

# “Organoids”

Meeting report of the 20<sup>th</sup> Workshop “Cell Biology of Viral Infections ” of the German Society of Virology (GfV) in Schöntal, October 12<sup>th</sup>–14<sup>th</sup>, 2022.

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Group photo with 2022 workshop participants in front of the main building of the Cistercian Monastery Schöntal.

From October 12<sup>th</sup> to 14<sup>th</sup> 2022 the 20<sup>th</sup> Workshop “Cell Biology of Viral Infection” of the German Society of Virology (GfV) took place in the Schöntal Monastery near Würzburg. This year’s special focus was “Organoids”, represented by four keynote speakers from Germany, the U.K., Italy, and Spain, who highlighted different aspects of this topic, ranging from the history of organoid research and the development of various organoid systems, their use for studying diseases, and particularly also viral infections, all the way to cutting-edge biofabrication techniques.

In total the workshop had 39 on-site participants, among which were 30 students and postdocs. They actively participated in the workshop in 26 oral presentations in four sessions on Virus Entry, Replication and Morphogenesis, Virus Host Interactions, and Organoids. As in last

years, there was ample discussion in the sessions, with a very active participation particularly of the younger attendees. Similarly, there was plenty of opportunity for networking at lunch and dinner gatherings, as well as at the well-attended social events.

The scientific program of the workshop started with a keynote lecture from Dr. Elena Martinez Fraiz from the Institute of Bioengineering of Catalonia in Spain. She spoke about the development and application of novel artificial matrices that mimic tissue micro and nanofeatures for use as biomimetics in *in vitro* assays. In particular, this encompassed biofabrication technologies such as bioprinting to develop complex *in vitro* models for small intestinal epithelium.

The second keynote lecture was given by Dr.

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Laura Pellegrini from the MRC Laboratory of Molecular Biology at the University of Cambridge, U.K. Dr. Pellegrini is a senior postdoctoral research fellow in the group of Madeline Lancaster, and recently was awarded a grant by the Wellcome Trust Foundation to start her own research group on organoids. As such she not only gave a fascinating talk on cerebral and choroid plexus organoids and their use to study neuroinvasion, but also served as an example for a young scientist at the stage of becoming an independent group leader, which of course was of great interest to the young virologists present at the workshop.

Dr. Veronica Krenn gave then a second lecture on cerebral organoids, complementing Dr. Pellegrini's talk. She recently transitioned from being a Marie Skłodowska-Curie postdoctoral fellow in the Knoblich laboratory at the Institute of Molecular Biotechnology in Vienna to being a principal investigator at the Department of Biotechnology and Biosciences of the University of Milan-Bicocca. The focus of this talk was on stem cell-derived 3D organoid cultures to develop human models for infectious diseases, and the study of the impact of viral infections and immunity on neural stem cell proliferation and brain development.

Finally, while unable to attend in person, Dr Meritxell Huch from the Max Planck Institute of Molecular Cell Biology and Genetics in Dresden gave the last keynote lecture, highlighting the development of organoid research over time, and providing some background on her own work of developing liver and pancreas organoids. This represented an excellent example how organoids can serve as tools for

studying complex cell biological processes.

These keynote lectures were complemented by excellent presentations from all participants, covering a diverse range of topics and viruses. Like in the past years, at the end of the workshop all participants voted on the best oral presentation given by a young virologist, either student or junior postdoc. Silvia Albertini from the laboratory of Nicole Fischer at the University Medical Center Hamburg-Eppendorf, who had given a presentation on the development of skin organoids, was selected for the best oral presentation prize.

This year also marked the end of the term of Dr. Eva Herker (Philipps-University Marburg) and Dr. Thomas Hoenen (Friedrich-Loeffler-Institut) as chairs of the working group "Cell Biology of Viral Infections" of the young GfV (jGfV), and thus also as organizers of this workshop. As successors, the participants voted for Dr. Gabrielle Vieyres from the Leibniz Institute for Virology in Hamburg and Dr. Christian Sieben from the Helmholtz Centre for Infection Research in Braunschweig. They are already in the process of planning the 21<sup>st</sup> annual workshop, which will take place from October 18<sup>th</sup> to 20<sup>th</sup> at the Schöntal Monastery. More information and updates can be found on the workshop's website <https://cellviro.g-f-v.org>.

Finally, the organizers would like to thank the German Society for Virology (GfV), the German Society for Cell Biology (DGZ), and the companies ReBlikon and Singleron for their support. The workshop would not have been possible without their generous contributions!



Silvia Albertini, the winner of the prize for the best oral presentation of the 2022 workshop, together with the organizers Eva Herker and Thomas Hoenen.