A Guide to Powering Your Supplement Products with Anti-Aging Ergothioneine

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Ergothioneine is an amino acid with antioxidant and cytoprotective properties. It is widely used in nutritional supplements due to its numerous health benefits, which can include increased immune system function, anti-inflammatory properties, and many others. It is also highly bioavailable, meaning it can easily be absorbed into the bloodstream after ingestion.

Existing sourcing and production methods for ergothioneine supplements typically rely on edible mushrooms; however, due to recent advancements in synthetic biology, this extraction process is no longer required. Leading research and biopharmaceutical company GeneIII Biotech has developed high-purity ergothioneine production processes to meet global demands. Using industry-leading, patented technology and the principles of synthetic biology, we are able to supply raw bioactive materials to supplement brands worldwide looking to enter the market or improve their existing products.

This eBook will discuss how ergothioneine works in the body and its unique health benefits. We'll also cover sourcing, development, and sales considerations for companies that are considering incorporating raw ergothioneine into their supplement products.

The Science Behind Ergothioneine

Ergothioneine, also known as EGT, is a rare, naturally occurring amino acid that is similar in structure to histidine. When ingested, a transporter within the human body called OCTN1 readily picks it up and takes it to tissues throughout the body. EGT is metabolized slowly, which allows it to reach many parts of the body, including lung tissue, the brain, heart, kidneys, and eyes. It can even cross the blood-brain barrier to combat oxidative stress in brain tissue.

Research studies have linked low blood plasma levels of ergothioneine to certain diseases, such as Parkinson's disease or Alzheimer's, indicating the important role it could play in reducing the onset or progression of many age-related diseases.

The Functional Benefits of Ergothioneine

When taken in supplement form, EGT offers a multitude of health benefits. From promoting longevity to maintaining mitochondrial health, this powerful antioxidant protects the body in several ways:

- **Anti-aging properties.** EGT has been shown to neutralize free radicals in the body, protecting against metabolic and neurodegenerative diseases while promoting skin health and elasticity.
- **Immune system support.** EGT helps the body combat inflammation and oxidative stress, resulting in a strengthened immune system and faster recovery from illness.
- **Neuroprotective effects.** By reducing oxidative stress in the body, EGT promotes enhanced cognitive function, including improved memory and focus.

