

Chrysea and Chalmers University Partner for Development of Benzyloisoquinoline Alkaloids for Human and Animal Healthcare

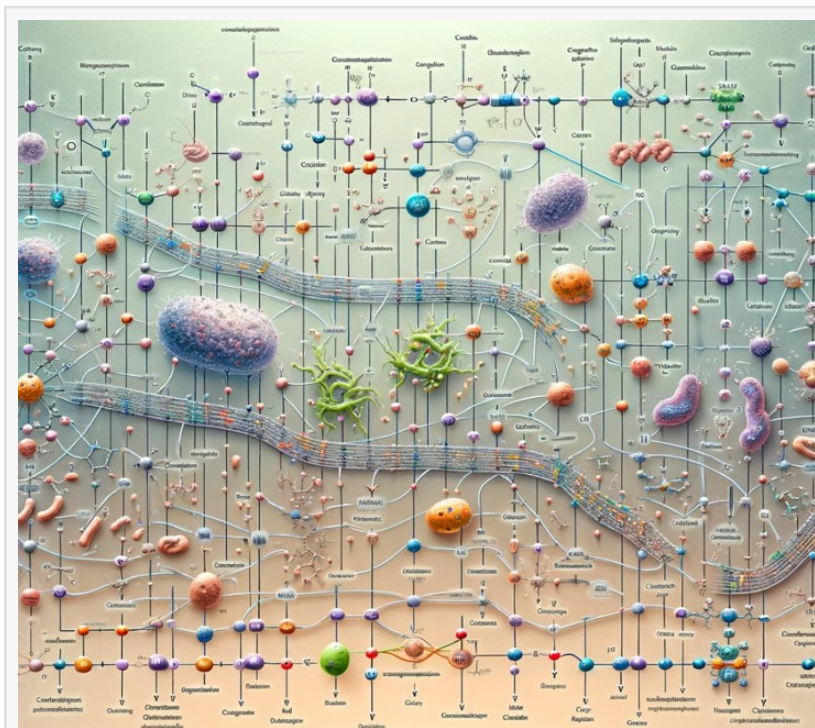
Leveraging synthetic biology and data analytics to unlock the sustainable development of high-value bioactives with unparalleled purity and volume at scale.

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/EINPresswire.com/ -- Researchers at Chalmers University of technology have developed an innovative yeast-based platform for producing [Benzyloisoquinoline alkaloids](#) (BIAs) using [synthetic biology](#) techniques. BIAs constitute a diverse class of plant secondary metabolites that exhibit a myriad of pharmacological activities, including anti-pain, anti-microbial, anti-tussive, anti-spasmodic, and anti-

addiction properties. Complex stereochemistry renders chemical synthesis of BIAs largely unfeasible and thus only a small proportion of these valuable compounds are currently produced through traditional crop-based manufacturing i.e. agriculturally sourced. Synthetic biology and sophisticated microbial engineering coupled with recent advances in the elucidation of plant BIA metabolic networks has enabled the sustainable production of high-value BIAs by precision fermentation with unparalleled purity at scale.

This breakthrough in technology has led to several patents being filed by Chrysea and the Inventors to protect the BIAs platform and to address the challenge of reconstructing plant-derived pathway enzymes in microorganisms, which often resulted in low-efficiency production. The potential of this platform for efficient BIA production is incredibly exciting and could have significant implications for various industries. Chrysea and the University of Chalmers will further work in a collaboration for discovering and characterizing valuable bioactives of this family that can be turned into valuable products with pharmacological properties or to address



Engineering Cell Factories using Synthetic Biology

wellness mega-trends sought by healthy-lifestyle consumers.

Among the ~2,500 BIAs known, some naturally occurring compounds play a role in glucose and lipid metabolism. Managing blood glucose levels has long been an area of interest for health-conscious consumers. The latest research is revealing multiple health-benefits from reducing blood glucose spikes, including weight-wellness, better [metabolic health](#), hormonal health, and even better mood and mind.

Metabolic health is essential for our overall well-being, and metabolic ill health can lead to various chronic conditions such as obesity, diabetes, and cardiovascular-kidney-metabolic syndrome (CKM), which have a significant impact on society by contributing to a range of health complications, increasing healthcare costs, and diminishing overall quality of life. Fortunately, lifestyle and nutrition interventions can help improve metabolic health. Choosing foods that don't cause large glucose spikes or adding nutrients and foods that enhance glucose processing can make a significant difference.



About the Benzyloquinoline Alkaloids (BIAs) Platform and Synthetic Biology.

Benzyloquinoline alkaloids are plant-derived small-molecules with diverse structures, known as BIAs, which have become an increasingly valuable resource for the pharmaceutical, healthcare and consumer products industries. Bakers yeast cell-factories can provide a scalable and environmentally sustainable production method to access these high-value bioactive compounds. Using Synthetic biology, strategies could be developed for high-level production of many BIAs via precision fermentation, further facilitating wider applications of these products in human and animal health.

About Blood Sugar Management and Health

Blood sugar management is a crucial area of research, with over 2,000 human studies published annually*, primarily in connection with diabetes. However, there is a growing interest in the links between healthy blood sugar and mood, anxiety, depression, focus, and others. Additionally, research is exploring the links between blood sugar management and food components. There have been 47 published human studies on the beneficial effects of dietary interventions since

2012. As the scientific evidence grows, it will have a more significant impact on communications about food.

*Source: PubMed

About Chrysea

Chrysea is a biotechnology company revolutionizing the healthcare and wellness industry with precision healthy-lifespan interventions. Leveraging tools of Synthetic Biology and Data Analytics we have unlocked the potential to manufacture products of unparalleled purity at scale, introducing solutions previously inaccessible to industry. Our approach integrates these advanced tools seamlessly into our operations, enabling us to establish a vertically integrated, sustainable business model that spans from laboratory research directly to the consumer. Chrysea's products are backed by rigorous science-backed clinical research, ensuring pure, safe, functional ingredients and brands that consumers can trust. Join the movement towards a healthier future with Chrysea. #healthylifestyle #precisionhealth #wellnessindustry.

Pedro de Noronha Pissarra, PhD

Chrysea Limited

pnp@chrysealabs.com

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