# One tool for One Health:
# Healthy people and planet through RNA innovation

GreenLight BIOSCIENCES™

August 2022

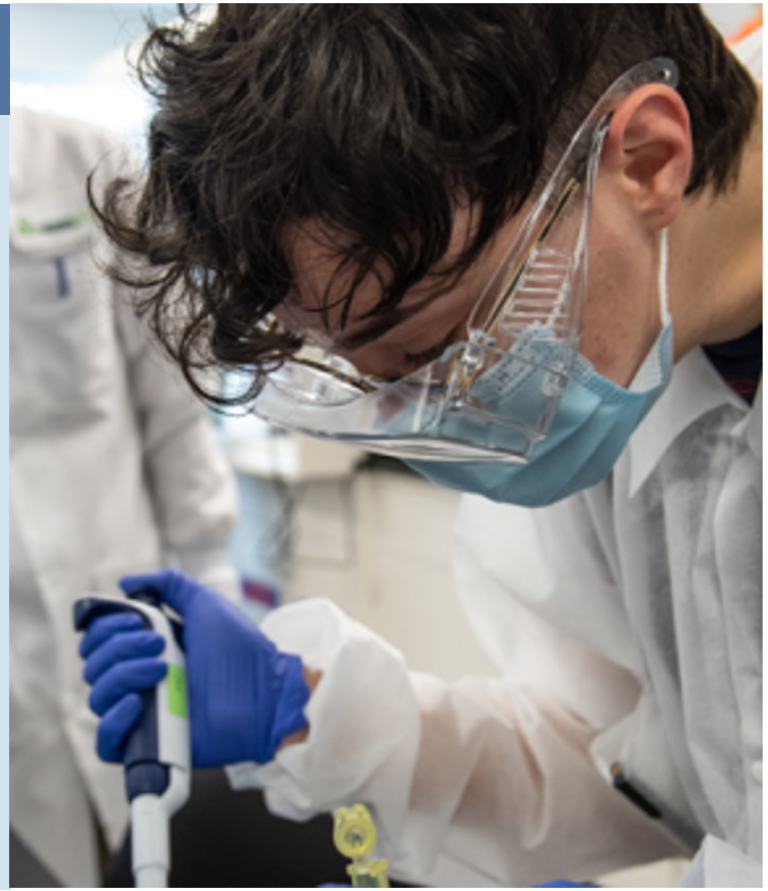
# Forward-Looking Statements

This presentation contains and our officers, directors and employees may make “forward-looking statements” within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995, with respect to GreenLight’s future operations, scientific developments or financial results. These forward-looking statements generally are identified by the words “aim to”, “believe,” “project,” "target", "potential", “expect,” “anticipate,” “estimate,” “intend,” “strategy,” “future,” “opportunity,” “plan,” “may,” “should,” “will,” “would,” “will be,” “will continue,” “will likely result” and similar expressions. Many factors could cause actual future events to differ materially from the forward-looking statements in this presentation, including the evolution of the Covid-19 pandemic, the acceptance of RNA-based technologies by regulators and the public, our ability to raise and productively deploy capital and the rate and which we can successfully bring products to market. Readers are cautioned not to put undue reliance on forward-looking statements. GreenLight assumes no obligation to update or revise these forward-looking statements, whether as a result of new information, future events or otherwise. For additional information on GreenLight and potential risks associated with investing, please see our public filings at https://www.sec.gov/edgar/browse/?CIK=1822691&owner=exclude.

This presentation contains references to other entities which are not intended to imply any endorsement or sponsorship of the Company by those entities.

# GreenLight at a glance

| Platform | Agriculture | Human Health |
| --- | --- | --- |
| Manufacturing technology that enables the cost of RNA active ingredient for agriculture at a commercial-scale plant to be **less than $1/gram** | Diversified RNA-based pipeline with **7 agricultural product launches** planned between 2022 and 2026 | Preparing for Covid-19 vaccine **Phase 1** clinical trial in Africa |
| Manufacturing plant can produce **500 kg of RNA** for agricultural uses per year[1] | Expected 2022 **EPA approval** for foliar-applied RNA pesticide, protecting against Colorado potato beetle | Samsung Biologics will manufacture our messenger RNA Covid-19 vaccine candidate at a **50-liter scale** |



Source: 1. 500 kg is sufficient to treat more than 50,000 hectares of potato fields at our current field trial dosage of 9.9 g/hectare of Calantha™.

## Mission

# To solve some of the world's largest and most difficult problems.

- Food Security
- Global Health
- Climate Change

## Strategy

# We aim to address these problems, profitably, sustainably, and equitably by delivering on the full potential of RNA.

- Control pests using double-stranded RNA
- Replace chemical products with RNA solutions designed to have no off-target effects
- Develop messenger RNA vaccines and therapeutics to promote global health
- Own proprietary manufacturing

# Our largest challenges are inextricably linked

GreenLight offers global, targeted, environmentally-sound solutions

**Threats to food security**

**Pandemics and global health**

**Population growth and climate change**

# Food security and climate change

We need new modes of action to efficiently control pests while respecting the environment

## The problem

**1.2**
**billion tons**
of food is lost on farms[1]

contributing to
**2.2**
Gtons of Greenhouse gasses[1]

Up to
**40%**
**of food loss**
is due to plant pathogens (30%) and pests (10%)[2]

more than
**800**
million people could be fed[1]

## Existing challenges

**Resistance**
Many traditional pesticides are losing effectiveness

**Residues**
Plant protectants have had negative impacts on biodiversity[3]

**Regulatory**
Environmental risk assessments are increasing in cost and complexity[4]

## The dsRNA advantage

- New mode of action that seeks to increase food productivity while respecting the environment
- Targeted and biodegradable

Sources: 1. World Wildlife Fund UK, 2021. Driven to Waste; 2. Savary et al., 2019. The global burden of pathogens and pests on major food crops. Nat Ecol Evol; 3. Brühl CA & Zaller JG, 2019. Biodiversity Decline as a Consequence of an Inappropriate Environmental Risk Assessment of Pesticides; 4. Phillips-McDougal, 2016. Evolution of the Crop Protection Industry since 1960.

# Global health and climate change

We need better tools to improve global health outcomes as we deal with resource insecurity in the face of climate change

## The problem

Pandemics are happening more often

**3x**

increase infectious disease outbreaks (1980 to 2010)[1]

Limited access to vaccinations and therapeutics innovation in LMICs

In low- and lower-middle-income countries, more than

**1.8B**

remain unvaccinated against Covid[2]

## Existing challenges

**Longer lead times** for preclinical iteration, testing, and scale-up prior to clinical trials[3]

**Large manufacturing footprints**, making it difficult to produce sufficient dosages for LMICs in a cost-effective manner

**Costly mRNA vaccine manufacturing platforms** – Pfizer is currently charging $19.50 per dose of Covid vaccine[4]

## The mRNA advantage

- Rapid lead identification and iteration
- Smaller footprint, lower capital costs, higher productivity per volume compared to other technology platforms

Sources: 1. Smith et al., 2014. Global rise in human infectious disease outbreaks; 2. Our World in Data, July 2022; 3. Adalja et al., 2019. Vaccine Platforms: State of the Field and Looming Challenges, Johns Hopkins. 4. Sagonowsky, 2021. Fierce Pharma.

# Paradigm-shifting companies own their manufacturing IP

Success, historically, builds on invention, control, and acceleration of both manufacturing and product development

