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PRESS RELEASE

The Health Institute proposes to the French State to create an "AIRBUS Biotech of messenger RNA" to meet the needs of the fight against Covid19 and make France a major player in biotechnology

While the launches of anti-Covid vaccines are in full swing and give hope for a gradual exit from the epidemic in 2021, the new variants of Covid-19 are changing the situation. The first consequence of the emergence of these variants is the maintenance of a high number of cases in Europe and worldwide, and the need to strengthen anti-Covid measures because of the English variant. The second consequence is much more worrying. The E484K mutation discovered on South African and Brazilian strains (already present in France) could lead to an escape from the natural or post-vaccination immune response.

Variants sword of Damocles

The likelihood that these mutations will void in the coming months the protective effects of the current vaccination campaign (with the first generation of vaccines) is now within the realm of probabilities. This new situation therefore requires a search for appropriate solutions proportionate to the seriousness of the threat. These mutations disseminated in different parts of the world demonstrate the urgent need to vaccinate in all countries. The impact of these variants on the industrial vaccination strategy is major. The development of new multivalent vaccines (the second generation anti-covid vaccine) will be required to control emerging variants. The most appropriate vaccine platform to take this path is undoubtedly that of messenger RNA. The prospect of mass production of multivalent mRNA-based vaccines is also a game-changer at the industrial level and requires filling existing structural loopholes.

An industrial project with three objectives

1/ To be able to produce mRNA in sufficient quantity and in a minimum time to meet a possible worldwide demand for the production of multivalent mRNA vaccines.

2/ Make multivalent mRNA vaccines public goods accessible to all countries on the planet.

3/ Provide France with a short-term mRNA research and production flagship to position the country as a major industrial and political player in resolving the Covid crisis on the one hand, and to sustainably strengthen our biotechnology sector and our health sovereignty on the other hand. The great potential of mRNA, particularly in certain cancers, cardiovascular diseases and emerging diseases, make it a technology of the future.

For an Airbus of the research and production of messenger RNA in France

On the model of company hotels dedicated to biotechnology, the aim would be to build a production and research hotel in France on mRNA, capable of meeting a global demand for multivalent mRNA vaccines. Three distinct production activities could be envisaged in the hotel:

- A licensed production unit of mRNA for both clinical trials and commercial production, using reactors at different volumes. This GMP certified unit would ensure production from plasmids to the RNA molecule, including the in vitro transcription reaction in a reactor;
- Independent suites to be fitted out to measure for different formulations which may be covered by industrial secrets. These suites would be rented to manufacturers who have developed a vaccine formulation approved by the health authorities;
- Possibly a packaging unit.

Based on a public-private partnership, the French State and the European Union would be involved in the project. It would be headed by an executive committee with industrial and scientific expertise on RNA, which would lead a consortium of biotechnology and pharmaceutical industry. In order to move quickly, this consortium should seek out the most advanced and mature existing expertise, ready to embark on such an initiative.

- For expertise in research and development of multivalent RNA vaccines, a company like Phylex biosciences meets the criteria;
- For the manufacturing process, a CMO (contract manufacturing organization) type company with experience in mRNA production like Lonza, has the skills;
- For overall industrial control, Sanofi has the necessary resources in France.

The economic model of this industrial entity could be based on production revenues (invoiced at cost price + a fixed margin) and those from the rental of independent suites. A consortium contract could legally bind the various partners initially before constituting a company thereafter.

This future European leader in mRNA research and production would be the heart of a biotechnology research, development and production ecosystem that France currently lacks. As the RNA platform has potential in several therapeutic areas, this project would be long-term and would serve as a flagship for the production of biotechnologies in France. It can therefore only be a winner for France, whatever the evolution of the pandemic.

Finally, purely as an indication, the possible timeframe for the construction of this hotel is 6 months for an investment amount of around 300 million euros.

Frédéric Bizard
President of Institut Sante

The Health Institute (www.institut-sante.org)

The Health Institute is a research organization founded in 2018 to create the conditions for a successful overhaul of the French health system. The Health Institute is a citizen, apolitical and independent organization. The Health Institute relies on a collective intelligence made up of a network of around one hundred renowned personalities from the world of health and civil society.

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