Press release BRIDGE

The Swiss National Science Foundation SNSF and the Swiss Innovation Agency Innosuisse have granted a BRIDGE Discovery project to the Laboratory of Microbiology at the University of Neuchâtel (LAMUN) in cooperation with the Centre Hospitalier Universitaire Vaudois (CHUV), the Swiss Institute of Bioinformatics (SIB), and two innovative Swiss startups AlveoliX AG and SiMPLInext SA. The aim of this project is to demonstrate for the first time the applicability of ecological theory (initially applied in the field of soil sciences) to human health, as a sustainable mean to fight fungal infection inside the lungs. There is a pressing need to establish novel approaches to treat these life-threatening pathogens due to the emergence of resistance against existing drugs.

Innovative approach

In this project we will apply an entirely new approach called « environmental interference » to fight fungal infection. It exploits the ecology of the lung microbiota by using airway bacteria with the aim to alter the lung microenvironment to fight the lung infection by stopping the proliferation of fungi.

The goal of this project is to develop a highly predictive preclinical testing platform. It will be based on *in vitro, advanced in vitro (lung-on-chip)*, *in vivo* and *in silico* models, to isolate suitable bacteria. We will also create a bioinformatic tool allowing the screening of the lung microbiome of patients to identify at-risk groups and to promote early intervention.

Alliance between science and industry

To enable science-based innovation that has an impact on the industry and society in Switzerland the BRIDGE Discovery Program, funded by SNSF and Innosuisse, fosters Swiss Innovation based on the collaboration between universities and companies. Our team is led by Prof. Pilar Junier from the laboratory of microbiology at the University of Neuchâtel, PD Dr. Angela Koutsokera, Division of Pulmonology, CHUV (VD), Dr. Marco Pagni, SIB (VD) and two industrial partners AlveoliX AG (BE) and SiMPLInext SA (BE).

Grant details

The project " CaOx: applying ecological theory in the fight against lung fungal pathogens" will start in March 2021. The total funding is 1'800.000 CHF.

Project partners:

Prof. Pilar Junier, Université de Neuchâtel, Laboratory of Microbiology (LAMUN),
PD Dr. Angela Koutsokera, Division of Pulmonology,Centre Hospitalier Universitaire Vaudois (CHUV)
Dr. Marco Pagni, Vital-IT group, SIB Swiss Institute of Bioinformatics
AlveoliX AG
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