

New Method of Coronavirus Decontamination

The first international FWF corona urgent funding project offers a safe and affordable alternative to current means of virus decontamination. The research focuses on the reuse of highly effective face masks and the decontamination of other sensitive objects.

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The COVID-19 pandemic has revealed a clear need for the efficient decontamination of surfaces and objects of daily use to reduce the transmission of the virus through smear infection. Objects that cannot be decontaminated using liquid disinfectants or heat can present a particular challenge. The availability of alternative approaches is crucial here to containing the epidemic spread of viral or other microbial pathogens.



In his international FWF urgent funding project, Thomas Lion (St. Anna Children's Cancer Research, Vienna; in the picture) together with Vladimir Scholtz (UCT, Prague, Czech Republic) focus on the reuse of highly effective face masks and the decontamination of other sensitive objects with new, safe, and environmentally friendly decontamination technology.

Safe and environmentally friendly method of decontamination

Cold atmospheric plasma (CAP) is a newly developed method for the decontamination of objects from micro-organisms. Besides its outstanding effectiveness, CAP technology is also affordable, gentle on materials, and safe for people and the environment. Its effectiveness in bacterial disinfection is already well-established. More recent studies have also shown CAP's suitability for efficient virus inactivation, but more data is needed on the optimal conditions for inactivation and related mechanisms.

First international FWF urgent funding project

In an international research project funded by the FWF as well as the GACR (Czech Science Foundation), Thomas Lion of St. Anna Children's Cancer Research in Vienna and Vladimir Scholtz of UCT in Prague, Czech Republic, are adapting CAP technology so that heat or liquid-sensitive objects can be reused after decontamination. The focus of their research is on the reuse of highly effective face masks as well as the decontamination of other sensitive objects. The aim is to investigate the effectiveness of CAP using selected human respiratory viruses with different properties, such as SARS-CoV-2, influenza A, adenovirus, and rhinovirus.

The results of this study will contribute to establishing CAP technology as a safe and affordable alternative to current means of virus decontamination, especially in times of increased demand and

scarcity of disinfectants. An understanding of the mechanisms underlying CAP-induced virus inactivation will enable Lion and Scholtz to identify the strengths of the approach and to address any potential weaknesses as the basis for its widespread use.

The FWF's urgent funding programme supports Austrian COVID-19 basic research

In March 2020, as an immediate response to the corona pandemic, the FWF initiated the SARS-CoV-2 urgent funding programme—a fast-track procedure for research proposals that deal with the prevention, early detection, containment, and research of SARS-CoV-2 and especially rely on international cooperation. In 2020, the FWF has approved 16 urgent funding projects to the tune of nearly €6 million within an average processing time of two months.

Apart from its urgent funding programme, the FWF has set up one of the largest international networks of funding agencies to jointly advance research into the coronavirus. Network members include both the partners of the CEUS cooperation (Central European Science Partnership) from Czech Republic (GACR), Poland (NCN), and Slovenia (ARRS), as well as the German Research Foundation (DFG), the Swiss National Science Fund (SNF), the FNR from Luxembourg, and the Province of South Tyrol.

The Austrian Science Fund FWF

The FWF is Austria's central funding organisation for basic research as well as arts-based research. Applying international quality benchmarks, the FWF provides funding for outstanding research projects and excellent researchers who work to generate, broaden, and deepen scientific knowledge.

Contact & Questions:

Austrian Science Fund FWF

Marc Seumenicht

Dep. Head of Communications, Spokesman

+43-1 505 67 40 – 8111

marc.seumenicht@fwf.ac.at

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