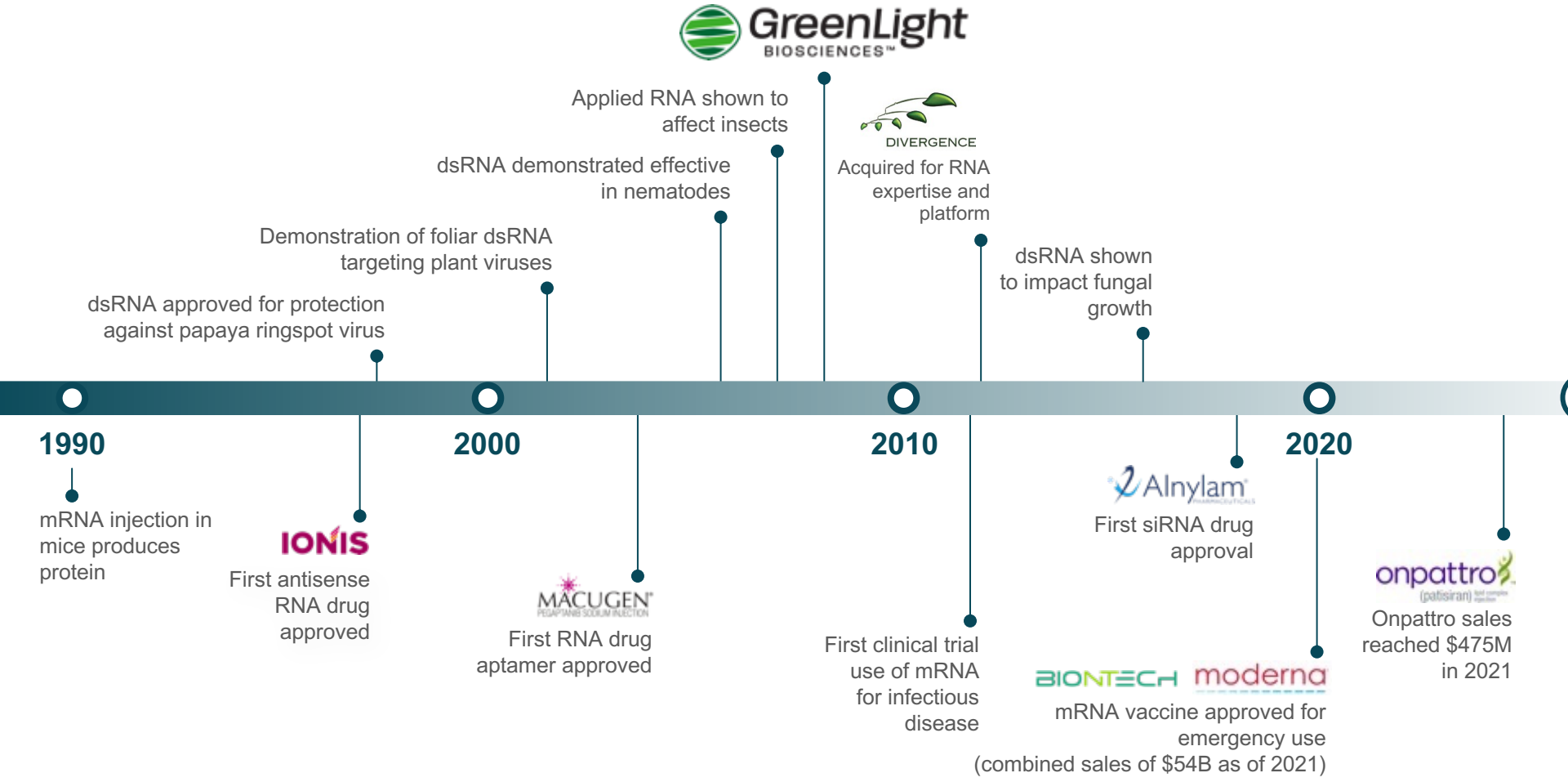
| | | | Protein/Peptide | DNA | RNA |
|---|---|---|---|---|---|
| **Technical innovation** | Interchangeable components | Nanofabrication | Humanization of antibodies (acquired from Immunex) | AAV delivery vectors & proprietary payloads (acquired from various biotech firms) | **dsRNA and mRNA proprietary solutions** |
| **Manufacturing innovation** | Moving assembly line | Automated metrology | Standardized CHO platform | Scaled-up TTT process | **Large-scale integrated manufacturing, cell free bioprocessing** |

| | Ford | intel | AMGEN | NOVARTIS | GreenLight BIOSCIENCES |
|---|---|---|---|---|---|
| Year founded | **1903** | **1968** | **1980** | **1996** | **2008** |
| Market capitalization[1] | **$45.3B** | **$151.2B** | **$125.4B** | **$188.4B** | |

Sources: 1. Market capitalization as of June 17, 2022

# Next RNA solutions supported by three decades of technology development

Advancements in RNA discovery point to key role in the future of human health and food production




GreenLight BIOSCIENCES™

- GreenLight's novel RNA platform can **address agriculture and human health**
- The ability to **quickly develop and scale** RNA-based technologies that we believe will reduce environmental impacts
- GreenLight's manufacturing capabilities will be able to **produce RNA-based medicines cost-effectively** and at scale
- Platform has the potential to help **meet the needs of underserved communities** with low-cost and effective RNA-based medicines

Sources: Kim, Y. 2022. RNA Therapy: Rich history, various applications, and unlimited future prospects. Experimental and Molecular Medicine; Fletcher. SJ et al. 2020. A perspective on RNAi-Based Biopesticides. Front. Plant Sci.; Dalakouras, A. et al. 2020. Genetically Modified Organism-Free RNA Interference: Exogenous Application of RNA molecules in Plants. Plant Physiology

# Pipeline spanning plant, animal, and human health

Projected product launches and multiple clinical milestones through 2026

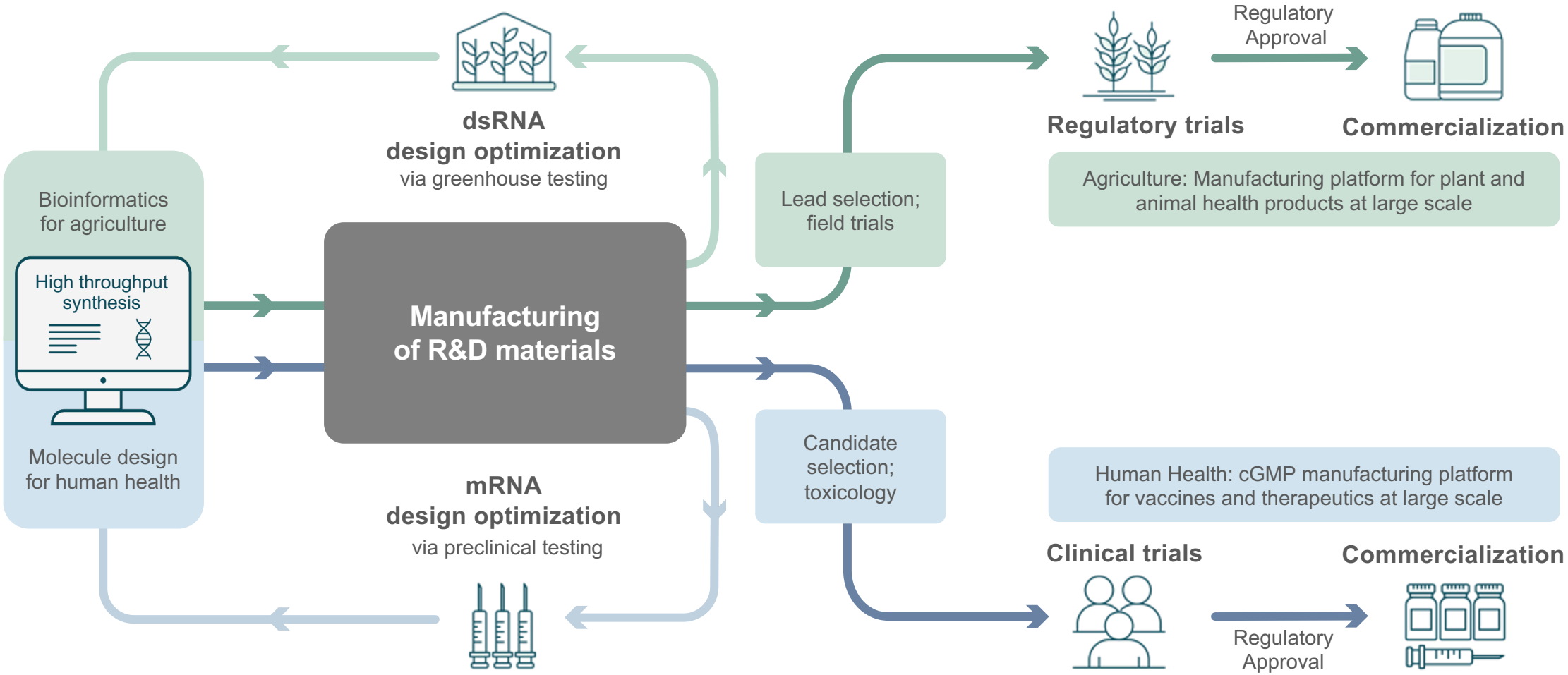
| Plant Health | Program | Planned commercial launch * | Discovery & lab studies | Greenhouse trials | Confirmatory trials | POC field trials | Development & Regulatory |
|---|---|---|---|---|---|---|---|
| | **Colorado Potato Beetle** | 2022 | | | | | |
| | **Varroa Mite** | 2024 | | | | | |
| | **Botrytis** | 2025 | | | | | |
| | **Powdery Mildew** | 2025 | | | | | |
| | **Diamondback Moth** | 2026 | | | | | |
| | **Fusarium** | 2026 | | | | | |
| | **Two Spotted Spider Mite** | 2026 | | | | | |