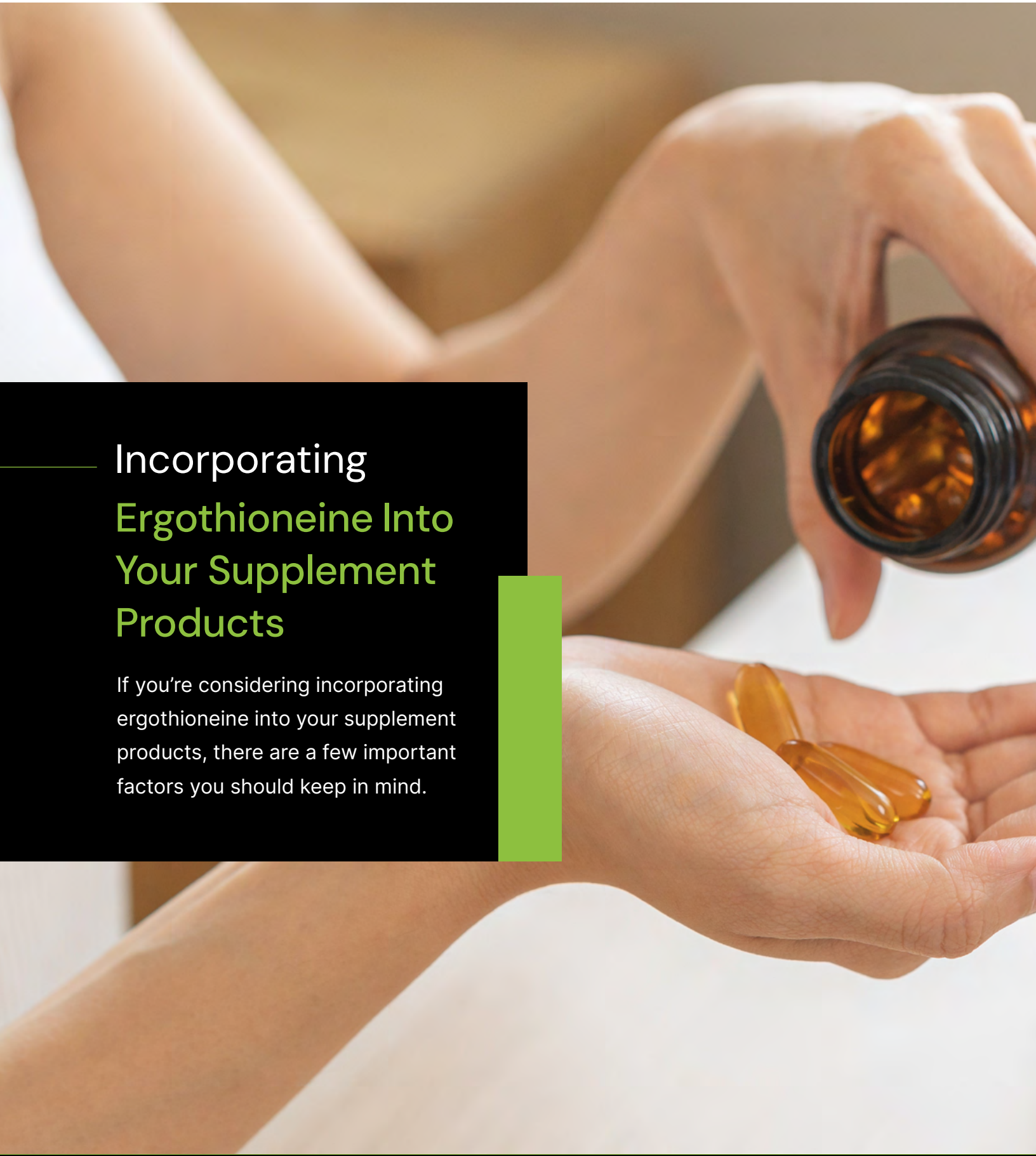
Producing

High-Purity Raw Ergothioneine Material

Manufacturing high-purity ergothioneine in its raw form begins with identifying a suitable microbial source. Historically, this has been challenging because natural sources of EGT are expensive and difficult to obtain. EGT is found in plants like reishi mushrooms, but only in small amounts, and the fungi themselves are somewhat rare. Even when growing large quantities of reishi mushrooms, the EGT yields vary greatly from one mushroom to the next, which causes production challenges.

More recently, leaders in synthetic biology, like GeneIII, have uncovered metabolic engineering processes that allow EGT to be produced and synthesized much more efficiently. Techniques like microbial fermentation offer an environmentally friendly approach while allowing for large-scale mycelium cultivation. Fermentation strains can be constructed using gene editing, while fermentation optimization processes can be used to improve growth rate during fermentation and increase EGT yield.

Rigorous controls are implemented throughout the growth processes to ensure the end product remains highly pure. When the growth process is finished, the ergothioneine is removed from the fermentation broth and purified. This production method is not only scalable but also significantly reduces production costs.



Incorporating Ergothioneine Into Your Supplement Products

If you're considering incorporating ergothioneine into your supplement products, there are a few important factors you should keep in mind.

REQUIRED EGT CONCENTRATION.

While EGT is highly bioavailable as a raw ingredient, the concentration needed for a given product will vary depending on the desired formula, product goals, target audience for the product, and other factors.

SUSTAINABILITY.

Sustainability plays an important role in any manufacturing process. In the supplement industry in particular, minimizing toxic chemical exposure is essential. Microbial fermentation provides a cost-effective, safe, and renewable production method with minimal environmental impact.

MARKETABILITY.

The most effective way to market any supplement is to research the needs of end consumers and learn more about how they will use the supplement products. This may also help determine the form of ergothioneine (powder, capsule, liquid) you use and the other ingredients you add to your product. Additionally, providing dosage information will help your customers easily integrate your new product into a long-term health and wellness plan.

The U.S. Manufacturing Advantage

Obtaining raw ergothioneine from a U.S. manufacturer like GeneIII delivers many benefits, including lower costs, scalable production, regulatory compliance, and more. Consider the following advantages:

REDUCED COST.

We utilize cell factory technology and strain construction in the research and scaled production of ergothioneine, lowering costs to 1/10th of the original price.

SOURCE RELIABILITY.

Partnering with a reliable supplier can lead to better quality and improve the marketability of EGT supplement products. GeneIII's ergothioneine is 99.99% pure, as confirmed by independent third-party testing laboratories.

PRODUCTION SCALABILITY.

GeneIII has achieved engineering-scale production of ergothioneine. We use safe medium components and controlled processes to maximize EGT yield, giving supplement companies more flexibility in their formulation and product development processes.

SAFETY AND REGULATORY COMPLIANCE.

EGT manufactured in the U.S. must meet specific criteria before it can be distributed for use in supplement products. Our production facilities adhere to cGMP pharmaceutical standards. Currently holding self-affirmed GRAS (Generally Regarded as Safe) status, we have submitted our application for FDA-granted GRAS certification.

