



## GreenLight Biosciences and Samsung Biologics complete first commercial-scale engineering run for mRNA Covid-19 vaccine

August 1, 2022

- **GreenLight's messenger RNA production process is transferable to large-scale equipment and CMO facilities**
- **Technology transfer and scale-up from lab bench to Samsung's commercial facility was completed in seven months**
- **GreenLight's mRNA synthesis reaction had a titer of 12g/L at a commercial scale and produced 650g of mRNA**
- **The mRNA synthesis reaction was achieved without the need for customization, using standard equipment for Contract Development and Manufacturing Companies (CDMO)**
- **Commercial-scale run has demonstrated production—in a single facility—of both Drug Substance and LNP formulation, allowing the production of bulk Drug Product**

GreenLight Woburn lab 2



GreenLight's messenger RNA production process is transferable to large-scale equipment and CMO facilities

BOSTON and INCHEON, South Korea, Aug. 01, 2022 (GLOBE NEWSWIRE) -- GreenLight Biosciences (Nasdaq: GRNA), a biotechnology company dedicated to making ribonucleic acid (RNA) products affordable and accessible for human health and agriculture, and Samsung Biologics (KRX: 207940.KS), a leading global CDMO providing fully integrated end-to-end contract development and manufacturing services, announced the successful completion of the first commercial-scale engineering run for the companies' mRNA production partnership.

Since the announcement of the strategic partnership between GreenLight Biosciences and Samsung Biologics in late 2021, technology transfer and scale-up from the lab bench to Samsung's commercial facility was completed in seven months, demonstrating platform adaptability and scalability.

GreenLight's process—from drug substance and lipid nanoparticle formulation to bulk drug product—can be completed in the same facility, an important capability. GreenLight's mRNA synthesis reaction had a titer of 12g/L at commercial scale and produced 650g of mRNA.

The company's RNA platform allowed GreenLight to move from conceptualizing an mRNA vaccine to delivering released clinical trial material in less than two years. With the demonstration at Samsung, and with GreenLight's Covid booster vaccine clinical trial expected to start in 2022, GreenLight would be capable of supplying mRNA vaccine at a commercial scale.

"This demonstrates a major achievement in our continuing goal to offer one-stop end-to-end mRNA production from Drug Substance to Aseptic Fill Finish to commercial release, all from a single site, as we strive across our biomanufacturing network to fight the pandemic," said John Rim, CEO and President at Samsung Biologics.

Earlier this year, Samsung Biologics completed the expansion of its mRNA drug substance manufacturing suite at its Songdo headquarters, where the company is now fully equipped to provide end-to-end mRNA production for clients.

"One of the greatest challenges when producing quality pharmaceuticals is advancing from a small lab to large-scale commercial production," said GreenLight CEO Andrey Zarur. "We are grateful for the help and support of Samsung in demonstrating that our small mRNA process can scale in a linear fashion to the industrial scale that will be needed to help satisfy the vaccine needs of humanity."

To date, all comparability data conforms with expected outcomes, indicating successful scale up and fit of GreenLight's process to Samsung Biologics' Songdo facility. A second engineering run will start in August, to implement improvements indicated by the first run and to demonstrate repeatability at scale.

### About GreenLight Biosciences

GreenLight Biosciences aims to address some of the world's biggest problems by delivering on the full potential of RNA for human health and agriculture. Our RNA platform allows us to research, design, and manufacture for human, animal, and plant health. In human health, this includes messenger RNA vaccines and therapeutics. In agriculture, this includes RNA to protect honeybees and a range of crops. The company's platform is protected by numerous patents. GreenLight's human health product candidates are in the pre-clinical stage, and its product candidates for the agriculture market are in the early stages of development or regulatory review. GreenLight is a public benefit corporation that trades under the ticker GRNA on Nasdaq. For more information, visit <https://www.greenlightbiosciences.com/>

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**About Samsung Biologics Co., Ltd.**

Samsung Biologics (KRX: 207940.KS) is a fully integrated CDMO offering state-of-the-art contract development and manufacturing services. With proven regulatory approvals, the largest capacity, and the fastest throughput, Samsung Biologics is an award-winning partner of choice and is uniquely able to support the development and manufacturing of biologics products at every stage of the process while meeting the evolving needs of biopharmaceutical companies worldwide. For more information, visit [samsungbiologics.com](https://samsungbiologics.com).

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Notes to editors

1. GreenLight and Samsung Biologics announced their partnership in December 2021:

<https://greenlightbiosciences.com/greenlight-biosciences-and-samsung-biologics-announce-collaboration/>

A photo accompanying this announcement is available at <https://www.globenewswire.com/NewsRoom/AttachmentNg/5f22986d-9b95-4bf5-9d6f-334ea48f22ba>