* Year denotes earliest possible regulatory approval, with sales taking place ahead of the following growing season

| Human Health | Program | Next Milestone | Early Preclinical | Preclinical - Tox | Phase 1 | Phase 2 | Phase 3 | Regulatory submission |
|---|---|---|---|---|---|---|---|---|
| | **COVID-19** | Phase I | | | | | | |
| Vaccines | **Seasonal influenza** | Candidate selection | | | | | | |
| | **Shingles** | Candidate selection | | | | | | |
| Gene therapy | **Sickle Cell Disease** | Proof of concept in mice | | | | | | |

# Platform to support RNA design, development, and manufacturing

Proprietary plant health process creates advantages of skill and experience; human health uses separate manufacturing process



# GreenLight's platform adaptability and scalability validated at Samsung

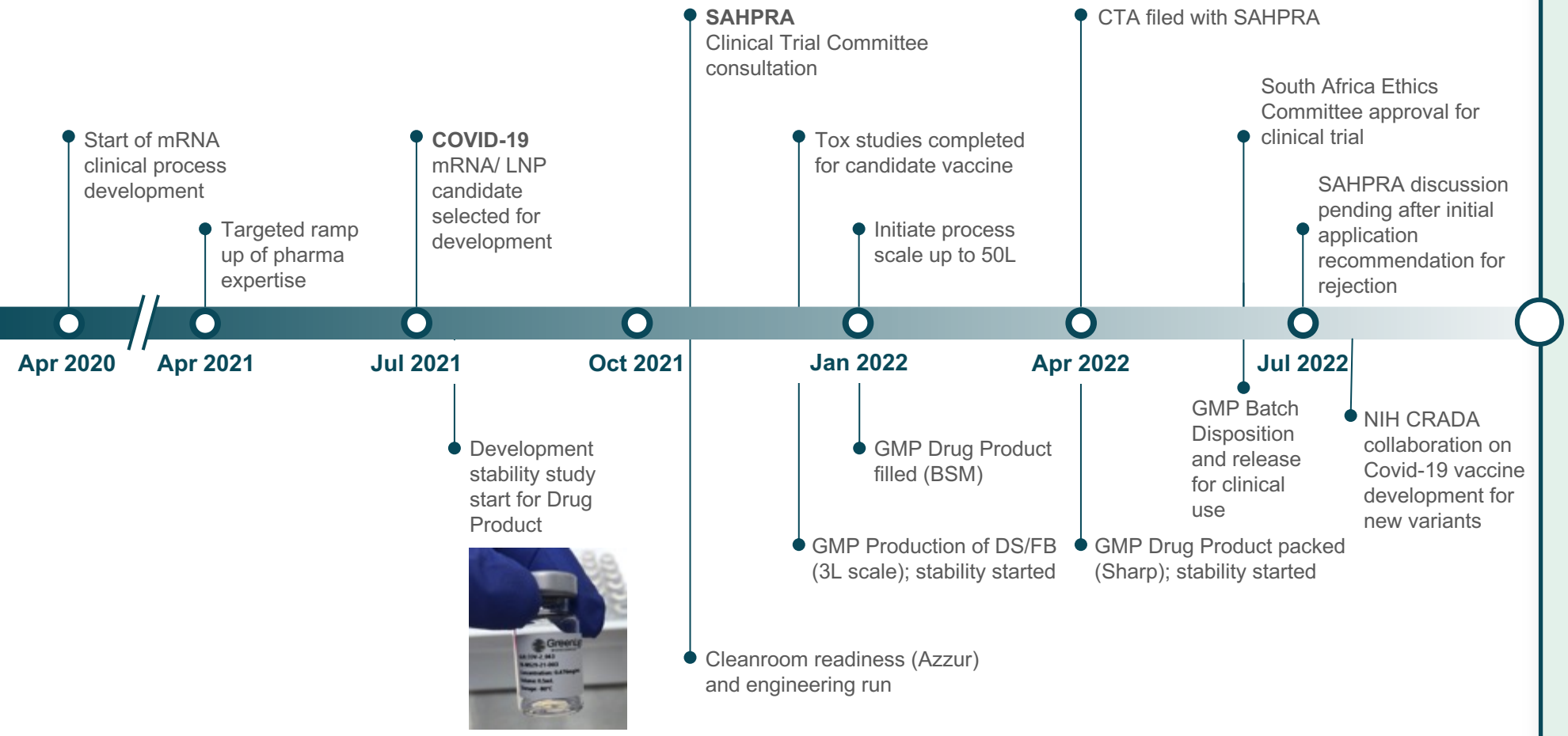
Technology transfer and scale-up from lab bench to commercial facility were completed in 7 months

- Commercial-scale Engineering Run 1 (ER1) successfully completed at Samsung Biologics
- ER1 demonstrated production—in a single facility—of Drug Substance and LNP formulation to produce bulk Drug Product
- Tech transfer and scale-up from lab bench to commercial CMO completed in 7 months, demonstrating adaptability and scalability of GreenLight process
- To date, all data conforms with expected outcomes, indicating successful scale up and fit of GreenLight process to Samsung facility, leveraging existing equipment and infrastructure with no customization required

- **Our mRNA synthesis reaction** had a titer of 12g/L at a commercial scale and produced 650g of mRNA
- **ER2 to start in August**, to implement improvements indicated by first run and to demonstrate repeatability at scale
- Our clinical-scale process shown to be **readily transferable and adaptable** to large-scale equipment and CMO facilities

# GreenLight speed

Operational expertise produced clinical material 18 months after initiation of work




- 2Q2020: GLB leverages knowledge of agricultural dsRNA production; begins development of an mRNA process for human use
- In less than 12 months, GLB has bench scale mRNA production process in hand
- GLB licenses Acquitas' LNP formulation technology
- GLB produces tox material (June) and initiates study in July 2021
- GLB moves people and equipment into leased cleanrooms and produces Phase I Formulated Bulk Drug Product (encapsulated mRNA) in less than three months (December)
- Fill/Finish (January) and label/pack (April) at CMOs
- 2Q2022: Batch dispositioned and released for distribution to clinics (June)

# Exceptional team with diverse public company expertise

Our management team has a proven track record of success

Andrey J. Zarur, Ph.D.
**CEO**

Susan Keefe, MBA
**CFO**

Carole Cobb, MBA
**COO**

Amin Khan, Ph.D.
**Chief Scientific Officer, Human Health**

Mark Singleton, Ph.D.
**CCO & GM, Plant Health**

Drew Cunningham, Ph.D.
**CTO**

Charu Manocha, MBA
**CPO**

Marta Ortega-Valle, MBA
**CBO, Human Health**

Thomas Crampton
**SVP & Head Corporate Affairs**

David Kennedy
**General Counsel**

**15**
Companies founded

**8**
Companies taken public

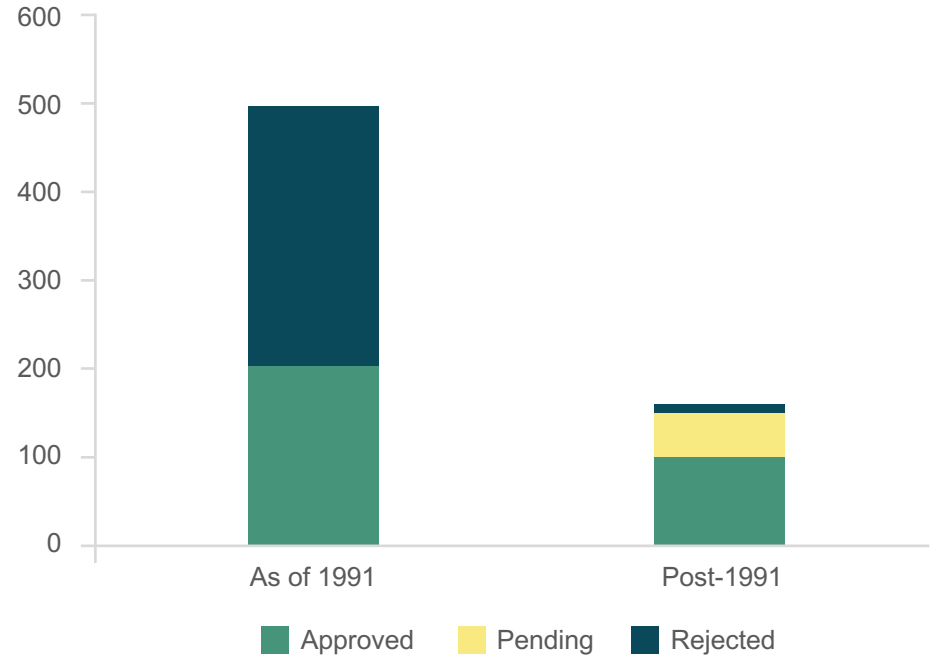
**100+**
Years of public company experience

