

Longevity Labs⁺

www.spermidinelife.us



Company profile

Longevity Labs+



Longevity Labs+, believes in making high quality products inspired by nature and backed by science for increasing human healthspan and lifespan. Founded in 2016, **spermidineLIFE®** is based on the scientific research of Dr Frank Madeo at the University of Graz.

As its name may suggest, the polyamine spermidine was first isolated from male semen in the 1920s, however, its function was not understood until the 21st century. Dr Madeo was the first scientist to discover the unique ability of spermidine, a polyamine naturally found in every cell of our body, to trigger autophagy and increase human lifespan. It took three years to develop production methods suitable for widescale market distribution in Austria with international expansion commencing in 2020. Longevity Labs++, based in Austria and the US, claims to be the first company to introduce spermidine supplementation into the global market and the only company conducting clinical studies with spermidine through partnerships with leading spermidine and autophagy researchers worldwide.

Herbert Pock, one of three founders, has been a new ventures consultant and advisor for the scientific community for over 25 years. In 2015, while Vedran Bijelac was working under Pock, Pock was asked to evaluate patents, new scientific findings, and research activities at the University of Graz. This is where he first encountered spermidine. Pock was so struck with the potential of Dr Madeo's findings that he approached Dr Madeo on potential products from the research. After Dr Madeo expressed a desire to remain focused on scientific research, Pock agreed to oversee the business aspects. With the help of Dr. Gerald Sitte overseeing organisational development and Bijelac managing marketing and

sales, the three founded Longevity Labs++ and secured Dr. Hannes Androsch-- a philanthropist, successful serial entrepreneur, and the former Finance Minister of Austria-- as the primary investor.

Pock: "As soon as I realized the potential health and human benefits spermidine could have for society, we realised we had to create a company to introduce spermidine into the global market."

The active ingredient in **spermidineLIFE®**, the CelVio Complex, is composed of naturally extracted, locally sourced, non-GMO European, wheat germ and has been approved as a novel food in Europe by EFSA. The lab-verified, spermidine-rich full-spectrum extract also includes added polyamines, healthy fats, Vitamins, and minerals. This CelVio Complex is the blend used in human clinical trials across the world due to its uniquely high spermidine content and high safety and tolerability.

From the **spermidineLIFE®** product launch in 2019, sales have increased remarkably, with 40,000 packages sold in 2019 and over 210,000 packages the following year. Interest worldwide continues to grow, and the product is well positioned to be the globally recognised "original" spermidine supplement and ingredient.

Longevity Labs++ uses pharmacies as a third-party distribution channel in Austria, Germany, and Italy to make the product easily accessible to the public. First entering the US market in August 2020, **spermidineLIFE®** is currently sold via the company's website (spermidinelife.us) and Amazon. Longevity Labs++ plans to eventually team up with pharmacies across the US to expand access and distribution.

Longevity Labs+' state-of-the-art, in-house manufacturing facility boasts GMP and vegetarian/vegan statuses.

Longevity Labs+ is one of the few supplement companies to conduct its own in-house manufacturing, enabling the company to modify and improve processes and ingredients over time; this is particularly important with natural extract products. The company has grown its maximum production capacity to over 2 million packages per year to accommodate future growth. After extraction, the company partners with suppliers for capsuling and packaging of the finished product. The products are tested for spermidine concentrations and other quality control markers before being sent off for distribution.

spermidineLIFE® for Longevity: Target Hallmarks of Aging

Epigenetic changes, mitochondrial dysfunction, loss of proteostasis, altered cellular communication, stem cell exhaustion and deregulation of nutrient sensing

Spermidine is a natural polyamine present in all living organisms that is critically involved in the maintenance of cellular homeostasis. Through its high spermidine, and polyamine content, **spermidineLIFE®** is a trigger for, and mediator of, the cellular process of autophagy, an important process to remove toxic cell matter and restore normal cellular function throughout the body. Spermidine induces autophagy through the inhibition of several acetyltransferases, including EP300, one of the main negative regulators of autophagy. Its action impacts epigenetic changes, mitochondrial dysfunction, loss of proteostasis, altered cellular communication, stem cell exhaustion and deregulation of nutrient sensing.



Flagship Product Deep-Dive

spermidineLIFE®: Product Description

spermidineLIFE® is the world's first, natural food supplement with a high spermidine content. It has been tested for safety and tolerability in humans in clinical studies. It offers a full spectrum blend of polyamines, Vitamins, minerals, and healthy fats. To extract spermidine, Longevity Labs+ uses a natural wheat germ extraction process and avoids the use of additional and aggressive solvents from non-GMO wheat.

spermidineLIFE®: Pre-clinical and Clinical Studies

Although not directly involved in the design of the relevant clinical trials, as the first company to bring a spermidine product to market, Longevity Labs+ quickly attracted interest from research institutions keen to assess the impact of supplementing with natural polyamine.

