to 1 year.

With its breakthrough processes for upcycling biomass into value-added products in food, feed, chemicals, materials, and energy, the company aims to develop market opportunities in the trillions of US dollars. Prebiotic ingredients for microbiome modulation are among the many high potential innovations from EMBION’s extensive research and development campaigns. This young market, currently valued at approximately \$1 billion, has seen doubling of sales and growth of more than 120% in the last three consecutive years.

### **PREMBION™ - first patented solution for a high-potential market**

The platform technology was first applied in the development of novel bioactives for microbiome nutrition, resulting in the patented solution, PREMBION. Technological stability and high-impact delivery of functional benefits guarantee the applicability and replicability of PREMBION's transversal potential to unlimited fields of sector demand. PREMBION is a nature-based, GMO-free hydrolysate, a source of active nutrients extracted from the brewers' spent grains. The complex prebiotics that Embion extracts under the PREMBION umbrella brand are solutions to improving health outcomes for animals via manipulation of the microbiome, to result in, for example, balanced growth. Third-party in vivo and in vitro trials have shown that PREMBION selectively promotes key beneficial microbes of the *Bifidobacterium* and *Lactobacillus* genera. The product comes in the form of fully soluble, heat and pH stable powder for being used in beverages, feed, and food processes. PREMBION's production uses EMBION's proprietary, new class of food-compatible catalysts that are fully recovered from the process and leave no trace in the final food or feed products.

The market for prebiotics has been characterized by a handful of ingredients and a few producers for the last 20 years. Prebiotics are functional fiber derivatives, no longer known only for "regularity". With the discovery of new prebiotics, consumer demand is increasing.

### **Catalyzing the future of nutrition towards a circular bioeconomy**

Prebiotics occur naturally in the non-edible parts of almost all fruits and vegetables, including the shells of grains and legumes, the skin of fruits, and the stems of plants. These byproducts of traditional food processing contain the highest proportion of bioactive molecules. To address climate change and global population growth, the concept of a circular bioeconomy built on top of these streams with such nutritional potential is becoming more and more important for the food cycle targeting to create a 100% clean and protective nutrition from farm to fork.

By providing a platform technology that empowers industries and businesses to innovate responsibly, EMBION rebuilds nutrition and nature for endless applications. The patented product portfolio can be used for a variety of applications throughout the entire food and feed cycle and can be implemented in non-nutrition sectors. These plant-derived products enable the conversion of food side streams to high performance bioactives for human nutrition, personal care, and animal feed. These processes help reduce the human carbon footprint by decreasing the amount of greenhouse gas emission released in the atmosphere by up to 80%, while creating nutritional ingredients that feed back to the food cycle without additional land utilization, irrigation, and energy.

### **Our investors and funding**

EMBION commercializes a technology originating from the Laboratory of Organometallic and Medicinal Chemistry (LCOM) of the Institute of Chemical Sciences and Engineering of the Swiss Federal Institute of Technology in Lausanne (EPFL). The invention, the result of ten years of research, was a part of a CHF 18 million priority funded project by the Swiss National Science Foundation (SNSF NRP66) to develop new technologies for the valorization of biomass, with specific emphasis on wood.

To date, EMBION has received 7 million Swiss Francs in funding, including 4.5 million Swiss Francs in a Series A equity round in November 2021. The global brewer ASAHI Group was a lead investor joined by existing and additional private investors.

Since the founding of the company in 2016, EMBION has received support and funding from Innosuisse, Innovaud and the FIT Foundation, EIT Climate-KIC, Office for Economic Affairs and Innovation Canton Vaud (SPEI Vaud), and EIT Food and Mass Challenge, among others.

EMBION is a member of the Sustainable Chemistry Society (SusChem) Switzerland, CleanTech Alps Switzerland and the Swissnex global network.

### **The founders**

**Georgios Savoglidis - Cofounder and CEO** combines more than ten years of technology experience in biotech and chemical engineering in the bio-renewables sector with more than ten years of business

experience in various operational and customer-facing activities within his family-owned printing business. He simultaneously finished his studies in Chemical Engineering, obtaining his PhD in 2010. In 2011, he began working as an associate research scientist in EPFL in the Laboratory of Computational Systems Biotechnology ([LCSB](#)) at EPFL. In 2016, Georgios co-founded EMBION Technologies. He holds a PhD, MSc, and Diploma in Chemical Engineering from the University of Patras in Greece. Georgios is a co-inventor of EMBION patents.

**Sviatlana Siankevich - Cofounder and CTO** brings more than ten years of technological expertise in biomass valorization, having experience with technologies ranging from enzymes and fermentation to chemical synthesis and catalytic fractionation. She has a strong academic track record and is an inventor/co-inventor on four patents and patent applications. She has a diploma in ecology from the International Sakharov Environmental Institute in Minsk, Belarus, a MSc in chemical engineering from University of Patras in Greece, and a PhD in Chemistry from EPFL in Switzerland.

**Georgios Fengos – Cofounder and Engineering & Operations Manager** has a track record in research specializing in computational biology and biotechnology. He has more than ten years of working experience and expertise in the mathematics, quantitative modelling, analysis of complex biological and biotechnological systems, reaction engineering, and process optimization. Georgios holds a diploma in chemical engineering from the University of Patras in Greece, and a PhD in systems biology from ETHZ in Switzerland.

## **Board and Advisors**

Embion's activities are supported by renowned board members and a board of advisors who have academic and commercial track records in leadership roles at EPFL, DuPont/Danisco, Novartis Animal Health (now Elanco Animal Health) and Nestlé.

## **Team of experts**

In less than five years, the company has grown from the founding team to a company with an international team of chemical engineers, chemists, food technologists and business experts and is quickly expanding.

## **Boilerplate**

Embion Technologies S.A. is a Swiss-based disruptive, industrial biotechnology and green chemistry innovator in plant and microbial bioactives from biomass, providing access to next-generation nutritional products through its proprietary platform technology. The company specializes in the extraction and formulation of highly functional nutrients for human and animal health. The novel technology approach accelerates the development of functional nutrition while significantly reducing cost and time-to-market. With this invention, Embion catalyzes the future of nutrition towards a bioeconomy.

## **Media Contact**

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