# Plant and animal health

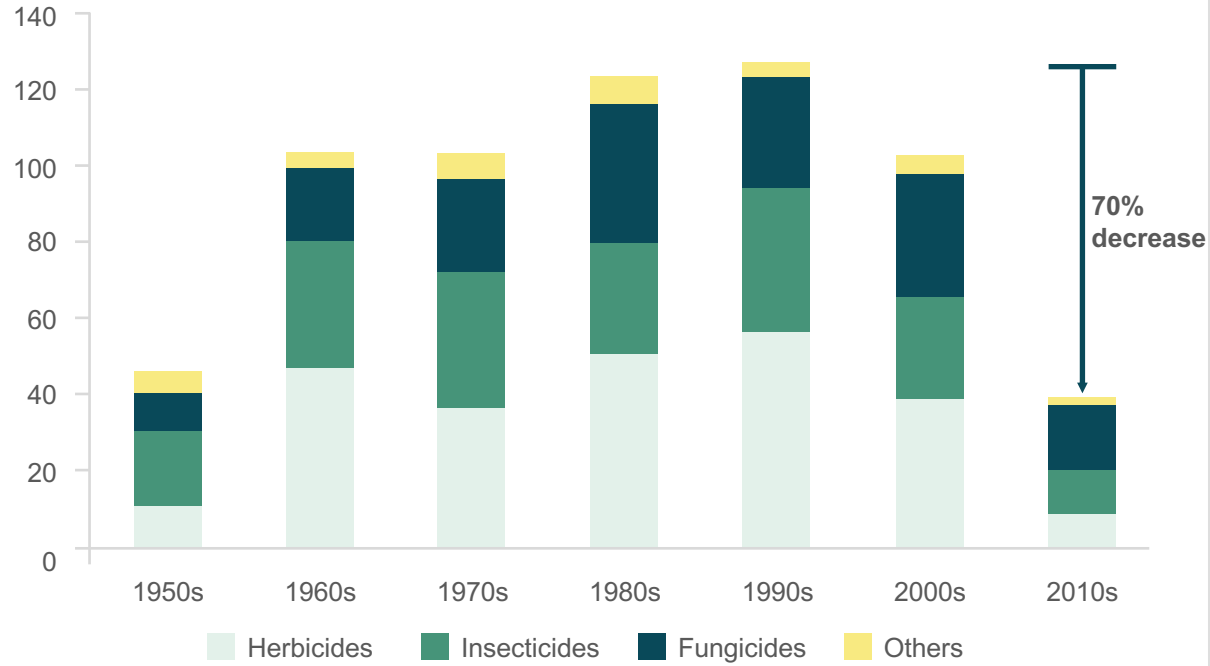
# Farmers are losing crop-protection tools faster than they are being replaced

EU re-registration process led to removal of the majority of existing actives; innovation has declined by 70% since the 1990s

**Tightening EU regulation (1991) resulted in 59% of crop-protection products being removed from the market and continues to limit new product registration[1]**




**Number of new active ingredients introduced per decade: 1950s to present day[1]**




Source: 1. Philips-McDougall, 2018. Evolution of the crop protection industry since 1960.

# Comparing our innovation to agricultural incumbents

GreenLight's design and development platform has enabled the creation of actives against a range of diverse crop targets

| GreenLight BIOSCIENCES™ | syngenta | BAYER |
|---|---|---|
| **7** new active launches expected by 2026 | **6** actives by 2026[2] | **4** actives to launch by 2024[4] |
| **R&D Budgets** | | |
| **$90M**[1] | **$1.4B**[3] | **$2B**[4] |

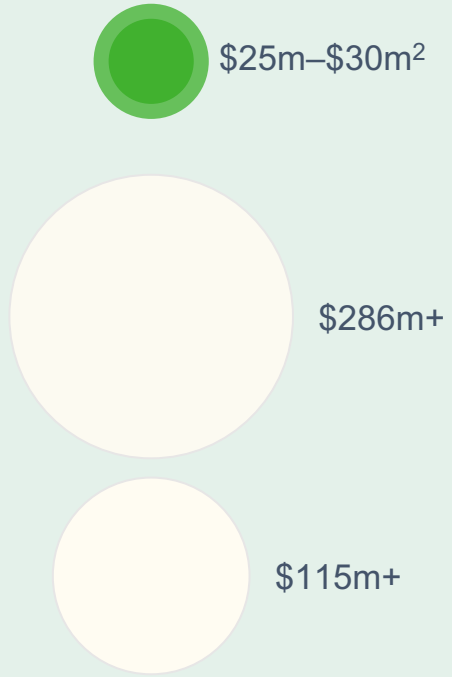
Sources: 1. Reflects total R&D spend across GreenLight, including Human Health, Agriculture and platform, for the year ended December 31, 2021. 2. AgriBusiness Global. 2020. Syngenta Pipeline: Developing Innovative Products That Answer Farmer Challenges; 3. https://www.syngenta-us.com/thrive/research/step-changes.html; 4. 2021 Bayer Annual Report

# RNA performs well compared to agricultural alternatives

RNA solutions can be faster and cheaper to develop and deploy, easier to use, with greater consumer acceptability[1]

## Years required to develop and commercialize


## Development cost




Source: 1,2. Based on GreenLight's internal calculations 3. OECD Environment, Health and Safety Publications Series on Pesticides No. 104, 2020. ; 4. Philips-McDougall, 2018. Evolution of the crop protection industry since 1960.

# GreenLight is targeting some of food security's greatest challenges

Our global product portfolio can address key food and agriculture industry concerns

By 2050

**34%**

increase in population

**70%**

increase in food production needed[1]


By 2026

**7**

Product launches expected

**$6B**

2026E Addressable markets

Year denotes earliest possible regulatory approval, with sales taking place ahead of the following growing season
Sources: Food and Agriculture Organization of the United Nations, 2009.

Case study: GreenLight is working to help farmers

# Protect potatoes

RNA solution using foliar application; expected EPA approval this year; sales taking place ahead of the following growing season

**The problem:** Colorado potato beetle causes hundreds of millions[1] of damage a year and develops rapid resistance.

## The solution:

### Calantha ™

- On track to be cost competitive to other premium solutions
- Compatible with farmers' standard operating procedures
- Low risk for operators and consumers
- Low to no detectable residue

CPB has a long history of resistance development and has documented insensitivity to 54 different active ingredients in nearly all existing insecticide MoA groups.[2,3]

**Potato fields protected in 2020 field trials**

| Untreated, 30 days | 9.9 g of GreenLight RNA per hectare |
|---|---|


Sources: 1. Science Daily, 2020; 2. Alyokhin, A et al. 2008a. Colorado potato beetle resistance to insecticides. Am. J. Potato Res; 3. Whalon M. 2013. Arthropod pesticide resistance database

Case study: GreenLight is working to help beekeepers

# Protect honeybees

Proprietary solution testing in field trials; EPA submission planned this year

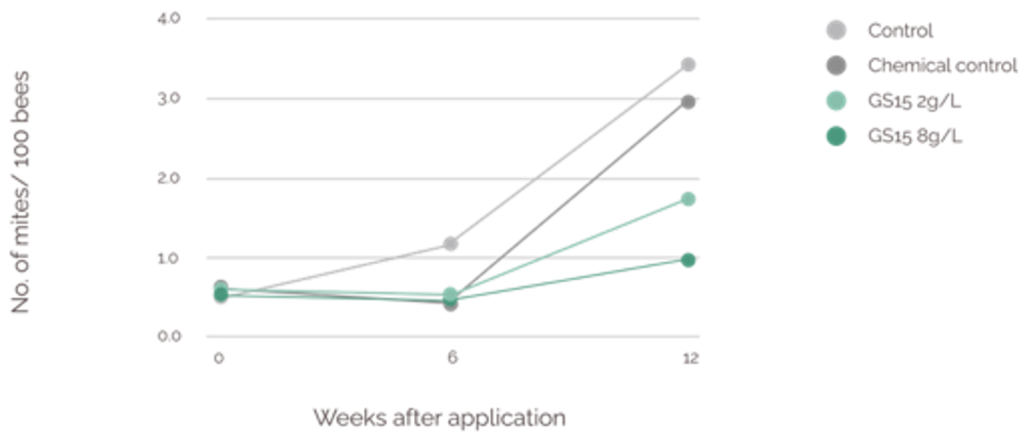
**The problem:** Honeybee colonies in the United States alone contribute to pollinating more than 100 crops annually worth an estimated $18 billion[1]. But these colonies have been significantly threatened and diminished in the last decade or so by the *Varroa destructor* mite, which beekeepers worldwide say is the number one threat and can decimate whole colonies rapidly.

