

Colouring the Future Naturally

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As global demand rises for clean-label, high-performance food ingredients, the shift from synthetic to natural colours is accelerating and fermentation-derived pigments are emerging as the most scalable and sustainable solution. At the forefront of this transformation is Chromologics, a Danish biotech company pioneering next-generation colourants through precision fermentation.

Fresh off a \$7 million funding round, Chromologics is now preparing to take its flagship ingredient Natu.Red through EFSA and FDA regulatory pathways, positioning it as one of the most promising new entrants in the natural colouring space. With its unique molecular structure, exceptional pH and heat stability, and highly efficient biomanufacturing process, Natu.Red is engineered to solve the performance, cost, and supply-chain challenges that have long limited traditional natural colourants.

In this exclusive conversation with NUFFOODS Spectrum, Gerit Tolborg, CEO and Co-Founder of Chromologics, discusses how the new funding will accelerate regulatory submissions, why Natu.Red stands apart from both natural and synthetic red pigments, and how fermentation-based colours are poised to reshape global markets from the US and Europe to emerging regions adopting stricter regulations on synthetic additives. She also shares insights on sustainability, commercial scale-up, and the future of fermentation-driven ingredient innovation.

Chromologics has just secured €7 million in new funding. How will this capital accelerate the regulatory and commercial milestones for Natu.Red?

The additional €7 M will be used to finalise the submission to both EFSA and FDA. In order to prepare a comprehensive dossier for the regulatory agencies, a comprehensive battery of toxicological tests is needed. Chromologics has already concluded most of these tests and demonstrated the safety of Natu.Red. The new capital will be used to finalise the dossiers and bring them to submission.

The commercial team will continue to build long-lasting customer relationships, establish supply agreements and enter strategic partnerships.

Even though, Natu.Red works in many applications as plug and play colorant, especially in new product launches it can be beneficial to work closely together with the food companies in order to deliver exactly the performance they are looking for

Fermentation-based colours are still emerging in the food industry. What makes Natu.Red distinct from existing natural and synthetic red pigments?

The competitive advantage of Natu.Red is that it is a completely novel molecule, that brings new and better performance characteristics. Our IP-protected fermentation method makes its supply stable, reliable, cost-competitive and independent of seasonal variation. Compared to fermented Betanin or Carmine, it is not based on targeted genetic engineering, so it will be accepted by a large consumer basis.

Natu.Red is very pH and temperature-stable. That means it can be used in a variety of baking applications and can also withstand different heat processing steps of dairy products. It is also taste and odourless, that means it qualifies for both sweet and savoury applications.

Chromologics can formulate Natu.Red in both a water and fat-soluble colourant.

You've highlighted scalability, cost efficiency, and safety as key strengths. Could you elaborate on how Chromologics achieved cost-competitive biomanufacturing?

Thanks to our highly skilled fermentation team that has many years of experience in designing and optimising fermentation processes, Chromologics managed to design a highly effective and robust fermentation process of Natu.Red. We have scaled the process from 1 L in a university laboratory to several thousand litres at an industrial scale. During this, we have adapted the process to run on standard equipment available at commercial CMOs and at the same time improve yield and efficiency.

Regulatory approval is a crucial step. What has your experience been so far with EFSA and FDA submissions, and what timelines are you working toward for market entry?

When it comes to the FDA, we really appreciate the option to have pre-petition meetings that allow us to discuss our strategy with the relevant people from the agency, so that we can fine-tune our dossier before final submission.

EFSA has recently changed their guidelines for novel food additives, showing openness and flexibility towards fermentation-based ingredients. We see that as a positive trend also in Europe, where the regulatory bodies adapt to the industry trends and standards without compromising on safety.

With both agencies, our experience has been positive. Both agencies have a tremendous ability to attract extremely knowledgeable and diligent safety reviewers. We look forward to continuing to work with them both for us to hit the market as soon as their capacities allow a complete and thorough safety review.

Sustainability is becoming central to ingredient innovation. How does Natu.Red contribute to a greener and more resilient food colourant supply chain?

By using a filamentous fungi for the production of Natu.Red we spare high value agricultural products such as beet root, tomatoes or grapes because the only big input we have for our process is sugar. Furthermore our fermentation process is way more efficient in converting input, so sugar into colour than traditional processes that are based on extraction. Please see infographic on our sustainable supply chain.

With bans on synthetic colourants increasing globally, where do you see the biggest commercial opportunities for fermentation-derived colours over the next 3-5 years?

The US is currently one of the most dynamic markets, with strong momentum behind the shift from synthetic to natural colours. We expect this trend to spread to other regions, including LATAM and the Middle East.

In Europe, our focus is different: weâ??re addressing the needs of food manufacturers who are struggling with the performance of todayâ??s natural colour options and offering a solution that truly works.Â Additionally, we contribute to the reduction of nitrate, as Natu.Red has also excellent performance in a variety of meat products.

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