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Antivirus Pandemic Preparedness EuropeAn pLatform

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Press release about project start

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1.0	Final	31.01.2024	Rainer König (1-JUH)

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1. Summary

A press release for the launch of the project was proposed by the Coordinator, discussed and agreed upon between all partners. All partner organisations personalized the press release shortly describing their involvement. The general press release is available on the https://project-appeal.eu homepage. Partners have released their personalized and translated version on their communication channels.

2. Introduction

A general press release regarding the start of the project, its goals and participating partners has been written by coordinator´s department of public relations. It has been generated in order to create awareness of the APPEAL project. Each partner personalized the general press release to explain their involvement and input in the project. Partners have been disseminating it using national press agencies and their communication channels such as institutional websites. The press release is also published on the project's website.

3. Methods, results and discussion

The press release is included below (followed by the formal acknowledgement of EU support):

3.1. Prepared for the next virus pandemic: The APPEAL project

The COVID-19 pandemic has highlighted the profound impact of the emergence of dangerous viruses. While the World Health Organization identifies Ebola, Lassa, and Zika viruses as pathogens that present a particularly high risk for future epidemics or pandemics, it is important to note that the Influenza virus, despite not being included in this list, has demonstrated the potential to cause significant harm on multiple occasions throughout the 20th and 21st centuries.

Vaccinations and antiviral drugs are fundamental components of global pandemic preparedness, playing a crucial role in preventing and mitigating the impact of infectious diseases. However, these measures require continuous adaptation due to the genetic variability of viruses. This is a costly and time delayed burden for each outbreak. To mitigate this, the APPEAL project will focus on identifying and targeting less variable mechanisms within infected cells that are essential for viral replication, as well as the immune processes through which host cells defend against viral infections.

The consortium led by Jena University Hospital is prioritising the identification of antiviral agents that target host cell proteins. This approach significantly reduces the risk of resistance development and enhancing the long-term effectiveness of the antiviral agents.

Searching for agents in silico, in vitro, and in vivo

"Our research initiative aims to establish a platform for the identification of target proteins and their signalling pathways within host cells, utilising both computational and experimental approaches. Subsequently, potential drug candidates will undergo comprehensive testing in our laboratories, including cell culture and human-relevant 3D models. The most promising candidates will then advance to animal studies, and ultimately, validation in a clinical pilot study," describes Prof. Dr. Rainer König. He coordinates the project, which is funded by the EU with a participation of Great Britain by a total budget of 8.1 million Euro.

Picture credits: Jena University Hospital

Professor Rainer König then further describes, “Our research initiative aims to establish a comprehensive pipeline for the identification and validation of potential antiviral targets and associated drug candidates.” This will involve mining published data from high-throughput gene knockout studies with infected cells, followed by computational analyses using machine learning. This approach aims to identify and prioritise target proteins and their associated signalling pathways within host cells. This will be followed by the screening of substances in drug databases and in-house libraries to inhibit the identified proteins or cellular processes essential to the viral life cycle. Subsequently, experimental validation will be conducted in infected human primary cells and physiologically relevant 3D human tissue models. This will be followed by the screening of substances in drug databases and in-house libraries to inhibit the identified proteins or cellular processes essential to the viral life cycle.

In addition, the scientists also aim to therapeutically activate target proteins that are identified as enhancers of cellular defence processes. For the most promising candidate, the safety and effectiveness of the lead compound will be evaluated in pre-clinical pilot studies. “For at least one substance we aim to go through these steps in a fast track procedure, so that we are able to validate it within a clinical pilot study,” Rainer König summarises. “Our pipeline is intended to respond quickly, safely and effectively to the spread of new or re-emerging dangerous viral infections.”

Participating institutions in the APPEAL project:

- Jena University Hospital, Germany
- Johann-Wolfgang-Goethe University, Frankfurt, Germany
- Imperial College London, UK
- Ruprecht-Karls-University Heidelberg, Germany
- Greifswald University Medicine, Germany
- Centre National de la Recherche Scientifique (CNRS), Institut de Recherche en Infectiologie de Montpellier, France
- ERINHA European Research Infrastructure on Highly Pathogenic Agents, Brussels, Belgium
- Erasmus Medical Center, Rotterdam, The Netherlands,
- Institut Pasteur, Paris, France
- ECRIN European Clinical Research Infrastructure, Paris, France
- MatTek in vitro Life Science Laboratories, Bratislava, Slovakia
- Welab Barcelona (Acondicionamiento Tarrasense Associacion) Spain
- ConsulTech Technologieberatung GmbH, Berlin, Germany

4. References

Table 1 Links to press release versions of project partners

Partner	Press release link
1-JUH	https://www.uniklinikum-jena.de/en/University+Hospital/News/Press+releases/Prepared+for+the+next+virus+pandemic_+The+APPEAL+project-pos-0-p-33426.html
2-GUF	https://aktuelles.uni-frankfurt.de/forschung/vorbereitet-auf-die-naechste-virus-pandemie/
8-ECRIN	https://ecrin.org/news/launch-appeal-research-initiative
10-WL	https://www.welabbarcelona.com/wp-content/uploads/2023/12/PR_APPEAL_Welab_final.pdf
	https://www.linkedin.com/posts/welabbarcelona_we-are-proud-to-announce-that-welab-activity-7150410949454204928-08dn?trk=public_profile
11-CT	https://www.consultech.de/en/news/files/EN-2024-01.php