## The solution:

## Targeting Varroa mites

- GreenLight acquired Bayer's topical RNA intellectual property portfolio, which includes bee-health assets
- We combined that with our technology to develop an RNA-based treatment to combat the parasitic mites
- First field trials took place 4 months after after acquisition. We plan to launch it in 2024

**40% fewer Varroa mites in field trials at 12 weeks in hives with GS15, compared with leading chemical control product**




Source: 1. United States Department of Agriculture, 2021.

Case study: GreenLight is working to help farmers

# Reduce crop loss caused by fungal pathogens

**The problem:** Fungal pathogens account for 30% of crop losses globally[1]–enough to feed 600 million people[2].

## Botrytis cinerea

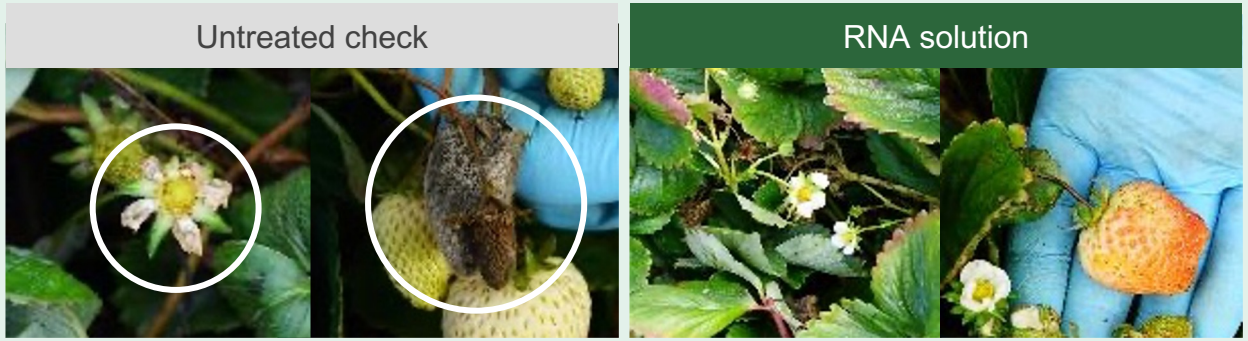
- Causes disease in more than 500 species of plants grown worldwide[3]
- It can result in up to 30% yield loss in fresh fruits and vegetables[4]
- Attacks food both in the field as well as after harvest
- Victims of botrytis include soft fruit such as strawberries and grapes, as well as onions, tomatoes, sweet potatoes, and other food crops

## The solution:

Current strategies involve frequent spraying of these crops with traditional chemical-based pesticides, leaving significant residues.

**GreenLight is developing an RNA anti-fungal solution that has undergone initial field trials in the U.S. and Europe.**

Our testing shows a reduction in disease severity compared to untreated plants. We anticipate this product will be available in-season earliest 2026.




Sources: 1. Savary et al., 2019. The global burden of pathogens and pests on major food crops. Nat Ecol Evol; 2. Davies et. al., 2021. Evolving challenges and strategies for fungal control in the food supply chain, Fungal Biology Reviews; 3. Li Hua et. al., 2018. Pathogenic mechanisms and control strategies of *Botrytis cinerea* causing post-harvest decay in fruits and vegetables, Food Quality and Safety; 4. Dalphy O.C. Harteveld, Tobin L. Peever, Department of Plant Pathology, Washington State University

Case study: GreenLight is working to help farmers

# Manage plant diseases caused by Fusarium

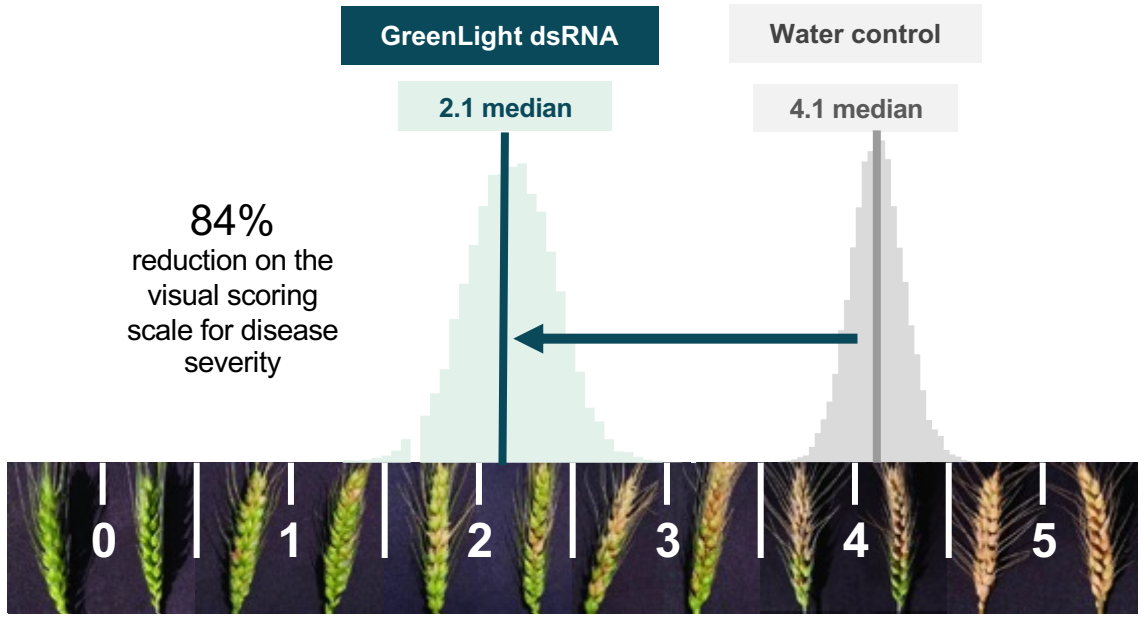
**The problem:** Fusarium cause crop loss and food waste globally, damaging grain and secreting mycotoxins harmful to humans and animals, resulting in losses of $5.6 billion[1]. In severe disease years, Fusarium head blight can cause an estimated $1 billion in damages in the US alone.[2]

## The solution:

## Stackable dsRNA solutions for controlling Fusarium

- GreenLight leads aim to control mycotoxin production and reduce Fusarium growth
- **Lead sequences** suppress Fusarium head blight disease severity in wheat, reducing visual disease scale ratings from a median of 4.1 to a median of 2.1
- Under greenhouse conditions, GreenLight's dsRNA gives an average of 84% reduction in disease severity

## Greenhouse results compared to untreated controls




Source: 1. Wang, H. et al. 2020. Horizontal gene transfer of Fhb7 from fungus underlies Fusarium head blight resistance in wheat. 2. Powell AJ, Vujanovic V., 2021. Evolution of Fusarium Head Blight Management in Wheat. Applied Sciences.

# Rapid discovery helps address emerging climate-driven farmer pain points

Pipeline stretches from protecting honeybees to fresh produce and large-scale crops, a $10bn addressable market

| Program | Phase 1a | | Phase 1b | Phase 2 | Phases 3 & 4 | Launch year * | TAM ($M) |
|---|---|---|---|---|---|---|---|
| | Discovery & lab studies | Greenhouse trials | Confirmatory trials | POC field trials | Regulatory submission | | |
| Colorado Potato Beetle | | | | | | 2022 | $350 |
| Varroa Mite | | | | | | 2024 | $290 |
| Botrytis | | | | | | 2025 | $1200 |
| Powdery Mildew | | | | | | 2025 | $1400 |
| Diamondback Moth | | | | | | 2026 | $890 |
| Fusarium | | | | | | 2026 | $950 |
| Two Spotted Spider Mite | | | | | | 2026 | $1100 |
| Fall armyworm | | | | | | 2027 | $1900 |
| Pollen beetle | | | | | | 2028 | $185 |

* Year denotes earliest possible regulatory approval, with sales taking place ahead of the following growing season

**Total** **$8bn**

A selection of additional targets in the early discovery and lab study phase include:

**Asian soybean rust**
Soybeans

**Black sigatoka**
Bananas

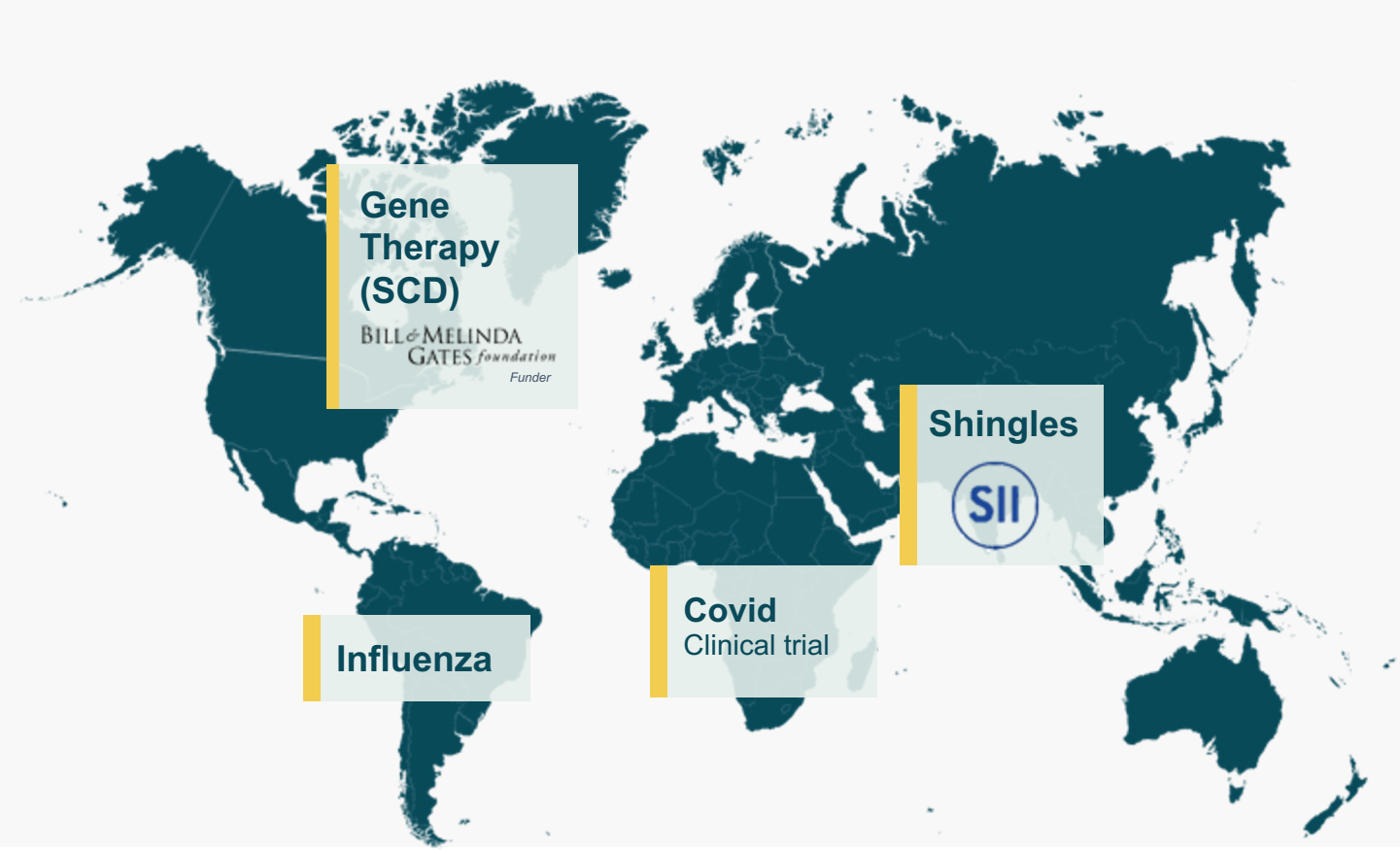
**Rice Blast**
Rice

**Vine downy mildew**
Grapes

# Human health

# GreenLight is targeting global human health challenges

mRNA design flexibility coupled with our production capability can enable rapid development of vaccines and therapies




**1**
Gene therapy program

**3**
Vaccine programs

**$36B**
pre-Covid vaccine market + gene therapy market (*)

## GreenLight Human Health pipeline progression

- Partnership with **Serum institute of India** for **shingles vaccine**
- Partnership with **Samsung Biologics** for mRNA manufacturing
- Commercial mRNA manufacturing engineering runs scheduled in 2022

Dates denote anticipated clinical development start date

(*) Sources: World Health Organization and MI4A, "Global Vaccine Market Report," (2020); Grandview Research: “Gene Therapy Market Size, Share & Trends Analysis Report, 2021 – 2028”

Case study:

# Covid vaccines for the rest of the world

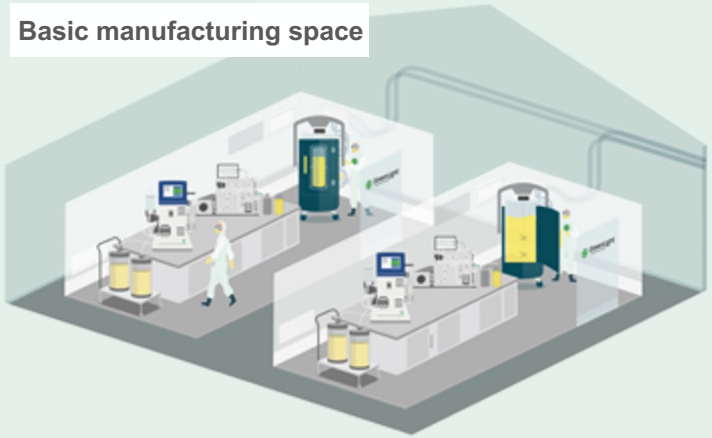
The world needs more timely and accessible vaccines and therapeutics

**We believe our designs allow for a production capacity of**

**250-500 million**

doses per year per line

**Basic manufacturing space**



Modular GMP manufacturing units can be set up within existing facilities and are designed for quick setup and production to enable scaling globally

**GreenLight's Covid-19 vaccine candidate has strong preclinical performance**
Comparable preclinical performance to other mRNA vaccines

| Company | Mouse Neutralizing Ab Titer | CD4 Response | CD8 Response |
|---|---|---|---|
| GreenLight Biosciences | ~ **130,000** at 5µg dose<br>Assay : Clinical Isolate | • Th1-bias<br>• 1.5 – 3.5% of CD4 T cells producing cytokines<br>• Very little Th2 cytokines by ELISA | 5 – 12.5% of CD8 T cells responding to restimulation by flow cytometry |
| BioNTech / Pfizer | ~ **300** at 5µg dose<br>Assay : Pseudovirus[1] | • Th1-bias<br>• Used ELISpot, not easily compared to flow cytometry<br>• Very little Th2 cytokines by ELISA | Used a different flow cytometry assay, difficult to compare results |
| moderna | ~ **5,000** at 1µg dose<br>Assay : Pseudovirus[2] | • Th1-bias<br>• 0.1 – 0.2% of CD4 T cells producing cytokines<br>• No ELISA data | 0.5 – 1.25% of CD8 T cells responding to restimulation by flow cytometry |

Sources: 1. Annette B. Vogel, et al., 2021. Nature volume 592, pg 283–289; 2. DiPiazza et al., 2021, Immunity 54, 1869–1882.

Case study:

# Shingles vaccine, a global addressable market to reach $6.35B by 2028[1]

GreenLight is designing a messenger RNA vaccine for shingles for Serum Institute of India

**The problem:**

**95%**

of individuals globally older than 50 years of age have prior exposure to the virus that causes shingles[2]

**50%**

is the lifetime risk of developing shingles for individuals who live to 85 years old without vaccination[2]

**The solution:**

The world's largest vaccine manufacturer, Serum Institute of India, chose GreenLight as its partner for Serum's first mRNA vaccine, targeting shingles.

**GreenLight will:**

- work to discover and design a messenger RNA-based vaccine candidate
- transfer its existing clinical-scale manufacturing process to Serum Institute's facility in India

**Serum will take on:**

- clinical development and manufacturing
- commercialization in emerging markets, including Africa, Latin America, the Middle East, and much of Asia

Source: 1. Businesswire, 2022; 2. Pan CX et. al., 2022. Global herpes zoster incidence, burden of disease, and vaccine availability: a narrative review

Case study:

