

Particles for Humanity Selects Final Vitamin A Product and Process for Commercial Scale-up

Encapsulated vitamin A product significantly outperforms commercial products

Cambridge, MA (June 30th, 2022)—Particles for Humanity has selected the final product and manufacturing process for its stable form of vitamin A, PFH-VAP, that will be used in commercial scaling. This achievement is a major grant milestone, triggering a \$1 million payment.

At the end of 2021, Particles for Humanity transitioned from lab scale development to pilot manufacturing of PFH-VAP, increasing batch size 1,000-fold. The final product was selected for commercial scaling primarily because of its superior stability, the primary driver of cost-effectiveness. A common spray drying technique was selected for the manufacturing process because it is simpler, less expensive to operate, and more widely available than alternative methods. Commercial vitamin A powder with the highest stability must be produced using a more complex process, adding expense and constraining production locations.

PFH-VAP is being developed to fortify foods, like bouillon and wheat, that are widely consumed by people in Africa and South Asia, where vitamin A deficiency (VAD) is prevalent. 190 million school age children and 19 million pregnant women suffer from VAD, which causes night blindness, stunting, and death. Fortifying widely consumed foods is a proven strategy for reducing malnutrition at scale, but the instability and cost of vitamin A are obstacles to wider adoption.

In the high temperature and high humidity environments present in parts of Africa and South Asia, commercially available products in some foods, including bouillon, lose large amounts of vitamin A. This limits their ability to address VAD. In contrast, PFH-VAP has significantly better stability. After 9 months of storage in these harsh conditions, bouillon fortified with PFH-VAP contained more than twice as much vitamin A as a leading commercial formulation.

Particles for Humanity conducted its pilot scale up and product selection work in partnership with LIS by Lesaffre, a leader in contract spray drying for food ingredient clients. LIS is a subsidiary of Lesaffre Company, which operates 76 production sites and distributes its solutions in 185 countries. PFH selected LIS because they have facilities to support work from R&D through commercial scaling and can produce PFH-VAP at the very large volumes needed for large scale food fortification. Work with LIS began in July 2020 at their dedicated research facility, Powder Studio™, and PFH has continued to partner with LIS during the transition to pilot scale.

“We are inspired to play a significant role in manufacturing this product, which can save many lives and contribute to the healthy growth of millions of children. We are confident in the smooth transition to commercial scale production, especially given the significant infrastructure already in place,” said Francois Cachot, General Manager of LIS.

Particles for Humanity transforms early-stage medical technology into products for people living in low-resource settings. It is developing a portfolio of products with funding from the Bill & Melinda Gates Foundation, Mulago Foundation, and King Philanthropies. Its rigorous product development process is based on end-user input and is focused on financially sustainable product opportunities. For more information, visit the company's website www.particlesfh.com.

Please contact info@particlesfh.com for inquiries.