

Luxembourg is the first country to contribute COVID-19 virus samples to the new WHO BioHub

The LNS has been nominated by the Ministry of Health to represent the country in the initiative.

Luxembourg has joined a small group of countries (including Italy, Egypt, Thailand, Switzerland, Japan, El Salvador, South Africa, UK, Portugal, and Peru) to participate in the pilot phase of the WHO BioHub project, dedicated to SARS-CoV-2, of the World Health Organization (WHO). The country was the first to contribute COVID-19 virus samples to the new hub in the framework of the initiative.

As soon as the first cases of SARS-CoV-2 were detected in Luxembourg, a plan was implemented to establish a dedicated microbial biobank to ensure the prompt storage of clinical samples to facilitate the rapid characterisation of the virus either via sequencing or via virus culture.

LNS hosts the LuxMicroBiobank with more than 37 000 samples

The *Laboratoire national de santé* (LNS) therefore launched the LuxMicroBiobank in May 2020 to host all positive SARS-CoV-2 samples and to serve as a resource for validation of new diagnostic methods in Luxembourg by offering fair and equitable access to anonymised clinical samples to all partners based on public health needs. The LuxMicroBiobank is already host to more than 37 000 SARS-CoV-2 positive samples (since March 2020). The success of the LuxMicroBiobank has not gone unnoticed, and the LNS has been nominated by the Ministry of Health to represent Luxembourg in the WHO BioHub initiative.

The WHO BioHub System will promote collaboration and cooperation with existing networks, repositories, and scientific groups to strengthen knowledge and contribute to the advancement of effective, efficient, fair, and equitable responses to epidemic or pandemic public health events. During the first pilot phase, countries will donate their biological samples to the virtual WHO BioHub System on a voluntary basis. The samples then are made available for qualified entities for both non-commercial and commercial use. The system will further contribute to expanding knowledge and advancing technical work on high-threat pathogens.

WHO BioHub for pathogen storage, sharing, and analysis

In November 2020, the World Health Organization announced the creation of the first WHO BioHub Facility in Switzerland as part of the WHO BioHub System. On the 24th May 2021, the WHO and the Swiss Confederation signed a Memorandum of Understanding to launch the WHO BioHub Facility to kick-off the WHO BioHub pilot phase. This facility will enhance the rapid sharing of viruses and other pathogens between laboratories and partners globally.

Based in Spiez, Switzerland, the facility will serve as a centre for the safe receipt, sequencing, storage, and preparation of biological materials for distribution to other laboratories, in order to inform risk assessments and sustain global preparedness against these pathogens. The BioHub will enable Member States to share biological materials with and via the BioHub under pre-agreed conditions, including biosafety, biosecurity, and other applicable regulations. This will ensure timeliness and predictability in response activities. Following results from the pilot project, the BioHub will expand from SARS-CoV-2 and

its variants to other pathogens, and connect partners with other repositories and laboratory networks in 2022.

Quotes

“The WHO BioHub initiative will provide an excellent resource for the global action plan for pandemic preparedness. We have worked closely with WHO team and our colleagues at Spiez laboratory to test the workflow of submission and reception of SARS-CoV-2 samples in order to set up the standard procedure and it has proven to be efficient and simple. We had already used the system to validate our diagnostic method for detection of Omicron variant in Luxembourg” said Dr. Tamir Abdelrahman, head of the LNS Microbiology department.

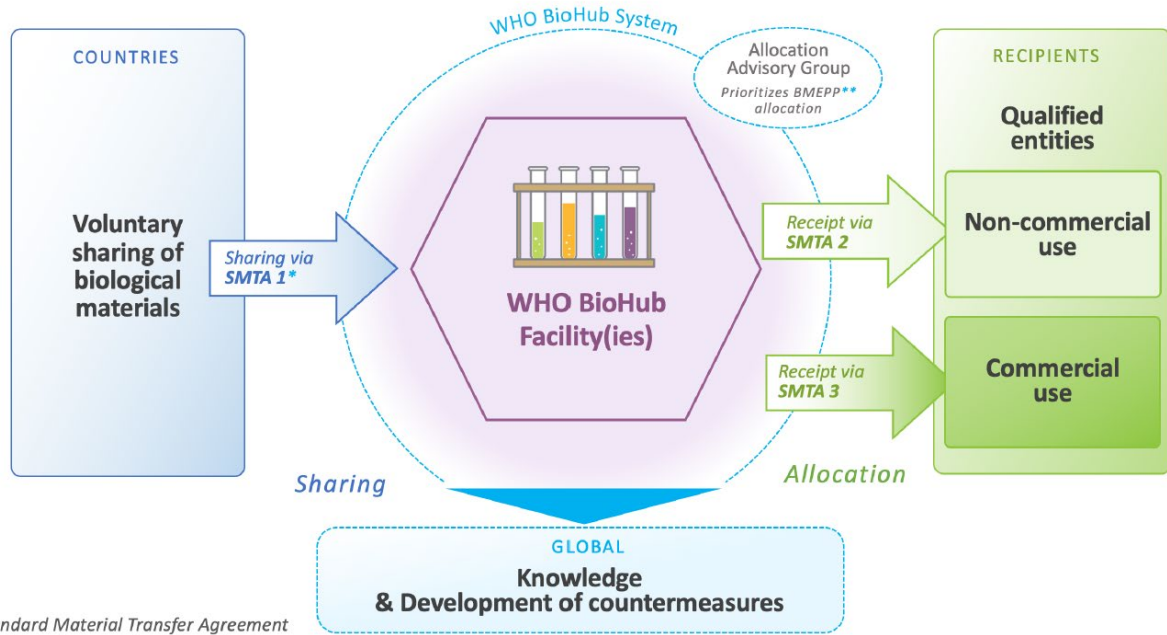
“The LNS is proud to be the first contributor of COVID-19 samples to the new WHO BioHub. Our ambition to provide top services for the country and its people as the backbone of the health system, and to set an international example has once again been made a reality. The LuxMicroBiobank was created out of a joint initiative in Luxembourg and will now also contribute to the well-being of people worldwide”, said Prof. Dr. Friedrich Mühlshlegel, Director of the LNS.

“The ongoing pandemic has taught us the importance of international collaboration and global preparedness in the face of emerging infectious diseases. The WHO BioHub initiative presents a valuable tool in the fight against dangerous pathogens and I am proud that the LNS was able to be the first to contribute COVID-19 samples to this international initiative. This highlights the outstanding work of the LuxMicroBiobank and underlines the progress that we have been able to make in this field throughout the pandemic” added Paulette Lenert, Minister of Health.

FOR MORE INFORMATION:

[The WHO BioHub System for Preparedness and Response to Epidemics and Pandemics - Concept note](#)

Appendix 1 Conceptual model of the WHO BioHub system:



* Standard Material Transfer Agreement

** Biological materials with epidemic or pandemic potential

Evolution of positives samples integrated in the LuxMicroBiobank (by month)

