

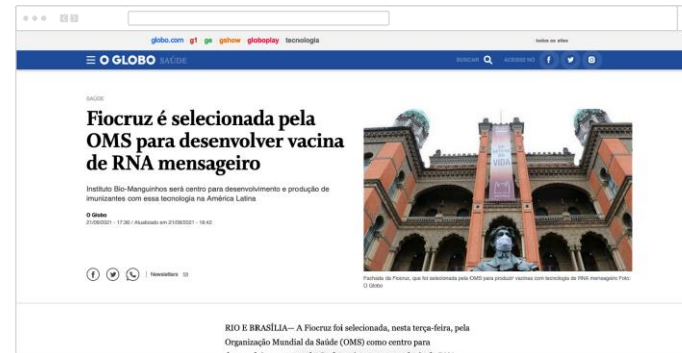


mRNA Platform

Brazilian Conquest

In 2021, the Oswaldo Cruz Foundation was selected by the World Health Organization (WHO) as a Center for the Development and Production of Vaccines with messenger RNA technology in Latin America.

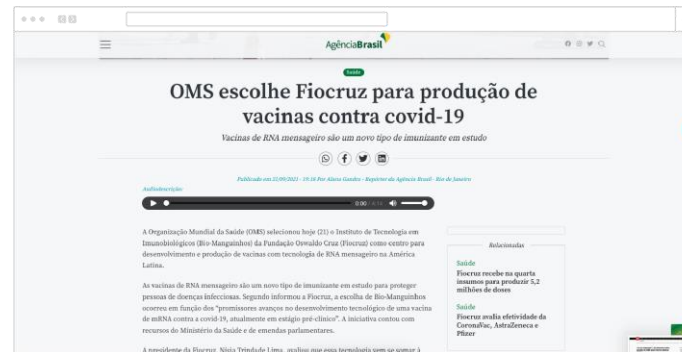
The selection is the result of a global call, which aims to increase production capacity and expand access to vaccines in the Americas.



