

UPDATE

Enochian BioSciences: At the Cutting Edge

“The future of Biotech is disruptive science from unconventional sources”

Dr. Mark Dybul, CEO

To: Shareholders of Enochian BioSciences
From: The Hon. Dr. Mark Dybul
Subject: Update
Date: January 24, 2022

The past decades in technology, currencies (e.g., Blockchain and Cryptocurrency) and other rapidly advancing fields have been driven by **disruptive, brilliant creativity combined with exacting execution regardless of educational pedigree, country of origin or rigid disciplinary boundaries and rules. Biotech lags behind.** It is too often **constrained by traditional diplomas, methodologies, and dogmas.** Academic scientific inquiry is essential and lays the foundation for long-term advancement. Biotech is rooted in science but can – and must – focus on disruptive ideas from any source that can more rapidly help solve major global diseases and save and lift up as many lives as possible. We must loosen the ties that bind, while preserving the fundamentals of basic scientific progress.

Enochian BioSciences’ underlying scientific ideas are innovative with an elegant simplicity that is often the hallmark of groundbreaking advances. And we are working to push through systems and barriers to translate those disruptive ideas into potential products that could save many lives.

Remarkable Progress

Enochian BioSciences was *founded on a single idea* to potentially cure HIV. **In a little more than three years, Enochian has initiated development of two platforms** with potential products from several **infectious diseases and cancers** that kill millions of people worldwide every year.

In summary, there is the **potential for up to four human trials to begin enrollment in 2022.**

Hijack RNA Platform

The innovative approach tricks viruses to use proteins need to reproduce to trigger cells to commit suicide – taking the virus down with them. Already, we have demonstrated effectiveness and reached some key benchmarks:

-A potential cure for **Hepatitis B Virus** with promising *in vitro* and *in vivo* results; **FDA Pre-IND completed with clear path to IND and potential for human studies to begin enrollment by the end of the year;**

-A potential inhaled treatment that is designed to kill cells harboring virus in nose, mouth and lungs that could **both limit illness in the infected person and spread to others** for all variants of **SARS-Coronaviruses, including those that cause COVID-19.** It could also potentially be used to prevent infection for 6 months or longer, with promising *in vitro* and *in vivo* results; **potential for IND and for human studies to begin enrollment during the Summer of 2022;**

-A potential inhaled treatment that is designed to kill cells harboring virus in the nose, mouth and lungs that could potentially **both limit illness in the infected person and spread to others**. It could also potentially be used to prevent infection for 6 months or longer, with promising *in vitro* data and potential to be active against any variant of Influenza; **potential for IND and for human studies to begin in 2023**;

-An inhaled product combining potential treatment and prophylaxis for SARS-Coronaviruses and Influenza viruses; the vector has been designed;

-A vector for HIV has been developed and will enter testing in the near term.

It is important to emphasize that this novel platform has shown promising results across several very different viruses, suggesting the soundness of the underlying science.

Allogeneic Cell Therapy Platform

The human immune system is designed to recognize and destroy “otherness”, including something that does not belong in our healthy cells (e.g., viruses and cancer.) The most powerful response of the immune system is to cells from another human being (allogeneic.) Several of our technologies take advantage of this otherness to hyper stimulate a person’s immune response to better attack a chronic infection (e.g., HIV) or solid tumors. IN certain pipelines (e.g., HIV and Cancer), cells taken from another person are sometimes genetically modified to further boost the immune system to seek and kill diseases.

-Two HIV potential cures or therapies that could allow persons living with HIV (PLWH) to control the virus after stopping costly, daily treatment by hyper stimulating an immune response. With a one-time treatment with one of the approaches, a single person was able to control HIV for a year – levels lower than he was able to reach with antiviral medication. He resumed treatment at that time, the final research endpoint of the study.

An Investigator Initiated Pre-IND has been completed. A potential IND and enrollment in human trials could begin this Summer.

-The second HIV approach is in trials in monkeys with preliminary data potentially in 2022.

-A novel approach to genetically modify allogeneic Dendritic Cells (DC), which orchestrate the immune system, to hyper-stimulate the immune system has shown promising results *in vitro*. A case report has been published of a person with recurrent glioblastoma who is tumor-free two years after receiving a single dose of allogeneic Natural Killer cells and non-genetically modified DC. Enochian BioSciences’ approach could potentially be more potent. *In vivo* studies of the approach in pancreatic cancer are beginning in near term. If those experiments are successful, there is the potential for human trials to begin enrollment in 2022.

Enochian BioSciences’ Deep Bench of Leading Scientists and Collaborators and Advisors

While the ideas behind Enochian BioSciences’ pipeline come from the inventor, Dr. Serhat Gumrukçu, the pivotal experiments, in particular the *in vivo* studies, are conducted independently by some of the leading scientists and Clinical Research Organizations used by NIH and large pharmaceutical companies including for FDA approvals.

In addition, Enochian BioSciences has assembled leading basic science and clinical researchers as members of Scientific Advisory Boards (SAB) for HIV, Hepatitis B Virus and Respiratory Diseases (SARS-Coronavirus and Influenza). The SAB review, interrogate and provide advice on scientific results, as well as experimental and regulatory plans.

