

# EpiViral Newsletter

## June, 2022

### Welcome message

Dear readers,

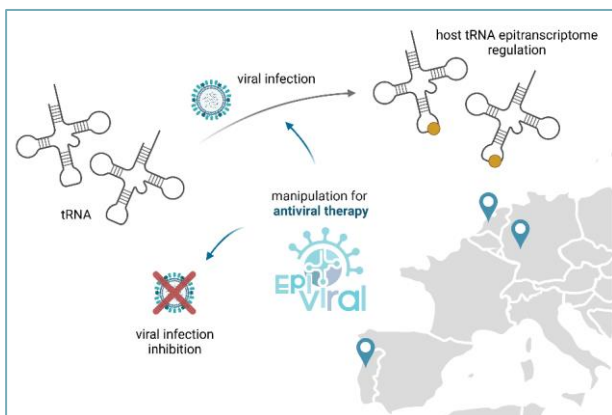
Welcome to the first issue of the EpiViral Newsletter. Here, you will find information regarding the EpiViral project, its activities, as well as upcoming events. We hope you enjoy reading it and consider joining our future activities.

*Dr. Daniela Ribeiro  
Project Coordinator*

### EpiViral – Viruses and Epitranscriptomics: seeking novel targets for antiviral therapy

EpiViral is a Coordination and Support Action (CSA) – Twinning – from the H2020, coordinated by the [University of Aveiro](#) (Portugal). The project aims to intensify, increase and consolidate scientific research on Virology and RNA biology at the [Institute of Biomedicine \(iBiMED\)](#), University of Aveiro by twinning with two world-leading institutions, the [Leiden University Medical Center](#) (LUMC) and the [Goethe University Frankfurt](#) (GUF).

EpiViral is fostering networking and training activities, including exchange of researchers within the consortium, conferences, seminars, summer schools, workshops, and other events for scientists, industry, and the general public.



### Tackling viral infections

Viral infections are one of the most prominent and persistent threats to human health, resulting in high mortality rates and a tremendous economic impact. The frequent mutations and emergence of new viral species undermine a large part of the existing therapeutics, mainly directed at specific viruses or strains, emphasizing the importance of discovering novel broad-spectrum antiviral strategies.

The EpiViral consortium is investigating common mechanisms shared by different viruses, namely the regulation of host RNA modifications (epitranscriptome) upon infection, which may provide important hints for novel antiviral therapy development.

## The EpiViral team



Dr. **Daniela Ribeiro** is an Assistant Researcher (CEEC2017) at iBiMED, Portugal. Her group studies the interplay between viruses and their host cells, namely the role of intracellular organelles in the establishment of the cellular antiviral response, the importance of peroxisomes throughout viruses' life-cycles, and innate immune response vs. viral oncogenesis.



Dr. **Ana Raquel Soares** is an Assistant Researcher (CEEC2018) at iBiMED, Portugal. Her group investigates the interplay between RNA modifications, tRNA and small non-coding RNA biology, and protein quality control mechanisms aiming at identify novel therapeutic targets for diseases where proteostasis is affected.



Dr. Ir. M. **Marjolein Kikkert** is an Associate Professor at the Department of Medical Microbiology of the Leiden University Medical Center (LUMC), The Netherlands. Her research group currently investigates viral replication-associated membrane modifications, as well as antiviral innate immunity and immune evasion strategies of different Nidoviruses.



Dr. **Stefanie Kaiser** is a Full Professor of Pharmaceutical Chemistry at Goethe University Frankfurt (GUF), Germany. Her research is focused on the mechanisms and functions of RNA modification biology in various cell types to shed light on the role of RNA modifications in cell homeostasis and neurological disease pathogenesis.

## EpiViral Student Exchange 13<sup>th</sup> of September - 13<sup>th</sup> of October 2021

Two doctoral students, Diana Ribeiro and Marisa Pereira from iBiMED, had the opportunity to visit and perform hands-on training at the laboratory of Stefanie Kaiser at the GUF. During this staff exchange, students prepared and analysed tRNA and rRNA modifications using liquid chromatography-coupled mass spectrometry (LC/MS-MS) approaches developed by Stefanie Kaiser.