An initial safety and tolerability study with the Charité University Hospital in Berlin found



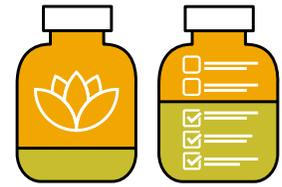
that enhanced spermidine concentrations, as found in **spermidineLIFE®**, were safe and well-tolerated in mice and older adults suffering from cognitive decline. The hospital then followed up this trial with the first human study to evaluate the impact of spermidine supplementation on memory performance in older adults at risk for the development of Alzheimer’s disease. They discovered that nutritional spermidine was associated with a positive impact on memory performance in older adults with subject cognitive decline and that this beneficial effect might be mediated by stimulation of neuro-modulatory actions in the memory system.

Longevity Labs+ hopes to continue to conduct clinical research using its extracted spermidine as there have been a wide range of animal studies conducted exploring the impact of exogenous spermidine supplementation in the context of a variety of indications. Currently exploratory research topics regarding **spermidineLIFE®** include: neurodegeneration, cardiovascular protection, aging and longevity, metabolism, fertility, muscle, cellular stress reduction, immune system, skin, hair and nails.

Longevity Labs+ currently has five clinical trials running through its collaborations and five additional studies in process to begin. One of these ongoing studies is in co-operation with the Geriatric Health Centres in Graz to investigate the effect of spermidine on age-related loss of physical and mental abilities. Another, in collaboration with the German Center for Cardiovascular Research EV Greifswald, will assess the effect of spermidine on metabolic and cardiovascular adaptation during physical exercise in patients with diastolic heart failure.

spermidineLIFE®: Ingredients and Dosage

Ingredient	Description
CelVio Wheat Germ Extract Complex (800mg)	Wheat germ extract has long been recognised for structure/function claims related to immune support and healthy cell regulation. These claims are much further enhanced with the recognition of the importance of spermidine and polyamine content regarding healthy cell function.
Thiamine (0.2 mg)	Thiamine, or B1, has been recognised for its importance in energy and metabolism.
Zinc (1.5 mg)	Zinc has long been recognised for its role in immune support.



spermidineLIFE®: Safety and Risks

spermidineLIFE® has been recognised by the European Food Safety Authority (EFSA) as a novel food. **spermidineLIFE®** has been third-party clinically tested in humans and demonstrated high safety and tolerability with no reported side effects. **spermidineLIFE®** is composed of third-party tested, spermidine-rich wheat germ, extracted using a proprietary, water-based extraction process with no hard solvent agents, and enhanced with thiamine and zinc. **spermidineLIFE®**, extracted from locally sourced non-GMO, European wheat germ, contains gluten and is not suitable for those with gluten allergies or intolerances.

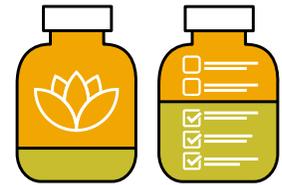
spermidineLIFE® Target Market

Longevity Labs+ are aiming to be the global market leader in spermidine supplements with a current focus on distribution in Europe, the US and South East Asia. Since natural spermidine levels start declining beginning at age 30, everyone above that age could reap benefits from **spermidineLIFE®** with benefits increasing and becoming more noticeable with age. Individuals who are 55+ may benefit greatly in a variety of ways, including but not limited to improved memory, greater energy, clearer cognitive functioning, better skin and increased focus. Because **spermidineLIFE®** is operating on a cellular level, it is a holistic supplementation approach with far reaching effects that work by improving the body's own cellular function.

Success Factors

Team and Reputation

- Longevity Labs+ has a diverse team of academics, business consultants and start-up gurus. The company emphasises that they have been inspired by nature to translate scientific findings into natural solutions to help individuals live a longer and happier life. Longevity Labs+' scientific board members include some of the foremost names in spermidine, autophagy and modern medical solutions, notably notably Frank Madeo, Guido Kroemer, and Lorenzo Galluzi;
- Hebert Pock, Gerald Sitte and Vedran Bijelac are well versed in company scale up, with a combined 25+ years in new ventures consultancy and evaluation of scientific research for patent evaluation;
- The three founders are already proving themselves as a strong team for creating brand awareness and distribution of **spermidineLIFE®**, with sales of 40,000 packages in 2019 increasing to 210,000 in 2020;
- With the launch of its flagship product, **spermidineLIFE®**, Longevity Labs+ has received significant attention from the medical and scientific communities worldwide researching the applications of the impressive polyamine, spermidine. This interest has expanded Longevity Labs+ home European markets, along with the US, Russia, China, India and many more on the way. Strategic partnerships with some of the foremost university research groups across the world have continued to lead to an increased understanding of the impact of the promising molecule spermidine as well as autophagy;
- **spermidineLIFE®** has received awards in Europe from pharmacists, consumers and medical professionals for the product's novelty;



- Longevity Labs+ continue to receive interest from the research community to use their ingredient in clinical research. Anticipated forthcoming partnerships include prominent worldwide distributors and medical companies to allow further expansion of the distribution of **spermidineLIFE®** and follow-on, application-specific products;
- Since entering the Austrian market in 2019, **spermidineLIFE®** has been named the third most successful new supplement in Austrian pharmacies based on 2019 sales. In addition, it has been named the most innovative new product in Germany in 2020, as voted for by physicians and customers.

