Press Release

UAntwerp and Université libre de Bruxelles (ULB) collaborating in unique project to accelerate vaccine development

Belgium invests in contained facility and laboratories for testing vaccines

Developing vaccines for unknown pathogens and testing their efficacy is one of the most important challenges facing the global community today. The Belgian Federal Government is investing 20 million euros in a contained facility and laboratories for ‘human challenge’ studies, a major tool in the vaccine development process. The University of Antwerp and the Université libre de Bruxelles will join forces for this unique project.

Vaccines have been one of the most significant achievements of modern medicine. The World Health Organization (WHO) estimates that at least 10 million deaths were prevented between 2010 and 2015 thanks to vaccinations delivered around the world. Many millions more lives have been protected from the suffering and disability associated with diseases such as pneumonia, diarrhoea, whooping cough, measles and polio.

Although vaccine development has been a success story, radical changes in population density, age distribution and travelling habits, as well as climate changes and disrupted health care services, are enabling both old and new pathogens to become pandemic threats to health security around the world. The global fight against SARS-CoV-2 that we now find ourselves in is just one example.

“As a global community, we must be ready to react to these threats as quickly as possible”, says Prof. Arnaud Marchant (ULB). “The extremely rapid development, manufacturing and comprehensive distribution of vaccines against potentially unknown pathogens will be one of the big challenges. As we all know by now, the race for a COVID-19 vaccine will still take at least a few months, maybe even a year.”

Weakened version of the disease

One technique that will play a key role in developing and testing new vaccines in the future is the use of ‘controlled human infection models’ or CHIM studies. “These types of studies are also called human challenge studies, because in fact we ‘challenge’ a healthy person by exposing him or her to a weakened version of a particular disease, or to the original disease if an effective therapy is available”, explains Prof. Pierre Van Damme (UAntwerp). “CHIM studies accelerate the development and testing of vaccines, and the method is less expensive than other types of vaccine studies.”

There is currently a lack of academic CHIM facilities in continental Europe. To carry out a CHIM study in an academic setting, we would have to go to the US or UK. Only one CHIM study has been
conducted in Belgium so far: the University of Antwerp tested two candidate polio vaccines using its temporary container village ‘Poliopolis’ back in 2017.

A unique project

The Poliopolis study will soon have successors. The Belgian Federal Government is investing 20 million euros in setting up a European anti-infections unit, with specialised infrastructure both in Antwerp (UAntwerp) and Brussels (ULB). This initiative will help the Belgian government and the international community to select the best vaccines for controlling epidemics like COVID-19.

In 2021, a contained facility with 30 beds will be erected at Campus Drie Eiken (Wilrijk) and a high-level immunology laboratory will be established in Brussels with the highest safety requirements. Pierre Van Damme: “We have unique experience in the field of testing vaccines: we have done more than 500 vaccine trials in the last 25 years. In recent years, UAntwerp and ULB have collaborated on multiple vaccine research programmes, leveraging symbioses between the two institutions. For this unique project we will be building on both universities’ existing expertise, capabilities and experience.”

Funders in vaccine research

The project will be a public-private partnership: both universities are looking for interested private funders to provide further support for the project worth a total of 40 million euros. Arnaud Marchant: “In the past we collaborated very closely with funders who are actively involved in vaccine research. We waited for the decision from the Government before starting conversations with such private funders. Pharma and biotech companies are also showing interest in this project. We are aiming for industry to be able to make use of this facility, not to fund it directly.”

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