## EpiViral Researchers Exchanges

27<sup>th</sup> October and 30<sup>th</sup> November 2021

Daniela Ribeiro and Ana Soares met with the Twinning partners Marjolein Kikkert and Stefanie Kaiser at LUMC and GUF, respectively. These visits involved scientific meetings to discuss ongoing collaborative projects, the plans for joint grant applications, and the progress of the EpiViral project.

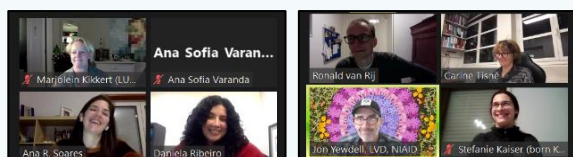


## 1<sup>st</sup> EpiViral Symposium

10<sup>th</sup> of January 2021

The 1<sup>st</sup> Annual Symposium – “At the crossroads between Virology and RNA biology”, was an online event organized by the EpiViral consortium. The programme included four talks from leading researchers in virology and RNA biology, as well as cellular antiviral innate immunity. A “Round Table” was organized, bringing together Symposium speakers, the EpiViral Advisory Board, and EpiViral researchers to discuss emergent topics on the interface of virology and RNA Biology.

The Symposium was the first international event of the EpiViral project and created an unique opportunity to present EpiViral and start new collaborations.



**AT THE CROSSROADS BETWEEN VIROLOGY AND RNA BIOLOGY**

**1<sup>st</sup> EPIVIRAL SYMPOSIUM**

10<sup>th</sup> January 2022  
09:00-08:00 GMT - VIRTUAL CONFERENCE

**Carine Tisné**  
Centre National de la Recherche Scientifique (CNRS), University of Paris, France  
“mTA/m6A modifications in RNAs”

**João Paulo Gomes**  
National Health Institute Doutor Ricardo Jorge (INSA), Portugal  
“Two years of COVID-19 in Portugal: the impact of monitoring SARS-CoV-2 genetic diversity on Public Health and policy makers”

**Jonathan Yewdell**  
US National Institute of Allergy and Infectious Diseases, USA  
“Translating MHC Class I Peptides for T cell Immunosurveillance”

**Ronald van Rij**  
Radboud Institute for Molecular Life Sciences (RIMLS), Radboud University Medical Center, The Netherlands  
“Biogenesis of virus-derived piRNAs in vector mosquitoes”

**Free Registration**  
Registration closes on 7<sup>th</sup> January 2022

For further information, please visit our site at: [www.epiviral.eu](http://www.epiviral.eu)

[epiviralthinning@gmail.com](mailto:epiviralthinning@gmail.com)  
[#EpiViralSymposium2022](https://twitter.com/EpiViralSymposium2022)

**Organizing Committee:** Ana Raquel Soares • Ana Sofia Varanda • Daniela Ribeiro  
Institute of Biomedicine (iBiMED) / Department of Medical Sciences, University of Aveiro, Portugal

## Training for researchers on Intellectual Property Rights (IPR) and knowledge transfer

EpiViral organized three workshops on IPR and knowledge transfer with the support of the Technology Transfer Office from UAVR - UACOOPERA. The first session, “UACOOPERA at the service of society”, took place at the iBiMED-UAVR on the 20<sup>th</sup> October 2021. During this session, the UAVR Technology Transfer Office was introduced to the scientific community. The other two sessions “UACOOPERA – Entrepreneurship” and “UACOOPERA – Intellectual Property” were hosted online on the 26<sup>th</sup> November 2021 and the 10<sup>th</sup> December 2021. Participants had the opportunity to learn how to develop a business idea from a scientific finding or concept and learn more about the potential value and interest of scientific findings and how these can be protected.

## Seminars

Renowned scientists were invited to present and discuss their research at iBiMED-UAVR. Three online Spring seminars were organized on the 2<sup>nd</sup>, 9<sup>th</sup>, and 16<sup>th</sup> June 2021.

The first seminar was presented by Eva Herker, an expert on virus-host interactions. The two other seminars were presented by the Twinning partners, Stefanie Kaiser and Marjolijn Kikkert.