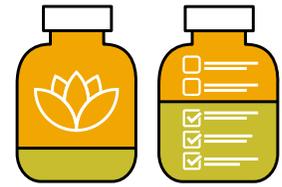
Intellectual Property

- As spermidine is extracted from wheat germ, there is potential for market entry by other competitors, and there are already a few other companies creating spermidine supplements. However, Longevity Labs+ differentiates **spermidineLIFE®** from other spermidine products with its proprietary natural extraction process, developed in co-operation with the university of Graz, guaranteeing 100% spermidine within the CelVio complex;
- **spermidineLIFE®** is the first and only spermidine supplement used in clinical studies developed by world renowned aging specialists. It has been independently tested for safety and tolerability over extended periods of time. **spermidineLIFE®** is the only form of spermidine in the global market that has been verified by both the Austrian AGES and the European EFSA as “Novel Food”. It is a full-spectrum blend made without the use of aggressive solvents or synthetic spermidine;
- Since the product is a natural extract it can be susceptible to aesthetic changes with exposure to light, heat and humidity. While it does not affect the quality of the ingredients within the product, Longevity Labs+ have adjusted the capsule coating accordingly to prevent undesirable aesthetic changes;

- As the first producer of extracted and quality controlled spermidine from wheat germ, Longevity Labs+ has created partnerships with Universities who wish to use the product in clinical trials. This gives **spermidineLIFE®** the further advantage of being able to use the results of a number of clinical trials to improve its marketing capabilities;
- Longevity Labs+ have launched an additional derivative product called **spermidineLIFE® Immune**. It believes this new product will help to improve cognition, cardiovascular health, and the immune system. It is made from the full extract blends of **spermidineLIFE®** combined with synergetic ingredients such as Shiitake mushroom extract;
- Longevity Labs+ will be launching a third product in April of 2021;
- Longevity Labs+ has two patents pending and continues to focus on its scientific research and partnerships.

Funding

- A major investor of Longevity Labs+ in is Dr Hannes Androsch, the former Finance Minister of Austria and a successful entrepreneur;
- The company was profitable in its second year of operation with revenue of 6.3 million and they are aiming for a revenue of 13 million in 2021;
- The company’s current operations, although not seeking, are open to additional capital. The company would like to focus on expanding their strategic partnerships. Additional capital would be used for more complex clinical studies and product development activities in the future;
- Any additional capital raised will be used to further clinical studies and to increase the robustness of the company’s clinical and scientific based research, along with expanding markets and product categories;

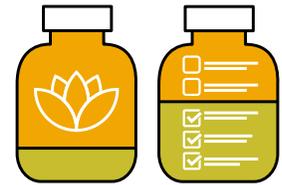


- The company believes that, due to the cutting-edge nature of spermidine research, awareness of the ingredient's ability to slow aging is both the main inhibitor and opportunity for growth;
- To ensure growth, Longevity Labs+' key metrics will be to focus on product quality, customer satisfaction and awareness. The more that communities become aware of the relevant research and the importance of spermidine and polyamines, the greater the opportunities for the company. The company hopes to focus its efforts focus largely on word-of-mouth education on the efficacy and importance of their product, creating brand champions in the process;
- The company prides itself on using evidence and data yielded from clinical studies to perfect its product blends and to continually optimise the products' health benefits. Enjoying a period of self-funded growth, Longevity Labs+ and **spermidineLIFE®** are well positioned to take on additional private investment to further advance research and product development for several indications and product categories. Given the current growth trajectory, the company is open to a major investment round to expand product and market reach within the next two years.

spermidineLIFE[®]: success grid

<p>Intellectual property: Information for this page is only available within the full report.</p>	<p>Team: Information for this page is only available within the full report.</p>	<p>Unique value proposition: Information for this page is only available within the full report.</p>
<p>Efficacy: Information for this page is only available within the full report.</p>		<p>Competitive advantage: Information for this page is only available within the full report.</p>
<p>Target: Information for this page is only available within the full report.</p>		
<p>Customer segments: Information for this page is only available within the full report.</p>	<p>Channels: Information for this page is only available within the full report.</p>	<p>Runway: Information for this page is only available within the full report.</p>
<p>Inflection point: Information for this page is only available within the full report.</p>		

■ = Positive progress
 ■ = Work-in-progress
 ■ = Needs attention



About us

The report has been produced by the Market Intelligence Unit of LongevityTechnology – the number one online destination for daily news on the growing longevity market.

