



PRESS RELEASE

## **TAKIS ANNOUNCES ITS STRATEGY TO GENERATE A VACCINE AGAINST THE OMICRON VARIANT (B.1.1.529) OF SARS-CoV-2**

*29 November 2021* – The biotech Takis today announced its strategy to address variant B.1.1.529 (Omicron) and SARS-CoV-2 variants of concern.

The Omicron variant includes a number of mutations in the Spike protein and other regions already observed in the Delta variant that are believed to increase the transmissibility of the virus, as well as mutations in other variants that are thought to promote escape from the immune system. The combination of these mutations represents a significant potential risk for accelerating the decline of natural and vaccine-induced immunity.

COVID-eVax vaccine, developed together with Rottapharm Biotech, generated very promising preclinical data and completed phase 1 in humans, where over 90% of volunteers developed a specific immune response against the Spike protein. The vaccine is based on an innovative system that uses the "electroporation" of DNA, which favors its entry into cells and increases the immune response.

"As we seek to defeat the pandemic, it is imperative to be proactive while the virus evolves. In recent months, we have generated almost in real time modifications of COVID-eVax against the Alpha, Beta, Gamma, Delta and many other variants, demonstrating their immunogenicity in animal models. Unlike the previous variants Omicron has a high number of new mutations for this reason it is difficult to predict whether the current vaccines are still protective: for this reason we are moving as fast as possible to adapt our vaccine also against this variant", said Luigi Aurisicchio, CEO and scientific director of Takis.

"Like messenger RNA, the DNA platform has the characteristic of being extremely flexible, administrable several times and being easily adapted to virus mutations. But compared to RNA, DNA is easily produced in bacteria, is stable at room temperature and has a simple formulation. This allows for shorter production times, less expensive processes, easier transport and storage and potentially a better safety profile" says Fabio Palombo, Director of the Cancer Vaccines Area at Takis.

"Due to these characteristics, DNA technology is ideal for developing countries where the percentage of vaccinated is still too low and maintaining the cold chain is the real critical factor. Furthermore, it could be used in many other areas of prevention and treatment of other infectious diseases, such as malaria and tuberculosis" said Emanuele Marra, Director of the Infectious Diseases department at Takis.

Antonella Conforti, Director at Evvivax, the veterinary spinoff of Takis, says: "Being a zoonotic virus, SARS-CoV-2 is capable of infecting various animal species. On this basis, we must be ready to protect even the species in closest contact with humans and also prevent any variants from the animal world, as happened in the case of mink last year. "

In addition to vaccines, Takis is also generating therapeutic antibodies for COVID-19. "In the past few months, we have generated over 2,000 antibodies capable of neutralizing SARS-CoV-2 and its variants of concern. We intend to also evaluate them against the Omicron variant as soon as possible and bring them into clinical development" comments Giuseppe Roscilli, Director of the generation and production department of Monoclonal Antibodies, of Takis.



"The efforts of the scientific community in the last two years have been extraordinary and the resources made available by some states immense, but also amply rewarded by the results obtained. We all hope that current vaccines and therapies are equally effective against the Omicron variant" declares Lucio Rovati, President and Scientific Director of Rottapharm Biotech. "However, it is essential to have more vaccine technology platforms available such as COVID-eVax, which are readily adaptable to any new variants such as booster of the immune response previously induced by other vaccines, or for use in countries where there is currently no vaccine availability. Given the impact of the pandemic on our lives and on the world economy, Italy can do its part and make its experience available to everybody."

Finally, Dr. Aurisicchio concluded: "Thanks to what we have learned since the beginning of the pandemic, we designed the COVID-eVax vaccine - Omicron version - in a few hours and in a few weeks we will be able to test it in preclinical models. The fact remains that the lack of funding currently prevents us from continuing clinical trials to carry out the development of this Italian vaccine. We hope that Italy with the resources of the PNRR can make strategic investments and encourage Italian research to make the Country more competitive".

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## **Takis**

Takis is a biotech company created by a group of scientists formerly from Merck Research Laboratories (MRL). The group has more than 15 years of experience and proven expertise in drug discovery in Oncology and is recognized for the design and implementation of a number of innovative technologies, including that of DNA gene therapy. One of Takis's core assets is its experience with electroporation, a technology that can be used for a variety of clinically useful applications, from vaccine development to somatic gene therapy. Takis' pipeline includes four cancer vaccine candidates based on this technology. Takis is also actively involved in the generation of humanized monoclonal antibodies for use in oncology and infectious diseases, including COVID-19.

For more info, visit [www.takisbiotech.it](http://www.takisbiotech.it)

## **Rottapharm Biotech**

Rottapharm Biotech is a research company dedicated to the discovery and development of innovative drugs. The expertise in research and development includes medicinal / computational chemistry for small molecules, a proprietary platform for the generation and selection of new monoclonal antibodies and the development of other biological drugs and advanced therapies, the validation of new molecular targets, the pharmacological characterization, pharmacokinetics, toxicology and pharmaceutical techniques of new drug candidates; the design and conduct of innovative clinical trials. The company strategy is to develop its own pipeline independently and then seek partnerships with pharmaceutical



companies, as well as investing in alliances on innovative projects of other biotech companies or university spin-offs.

For more info, visit [www.rottapharmbiotech.com](http://www.rottapharmbiotech.com)