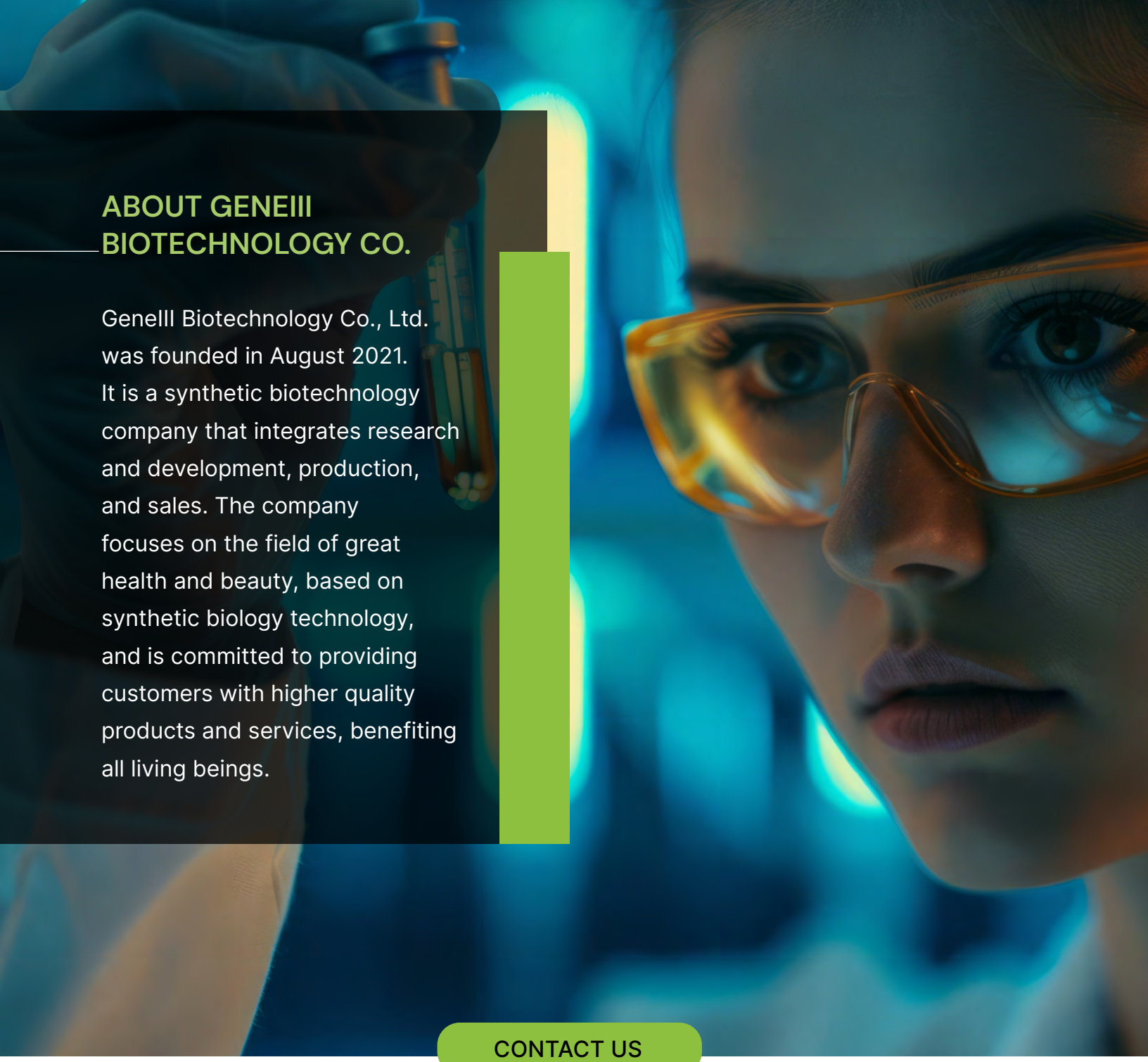
As a leading researcher and biopharmaceutical company, GeneIII is uniquely positioned to supply ergothioneine in the necessary quantities for supplement brands while meeting cost, quality, and compliance requirements.

Contact GeneIII for High-Purity Raw Ergothioneine

Ergothioneine is a highly bioavailable antioxidant that is quickly gaining momentum in the supplement industry. With its proven ability to protect against oxidative stress and cellular-level damage, it serves as a powerful tool for supporting health and longevity. It is also easy to combine with synergistic ingredients to enhance its numerous benefits.

As a trusted global supplier of raw EGT materials, we work tirelessly to produce effective, high-purity products that meet consumer demands. Our team works around the clock to address the challenges of fermentation, purification, and scale-up production to provide ergothioneine in line with rigorous safety standards. GeneIII is FDA, USDA, SGS, and GRAS certified. Our L-Ergothioneine materials are also certified Kosher and Halal.

If you're interested in incorporating ergothioneine into your health products, GeneIII can provide the quality, American-manufactured materials you need. Contact us today to learn more.



ABOUT GENEIII BIOTECHNOLOGY CO.

GeneIII Biotechnology Co., Ltd. was founded in August 2021. It is a synthetic biotechnology company that integrates research and development, production, and sales. The company focuses on the field of great health and beauty, based on synthetic biology technology, and is committed to providing customers with higher quality products and services, benefiting all living beings.

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