As a brand of First Longevity Limited, we bring together innovators and investors to commercialise the companies that will form the longevity economy.

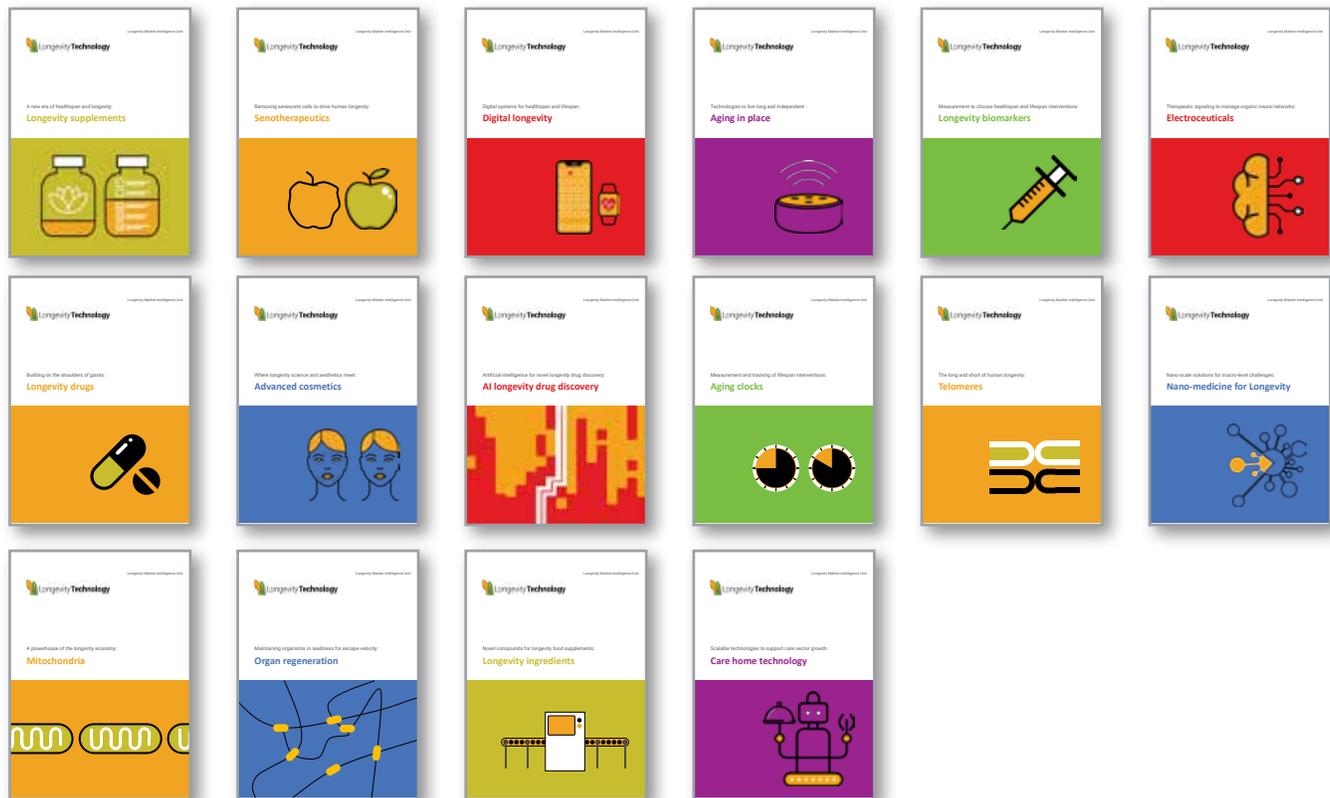
There are already 100+ rejuvenation biotechs working on unique therapies and building R&D pipelines to increase healthspan and lifespan.

At the same time, all around the world, innovators are releasing nanobots, reprogramming nerve signals and applying AI to create exciting and scalable contributions to human longevity.

As a team we look beyond rejuvenation therapies to embrace other technologies that participate in the longevity investment category: agetech, xenotransplantation, biomarkers, AI, bioprinting, neuroceuticals, GRAS supplements ... over the coming period we will be publishing regular reports.

There are multiple technologies that contribute to the reduction of morbidity and the extension of lifespan: they will provide investors and innovators with both risks and returns. We're here to help analyse, report and educate.

You can find information about our next reports by visiting: <https://longevity.technology/product-category/analysis/>





**We bring together innovators
and investors to commercialise
the companies that will form
the longevity economy.**

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