Jornal O Globo 21 set 2021



CNN 29 jun 2021



Agência Brasil 21 set 2021



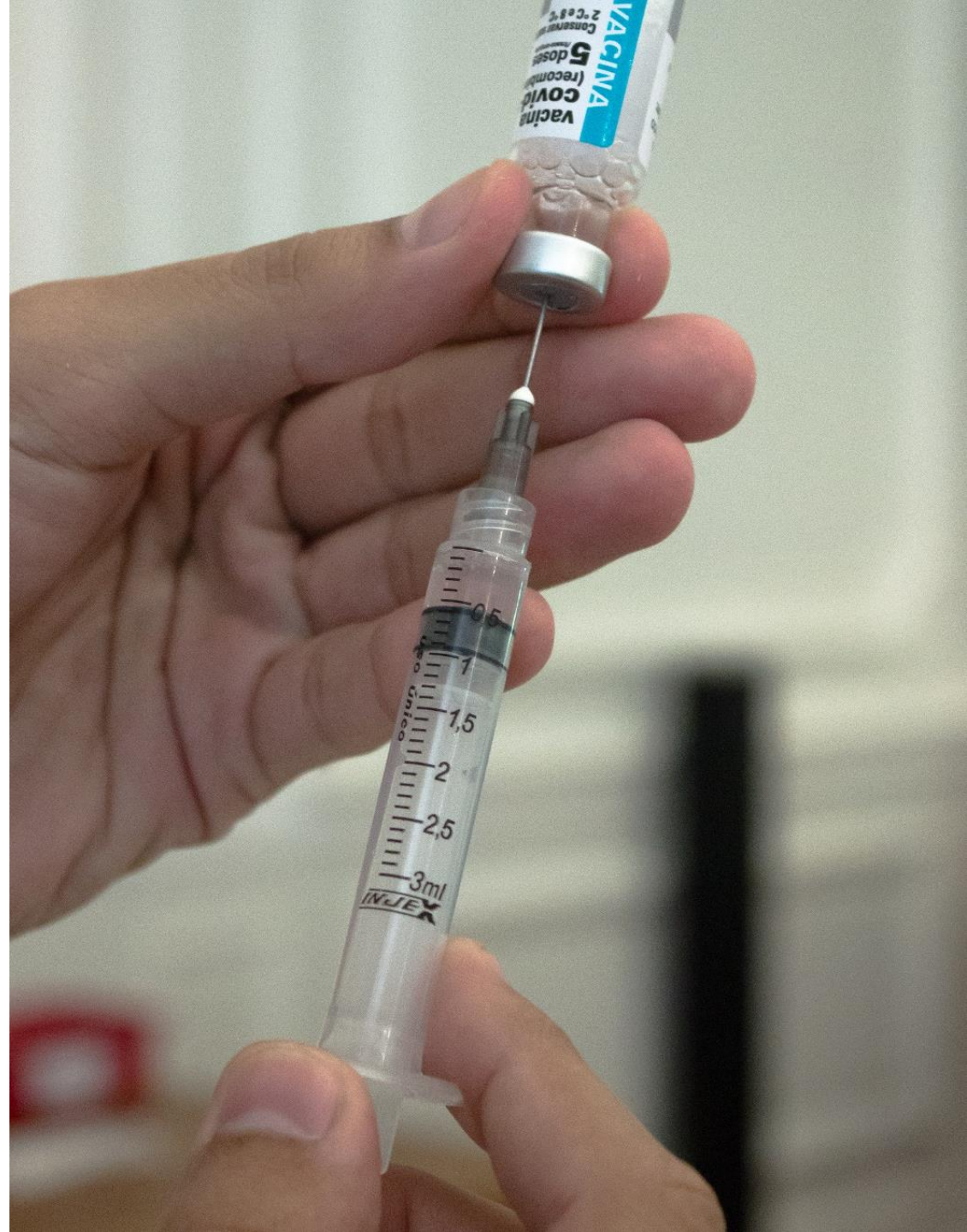
Exame 21 set 2021

Whats the matter for national science?

WHO will make available to Fiocruz a team of international experts helping in the development of vaccines through the Messenger RNA Platform.

Technology that is considered the **frontier of knowledge**, for the development of immunobiologicals and the treatment of other diseases, such as cancer. In the world, only two pharmaceutical companies dominate this form of production (Pfizer and Moderna).

The success of this project **will position Brazil**, for the first time, **as a developer and transferor of national technology.**