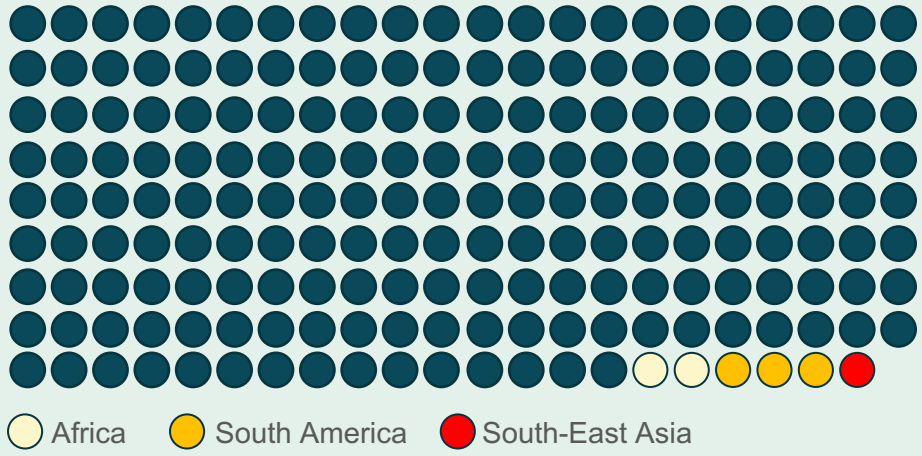
# Genetic disorders

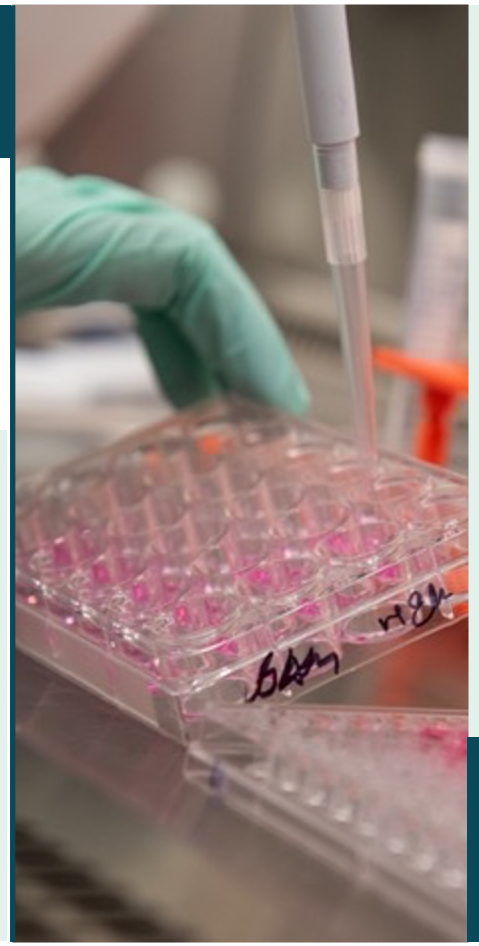
GreenLight is building the tools to enable mRNA-mediated gene therapy

**The problem:** LMICs are excluded from gene-therapy innovation development

Of 179 recruiting or near-recruiting clinical trials for gene therapies, only:

- 2 trials were open in Africa
- 3 in South America
- 1 in South-East Asia[1]



**The solution:**

**GreenLight gene-therapy architecture is working to target solutions that:**

- Enable modification of nondividing cells
- Do not require viral vectors
- Are delivered direct to the patient
- Can be manufactured at scale at or near site of use

Approved gene-therapy treatments cost between $373K to $2.1M USD, making them **inaccessible to LMICs**[2]

Sources: 1. Cornetta, K. et al., *2018. Mol Ther*; 2. Adair, J. E.., et al., 2021. *Gene Ther.*

Case study:

# Gene therapy for sickle cell disease

GreenLight is building tools to enable mRNA-mediated gene therapy

## The problem:

Sickle cell disease has no cure and is prevalent in people of African and Middle Eastern descent. Current treatment regimens are costly, invasive, and impractical for treating large segments of affected patient populations, especially in low-income countries.

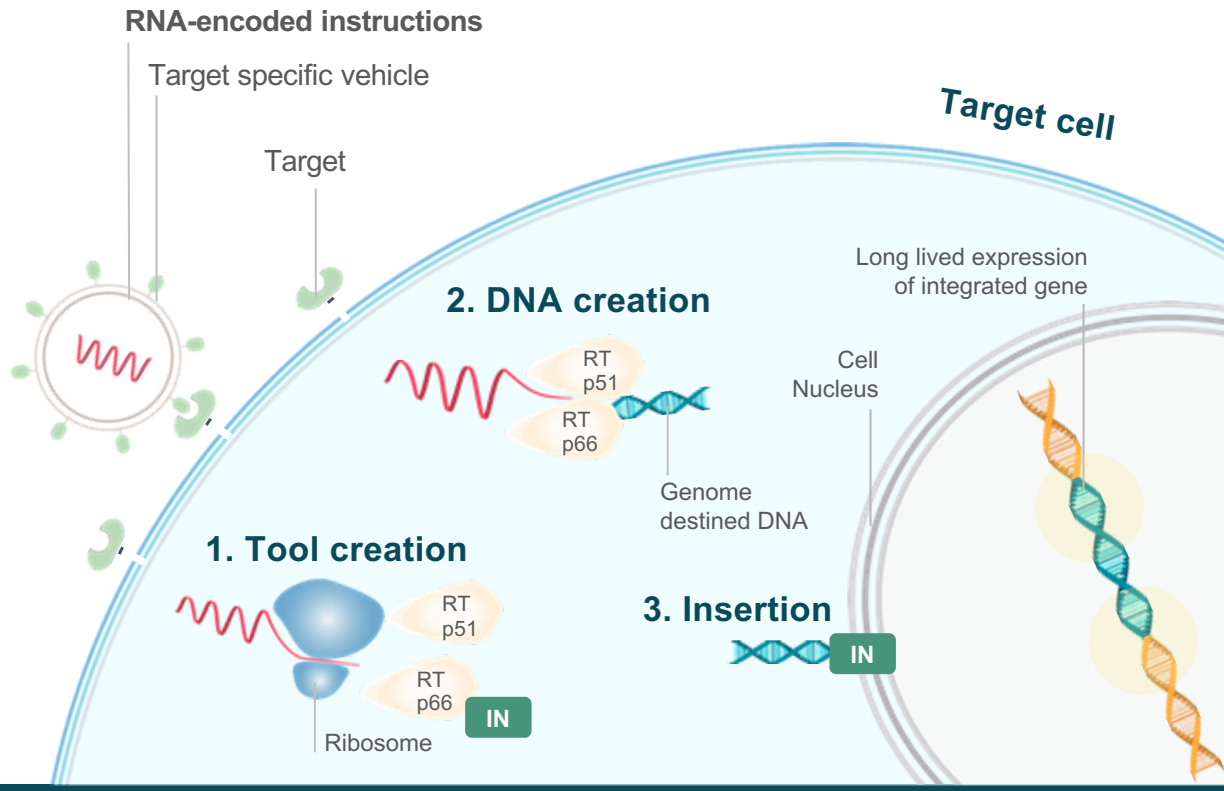
## The solution:

**GreenLight gene-therapy architecture targets potential solutions that:**

- Can edit dividing and nondividing cells
- Do not require viral vectors
- Achieves long-lasting effect
- Are delivered direct to the patient
- Can be manufactured at scale

## Two classes of RNA molecules with distinct purposes

Potential mechanism for our gene therapy architecture




Sources: G. J. Kato., Nature Reviews Disease Primers (2018)

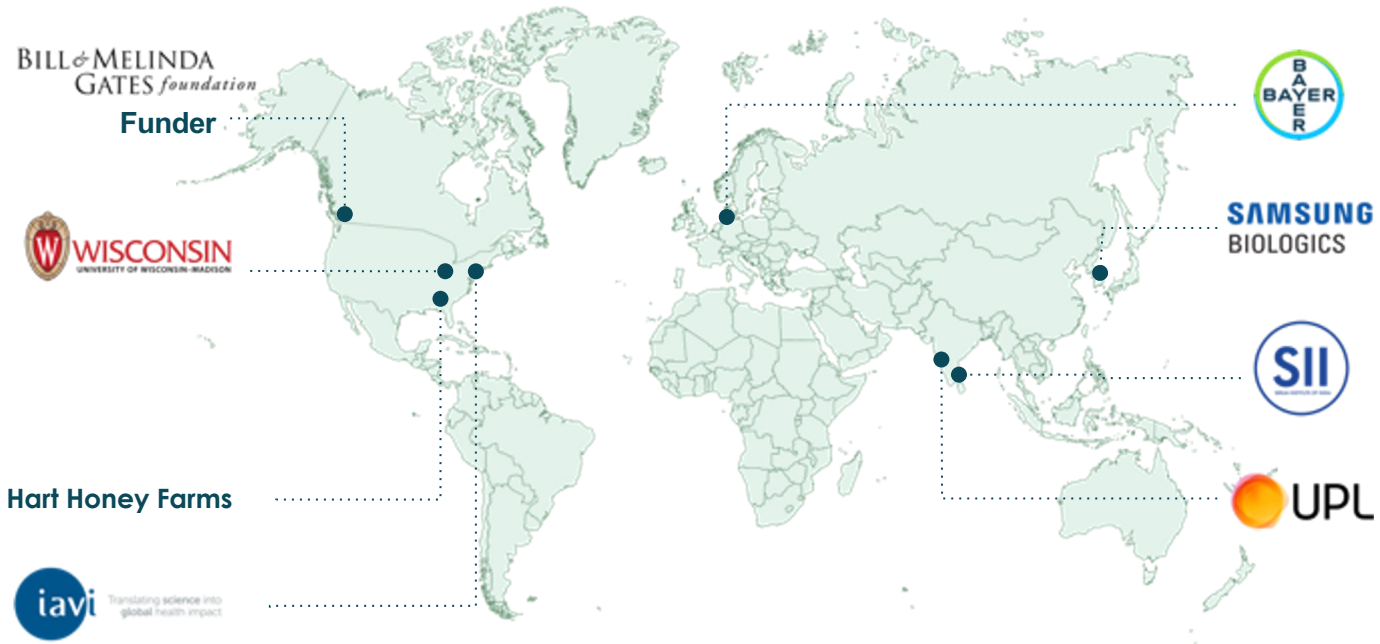
# An expanding Human Health pipeline

Our design and manufacturing capabilities enable development of vaccines and therapies

