Press Release
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Green Elephant Biotech GmbH Expands CellScrew® Product Line to Enable Sustainable Commercial Cell and Gene Therapy Scale-up

CellScrew® mini enables makers of CGTs, viral vectors and vaccines to develop cell culture processes on an efficient, sustainable device before scaling up for clinical trials

Giessen, Hesse, Germany – October 22, 2024 – Green Elephant Biotech GmbH, the world's first company to develop, manufacture and sell consumables for laboratories made from plant-based plastics, today announced a scaled-down model of its innovative CellScrew® cell culture system that will allow biopharma developers to develop processes for cell and gene therapy (CGT) manufacturing that are scalable from research through commercialization. The CellScrew® mini, with a growth area of 850 cm², leverages the efficiency, flexibility, and sustainability that the CellScrew® system is known for in its 6,000 and 10,000 cm² models, in a design to enable entry-level cell culture.

The cultivation of cells for CGTs, viral vectors, or vaccines begins with the crucial seed-train phase, where cells first multiply before the actual production of the therapy takes place. Consistent quality and massive cell proliferation are essential to advance the production of the therapy and ultimately make it available to patients. However, switching from systems designed for research to clinical and commercial scale when the cultivation area of one system is reached often causes problems and leads to time-consuming and costly adjustments. This commonplace manufacturing issue has contributed to the exorbitant costs of therapies, reaching up to $4.25 million per treatment.

To reduce production costs associated with therapy using space-conscious and sustainable technology, Green Elephant Biotech brought the CellScrew® cell culture system to the market. The new CellScrew® mini serves as a bridge to the larger models and acts as an entry-level model during process development for an easier transition from existing systems to the innovative, dynamic system. Scaling development with the line will also prepare companies to grow into an automated CellScrew® system, now in development.

"The CellScrew® mini is a favourable way to initially explore our cell expansion technology, particularly for CGT development. But it also allows more parallel experiments for process development and optimization, which can be directly transferred to our lager systems," said Joel Eichmann, co-founder and managing director of Green Elephant Biotech.

The CellScrew® mini adheres to high sustainability standards set by Green Elephant Biotech, which is based in Giessen and Berlin. The company uses polylactic acid (PLA), a plastic made from cornstarch, for all of its products. Savings in CO_2 emissions due to the renewable material and reduced energy consumption during production result in a product range that offers users a real opportunity for a more sustainable approach in adherent cell cultivation. The biocompatibility of PLA makes it well-suited for laboratory applications as it is not harmful to cells, and it can match the application-specific properties of its fossil predecessor.

Like the other members of the CellScrew Scale team, the CellScrew® mini is manufactured using 3D printing. Earlier this year, the company established its independent industry-compliant production facility in Giessen. Additive manufacturing allows for the production of complex structures like those in the CellScrew®. For instance, the product's internal Archimedean screws transport culture media and gas through the bottle via rotation, creating an excellent growth environment for the cells. Several concentric cylinders provide a large growth area, which, thanks to TC treatment and sterilization, is ideal for cell attachment and controlled growth.

The CellScrew® mini is available as a standard unit of three directly from the company. The CellScrew® models with 6,000 cm² (CS6K) and 10,000 cm² (CS10K) are also available through international distributors.

About Green Elephant Biotech
Green Elephant Biotech is the world's first company to develop, produce, and distribute lab consumables made from plant-based plastics. With its innovative and sustainable products, Green Elephant Biotech

enables the biopharmaceutical industry to make new and life-changing therapies available to patients. The innovative CellScrew® cell culture system, the company's first product, enables the biopharmaceutical industry, academic researchers, and producers of cultivated food to achieve more sustainable and efficient cell culture. Green Elephant Biotech was spun off from the University of Applied Science Mittelhessen in 2021 by Felix Wollenhaupt and Dr. Joel Eichmann and currently employs 12 people in Berlin and Giessen. For more information, visit:www.greenelephantbiotech.com.

About Polylactic Acid (PLA)
PLA is a biopolymer from renewable raw materials, like plant starch from corn. This means that, during disposal, the only carbon dioxide that can be released into the atmosphere is the amount that the corn plants previously removed -- as opposed to the additional carbon dioxide released during the incineration of petroleum-based plastic. The production of PLA is also less energy-intensive than making polystyrene. Green Elephant Biotech’s PLA-based products, like its microtiter plates, therefore have a 50% lower carbon dioxide footprint over its entire life cycle compared to fossil fuel predecessors.