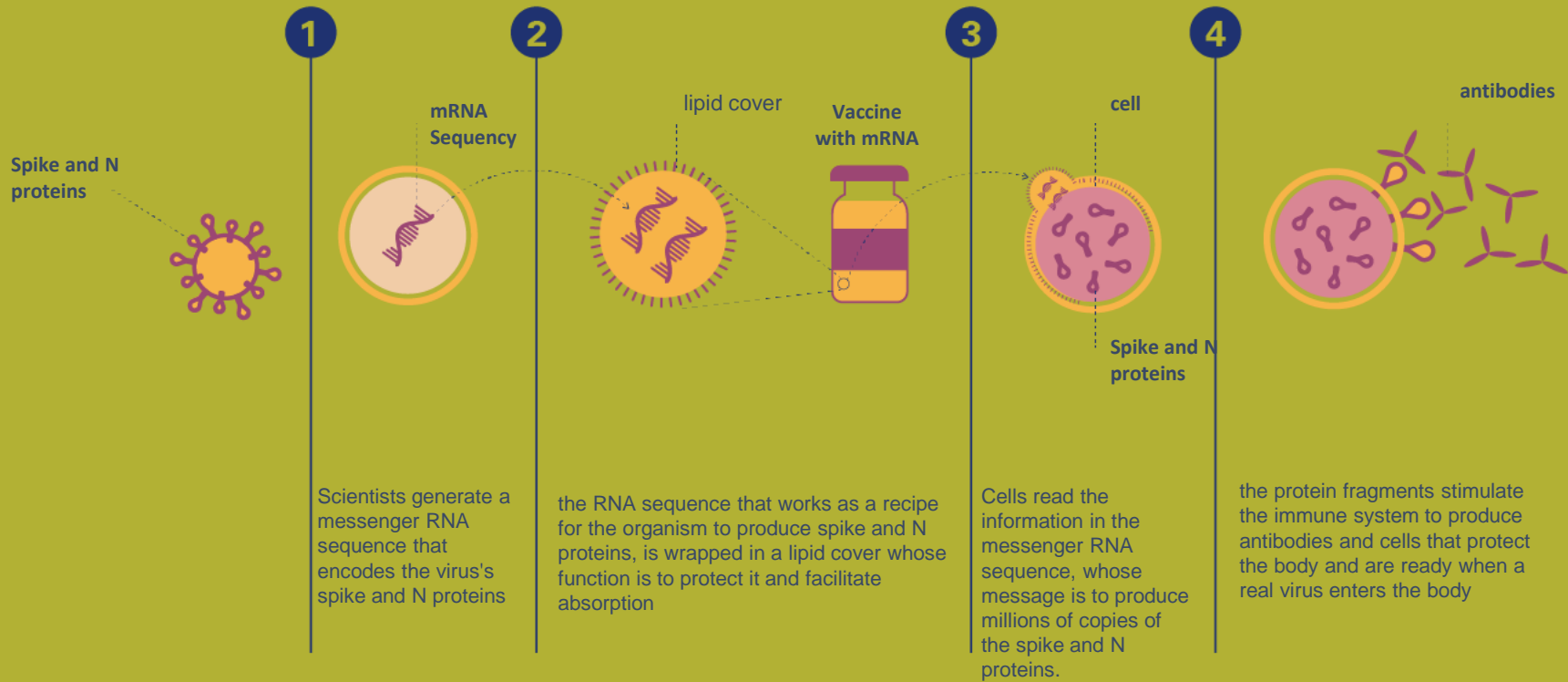
How the Platform works

Messenger RNA engineering is seen as a revolution in medicine. It proved effective against Covid and has the potential for a real revolution in the development of other vaccines.

It is **simpler** as it does not depend on the manipulation of the live virus.

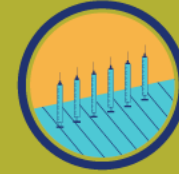
It is **faster**, as all it takes is for the genetic code to be deciphered for other laboratories around the world to use it and it **enables production on an industrial scale** that never changes.

This makes this platform perfect for tackling future public health emergencies



Very quick combat solution potential

Genetic engineering manipulation relatively quick to do



High Quantity Performance

Many doses per liter



Safe Production

It can be carried out in common laboratories



Low Cost

Since replicating the technology is simple



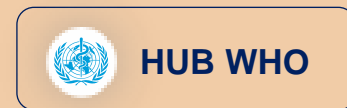
Versatility

The platform can be used in the formulation of other immunizers in future epidemics

Global Race



AFRIGEN	FIOCRUZ	Fiocruz Differences
Conventional development	Self amplifying development	Double Protein
Status Initiation	Status Pre-clinical	Patentability Productive experience



What results will we have with this technological domain?

1. The production of a Covid vaccine using mRNA, completely national and at a very low cost.
2. The transfer of this technology by Fiocruz, free of charge, to other developing countries.
3. The technological mastery of the platform allows the country's real advancement in the development of other vaccines and disease treatments.



Project Status

STAGES	Experimental development	Obtaining pilot batch	Clinical Studies Phase 1	Clinical Studies Phase 2/3
MILESTONES	<ul style="list-style-type: none"> - Development of the cell and plasmid bank (master and work); - Upstream Development and Downstream; - Definition of the analytical methodology for products; - Development of the formulation and production process; - Carrying out pre-clinical studies. 	<ul style="list-style-type: none"> - Infrastructure adequacy; - Definition of production process; - Transfer of DT Technology to production; - Manufacture of experimental batch; - Manufacture of consistency batches; - Carrying out stability studies; - Definition and validation of quality control tests. 	<ul style="list-style-type: none"> - Carry out Clinical Study - Phase 1; - Prepare partial Phase 1 report for submission to ANVISA for the beginning of phase 2/3; - Product registration. 	<ul style="list-style-type: none"> - Carry out Clinical Study - Phase 2/3; - Prepare partial report - Phase 2/3 for product registration; - Manufacture of consistency batches; - Product registration.
START/ END	Dec 2022 / Nov 2023	Dec 2022 / Apr 2024	Nov 2023 / Jun 2025	Mar 2025 / Aug 2026
STATUS	In progress	In progress	Not started	Not started
TOTAL COST BRL 5,38	R\$ 10.355.609,87 EUR 1.924,834 M	R\$ 33.049.798,23 EUR 6.153.085 M	R\$ 4.089.807,78 760,187 K	R\$ 38.369.962,13 EUR 7,131,963 M
STILL NEEDED	Raised	R\$ 8,070,500 (Approximately) EUR 1.5 M Still Needed		Raised

CHALLENGE	Optimization of the development, scaling and production process of mRNA vaccines	EUR 1.5 M
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Project Coordination

Patrícia Neves

PhD in Cellular Biology from FIOCRUZ with part carried out in AIDS Vaccine Research. He has 16 years of experience in the technological development of vaccines and biopharmaceuticals. In 2021 she was awarded by "Women in Science" from PDA Brazil (Parenteral Drug Association).

Ana Paula Anobom

PhD in Biological Chemistry from the Federal University of Rio de Janeiro. She is currently manager of the Immune Technology laboratory at Fiocruz



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