| Application | Program | Collaborator | Early pre-clinical | Pre-clinical | Toxicity | Clinical Development Phase 1 \| Phase 2 \| Phase 3 |
|---|---|---|---|---|---|---|
| Vaccine | SARS-CoV-2 (Covid-19) | iavi | | | | |
| Vaccine | Seasonal influenza | Academic Partner | | | | |
| Vaccine | Shingles | Serum Institute of India | | | | |
| Antibody therapy | Antibody (Undisclosed) | Academic Partner | | | | |
| Gene therapy | Sickle Cell Disease | Bill & Melinda Gates foundation (Funder) | | | | |

# World-leading partnerships

We work together from the beginning of the R&D process to serve the medical needs of LMICs and address local needs




- **Serum Institute of India** has engaged us to design three messenger RNA products, including a vaccine for shingles, with an option for two additional vaccine or therapeutic targets aimed at accelerating accessibility in emerging markets.
- **Samsung Biologics** will manufacture our messenger RNA Covid-19 vaccine candidate at a commercial scale.
- **IAVI,** a nonprofit scientific research organization, will partner with GreenLight to enter into a COVID-19 Phase 1 clinical trial in sub-Saharan Africa.
- **Bill & Melinda Gates Foundation** milestone to develop a gene therapy for treatment of sickle cell anemia was achieved in 2021 and we are moving to the next phase of gene-therapy research.

# Greenlight Biosciences: healthy people and planet through RNA innovation

Raising to provide capital to execute on upcoming value-creation milestones

## Plant Health

- Calantha™ registration with EPA (H2 2022)
- Commercial launch of Calantha™, first foliar dsRNA product (Q4 2022)
- Regulatory submission on varroa mite control for bees with EPA (Q4 2022)
- Regulatory studies underway for Powdery Mildew and Botrytis (H2 2023)

## Human Health

- Covid-19 Phase 1 clinical-trial data (2023)
- Shingles candidate selected with Serum Institute of India (H1 2023)
- NIH collaboration for next-generation Covid vaccine candidate selected and ready for toxicological studies (H2 2023)

Additional funds will enable further milestones across plant health and human health programs. GreenLight intends to concurrently seek partnerships and nondilutive capital to enable additional milestones.

# Promoting environmental and global health through RNA innovation

We are committed to ESG responsibilities and to measuring our impact profitably, sustainably, and equitably

## Platform

Manufacturing technology that enables the cost of RNA active ingredient for agriculture at a commercial-scale plant to be **less than $1/gram**

Manufacturing plant can produce **500 kg of RNA** for agricultural uses per year. [1]

## Agriculture

Diversified RNA-based pipeline with **7 agricultural product launches** planned between 2022 and 2026

Expected 2022 **EPA approval** for foliar-applied RNA pesticide, protecting against Colorado potato beetle

## Human Health

Preparing for Covid-19 vaccine **Phase 1** clinical trial in South Africa

Samsung Biologics will manufacture our messenger RNA Covid-19 vaccine candidate at a **50-liter scale**

As a **public benefit corporation**, we are structured and governed to focus on our community, employees, partners, and society generally, as well as shareholders. Underlying everything we do as a publicly traded public benefit corporation is a commitment to **Environmental, Social, and Governance** responsibilities.


**GreenLight supports the United Nations' Sustainable Development Goals (SDGs), and our work aligns to goals 2, 3, 5, 9, 12, 15, and 17.** [2]

Sources: 1. 500 kg is sufficient to treat more than 50,000 hectares of potato fields at our current field trial dosage of 9.9 g/hectare of Calantha™.; 2. SDGs, United Nations

# Thank you



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# Appendix



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## Risk Factors: Please see GreenLight's SEC filings at the URL on page 3 of this presentation for a complete list of risk factors. In addition, please see the risk factors below.

We have incurred significant operating losses since inception. Our ability to generate product revenue sufficient to achieve profitability will depend heavily on the successful development and eventual commercialization of one or more of our current or future product candidates. We expect to continue to incur significant expenses and increasing operating losses and do not expect that we will be able to fund our longer-term capital and liquidity needs through our current cash balances, operating cash flow or fundraising efforts, including this private placement, alone. As of June 30, 2022, we held approximately $44.1 million in cash and cash equivalents and had incurred operating expenses of approximately $94.8 million in the six months prior to June 30, 2022. We continue to evaluate a range of opportunities to extend cash runway, including management of program spending, platform licensing collaborations and potential financing activities and believe that operating expenses will be approximately $10 million per month beginning in the fourth quarter of 2022 and we anticipate that monthly expenses will continue at this rate for the foreseeable future in order to execute our business plan. If we fail to raise capital, including in this private placement and additional capital raising thereafter, we may have to significantly delay, scale back, or discontinue the development and commercialization of one or more of our product candidates and delay or suspend or cease operations. We anticipate that our expenses and capital requirements may increase substantially particularly if and as we:

- conduct clinical trials for our human health product candidates, particularly considering the possibility that regulators will no longer grant Emergency Use Authorizations for COVID-19 vaccines or the possibility of multiple clinical trials for our COVID-19 vaccine candidate that could be required considering our first Clinical Trials Application (“CTA”) for our COVID-19 vaccine in South Africa has been denied and will at best be delayed;
- expand either the acreage or duration of field trials for our plant health candidate products as a result of regulatory requests;
- continue to develop additional product candidates;
- maintain, expand, and protect our intellectual property portfolio;
- hire additional clinical, scientific manufacturing and commercial personnel or incur restructuring costs associated with the departure of personnel or the cessation of current business activities;
- expand external and/or establish internal commercial manufacturing sources and secure supply chain capacity sufficient to provide commercial quantities of any product candidates for which we may obtain regulatory approval;
- acquire or in-license other product candidates and technologies;
- establish a sales, marketing, and distribution infrastructure to commercialize any products for which we may obtain regulatory approval; and
- add operational, financial and management information systems and personnel to support our product development, clinical execution and planned future commercialization efforts, as well as to support our operations as a public company.

Financial amounts presented above are estimates, have not been audited and are subject to change before publication in GreenLight’s 10-Q for the six months ended June 30, 2022 and any such changes could be material.

# GreenLight at work

## ROCHESTER, NY

Pilot plant for our agriculture products. Will also support initial commercialization of earliest products once approved

## RESEARCH TRIANGLE PARK, NC

Plant health discovery, research, field development, regulatory, product development


## WOBURN, MA

Human health discovery, research, clinical development

## MEDFORD, MA

- Corporate
- Platform technology (bioinformatics, RNA production technology, sample production)
- CMC

## LEXINGTON, MA

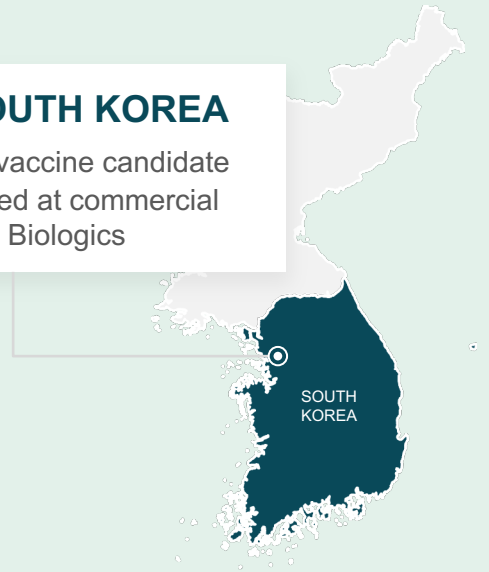
- State-of the-art RNA facility
- Relocating CMC team and early phase GMP clean room in summer 2022

## SEVILLE, SPAIN

Field research station to accelerate transition of research and discovery compounds


## INCHEON, SOUTH KOREA

Our mRNA Covid vaccine candidate will be manufactured at commercial scale by Samsung Biologics



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