**EPIVIRAL SPRING SEMINARS 2021**

**2<sup>nd</sup> June** @ 12:00  
“Lipids Go Viral: Deciphering the Function of Lipid Droplets in Hepatitis C Virus Infection”  
Eva Herker • Institute of Virology, University of Marburg, Germany

**9<sup>th</sup> June** @ 12:00  
“The second layer of information - analysis of the viral epigenome and epitranscriptome using mass spectrometry”  
Stefanie Kaiser • Institute for Pharmaceutical Chemistry, Goethe University Frankfurt, Germany

**16<sup>th</sup> June** @ 12:00  
“Coronaviruses rule the world and the cell”  
Marjolijn Kikkert • Department of Medical Microbiology, Radboud University Medical Center, The Netherlands

## EpiViral Young Scientists Conference Attendance Award

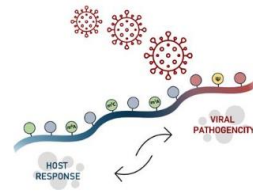
EpiViral implemented an award to support the participation of early-stage researchers from iBiMED on international conferences. The three editions of this award enabled ten early-stage researchers to attend and present their work at conferences such as the “ASV 40<sup>th</sup> annual meeting” and “EMBO|EMBL Symposium: The Non-Coding Genome”.

## Special Issue at Frontiers in Cell and Developmental Biology

Daniela Ribeiro, Ana Soares, Stefanie Kaiser and Marjolein Kikkert were the editors of the Special Issue on [“Viruses and Epitranscriptomes: Regulation of Infection and Antiviral Response”](#) at Frontiers in Cell and Developmental Biology.

Research Topic

## Viruses and Epitranscriptomes: Regulation of Infection and Antiviral Response



## Publications

- [Editorial: Viruses and Epitranscriptomes: Regulation of Infection and Antiviral Response](#) Soares A. R., Kikkert M., Kaiser-Kellner S., Ribeiro D., Front. Cell Dev. Biol., 2022
- [Upregulation of tRNA-Ser-AGA-2-1 Promotes Malignant Behavior in Normal Bronchial Cells](#) Santos M., Fidalgo A., Varanda A. S., Soares A. R., Almeida G. M., Martins D., Mendes N., Oliveira C., Santos M. A. S., Front. Mol. Biosci., 2022
- [Human Cytomegalovirus vMIA Inhibits MAVS Oligomerization at Peroxisomes in an MFF-Dependent Manner](#) Ferreira A. R., Gouveia A., Magalhães A. C., Valença I., Marques M., Kagan J. C., Ribeiro D. Front. Cell Dev. Biol., 2022, 10:871977.
- [Emerging roles of peroxisomes in viral infections](#) Ferreira A.R., Marques M., Ramos B., Kagan J.C., Ribeiro D., Trends in Cell Biolgy, 2022, 32(2):124-139.
- [5U54 tRNA Hypomodification by Lack of TRMT2A Drives the Generation of tRNA-Derived Small RNAs](#) Pereira M., Ribeiro D. R., Pinheiro M. M., Ferreira M., Kellner S., Soares A. R. Int. J. Mol. Sci. 2021, 22(6), 2941.

## UP NEXT

EpiViral is hosting a **Summer School on RNA viruses: interactions with hosts, vectors and cells** at the University of Aveiro, Portugal (in a hybrid format).

This Summer School is directed to MSc or PhD students, as well as early-stage post-doctoral scientists who are interested in the topic.

For more information, please visit our website: [www.epiviral.eu](http://www.epiviral.eu).

**EPIVIRAL  
SUMMER  
SCHOOL**

**RNA VIRUSES:  
INTERACTIONS  
WITH HOSTS,  
VECTORS AND CELLS**

**Sept 6<sup>th</sup> – 9<sup>th</sup> 2022**  
IBIMED – DEPARTMENT OF MEDICAL SCIENCES  
UNIVERSITY OF AVEIRO, PORTUGAL

## Contact and follow us on social media!



<https://epiviral.eu/>



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