The approach to have leading scientists and clinical researchers to conduct key experiments and as SAB members is an intentional approach executed by Enochian BioSciences' management to maximally ensure the integrity and validity of the science.

A full list of scientific collaborators and SAB members can be found at:

[Link to Collaborators](#)

[Link to HIV SAB Members](#)

[Link to HBV SAB Members](#)

[Link to Respiratory Diseases SAB Members](#)

Commitment to Transparency

Scientific Presentations

In just more than three years, sufficient scientific data have been collected to have **8 submissions accepted by review panels for presentation at prestigious conferences** including the Conference on Retroviruses and Opportunistic Infections (CROI), the World Congress of Vaccines, the American Society of Gene and Cell Therapy (ASGCT) and HEP DART.

Every active pipeline has been presented including **details on the mechanism of action**, i.e., the way the potential products work. The underlying science has also driven the interest among leading scientists and clinical researchers to conduct pivotal studies and participate in SAB.

[Link to World Vaccine & Immunotherapy Congress 2021 Presentation](#)

[Link to International Liver Conference 2021 Presentation](#)

[Link to CROI 2021 Conference Presentation](#)

[Link to ASGCT 2020 Conference-Influenza Presentation](#)

[Link to ASGCT 2020 Conference - Syngeneic Mouse Presentation](#)

[Link to ASGCT 2020 Conference - In Vitro Chemo Selection Presentation](#)

[Link to ASGCT 2020 Conference - HBV Presentation](#)

[Link to HEP DART 2019 Conference Presentation](#)

Dr. Anahid Jewett, PhD, MPH, Professor and Director of Tumor Immunology laboratory in the Division of Oral Biology and Medicine, and Wintraub Center for reconstructive biotechnology at UCLA School of Medicine and Dentistry. She has membership in Johnsson Comprehensive Cancer Center (JCCC) and is a member of UCLA Tumor Immunology subgroup

“This exciting clinical finding, as well as many other directions for therapy which Enochian BioSciences is currently undertaking to develop related approaches, gives hope for the possibility of effective treatment for pancreatic cancer and other solid tumors in the future.” [Link to Press Release](#)

Dr. Anna Suk-Fong Lok, MD, Alice Lohrman Andrews Research Professor in Hepatology in the Department of Internal Medicine, at Michigan Medicine in Ann Arbor, Michigan and is the Director of Clinical Hepatology and Assistant Dean for Clinical Research in the University of Michigan Medical School

“I was intrigued by Enochian’s Inventor and Co-Founder, Dr. Serhat Gumrukçu’s presentation at an important scientific meeting in December 2019, where he cited the early data and very innovative strategy to potentially cure HBV. [Link to Press Release](#)

Dr. Peter Piot, KCMG, FRCP, FmedSci, Handa Professor of Global Health, London School of Hygiene and Tropical Medicine, former founding Director of UNAIDS and co-discoverer of the Ebola virus

“I have been working on pandemics for over 40 years and was blown away by the brilliant creativity of the inventor, Dr. Serhat Gumrukçu, and the sophistication and elegance of the scientific approach to potentially treat and prevent any variants of SARS-CoV-2 and Influenza. If the impressive results in animal models are confirmed in people, there is the potential to contribute significantly to fighting COVID-19. Perhaps as important, it is possible that Enochian’s products could prevent future pandemic threats from corona- and influenza viruses.” [Link to Press Release](#)

Dr. Peter Revill, PhD, Senior Medical Scientist, Victorian Diseases Reference Laboratory, Royal Melbourne Hospital, Peter Doherty Institute for Infection and Immunity, Melbourne, Australia

“I was extremely impressed with Enochian BioSciences’ presentation on its HBV approach and research at the recent HEP DART meeting. When I saw the presentation, my thought was, ‘I really wish I had thought of that.’ The elegant science has the potential to help us reach the Holy Grail – a true cure for HBV. I am thrilled to be advising the company.” [Link to Press Release](#)

Dr. Richard Whitley, MD, Distinguished Professor, University of Alabama Birmingham

“I am excited to be involved with Enochian BioSciences as they try to move quickly to advance products that could potentially be important to control and, ultimately end, the COVID-19 pandemic. The Delta variant reproduces so quickly that even vaccinated people with no symptoms can have as much virus in their airways as unvaccinated people, contributing to rapid spread. Enochian’s unique and innovative approach to kill cells infected with the virus in the nose, mouth and lungs could potentially both limit illness but also spread for a win-win.” [Link to Press Release](#)

Dr. Fabien Zoulim, MD, PhD, Clinical Professor of Medicine at Lyon University; Medical Director, Hepatology Department, Hospices Civils de Lyon; and Scientific Director, Department of Immunology and Virology, INSERM Unit 1052, France

“The approach Enochian BioSciences has to a potential HBV treatment or cure exploits an innovative pathway that is novel in the field,” said Dr. Zoulim. “The research completed to date already has expanded and validated aspects of our understanding of how HBV functions. I was particularly impressed by the rapid progress Enochian BioSciences has made in such a short period of time. I’m very excited to be advising the company, as we work together to advance from the pre-clinical phase to the potential for effective interventions for people suffering from HBV infection.” [Link to Press Release](#)