

# 6<sup>th</sup> IAAASS

## Innovative Approaches for Identification of Antiviral Agents

September 26<sup>th</sup> -30<sup>th</sup> 2022, Pula (CA), Sardinia, Italy

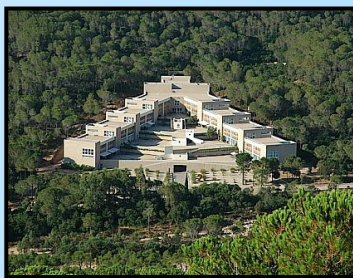
- **Informal and interactive** international environment targeted to **early-stage researchers**
- Presentation of **most advanced methods** for the development of **novel antiviral agents**
- Plenary lectures reviewing **viral target identification** and **drug discovery** from **leading internationally-recognized experts** in the fields of virology, biochemistry, molecular modeling and medicinal chemistry
- Afternoon sessions dedicated to **poster and oral presentations from participants**
- **Daily thematic discussion groups** stimulating interactions between early researchers and senior scientists

### Confirmed speakers

 <b>Graciela Andrei</b> (Leuven)	<b>Massimo Palmarini</b> (Glasgow)	
 <b>Kathie Seley-Radtke</b> (Baltimore)	<b>Andrea Brancale</b> (Prague)	
 <b>Johan Neyts</b> (Leuven)	<b>Ben Berkhout</b> (Amsterdam)	
 <b>Jean Nachega</b> (Pittsburgh)	<b>Priscilla Yang</b> (Stanford)	
 <b>Vincenzo Summa</b> (Napoli)	<b>Reuben Harris</b> (San Antonio)	
 <b>Stefan Pöhlmann</b> (Göttingen)	<b>Enzo Tramontano</b> (Cagliari)	
 <b>Chris Meier</b> (Hamburg)	<b>Branka Horvat</b> (Lyon)	
 <b>Albrecht Von Brunn</b> (Munich)	<b>Matteo Iannacone</b> (Milan)	

## Submission deadline 15<sup>th</sup> July 2022

Info: [iaaass@unica.it](mailto:iaaass@unica.it) , <http://people.unica.it/iaaass/>



*The Organizing Committee welcomes you to Polaris Technology Park, located in the territory of Pula (Cagliari) in a natural park at the foot of Sulcis mountains, South-Western coast of Sardinia. We look forward to sharing with you a wider view on current and future antiviral strategies in this amazing place!*

### Organizing Committee:

Enzo Tramontano, University of Cagliari, Italy  
Stuart Le Grice, NCI, Frederick, MD, USA  
Angela Corona, University of Cagliari, Italy  
Reuben Harris, HHMI & UT Health San Antonio, USA  
Vincenzo Summa, Federico II University, Naples, Italy

Elias Maccioni, University of Cagliari, Italy  
Graciela Andrei, UK Leuven, Belgium  
Ben Berkhout, University of Amsterdam, Netherlands  
Cristina Parolin, University of Padova, Italy



# Innovative Approaches for Identification of Antiviral Agents

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**2022.09.26**

4.00 pm Shuttle from Hotel Flamingo to the Research Park

4.30 pm **Opening Remarks** **AUDITORIUM**

Enzo Tramontano Local host

Kathie Seley-Radtke ISAR president

## Plenary lectures

1- Kathie Seley-Radtke

*University of Maryland, Baltimore, USA*

Fleximers – a strategic approach to broad-spectrum antiviral therapeutics

2 - Graciela Andrei

*REGA Institute, KU, Leuven, Belgium*

Antiviral drug development against large DNA viruses: success and failure

6:30 pm Shuttle from Research Park to the Hotel Flamingo

8:00 pm **Dinner**

**2022.09.27**

8.40 am Shuttle from Hotel Flamingo to the Research Park

9:00 am **Plenary Lectures** **AUDITORIUM**

*Chairman Ben Berkhout*

3 - Branka Horvat

*International Center for Infectiology Research, Lyon, France*

Development of fusion inhibitory peptides against airborne viral infections

4 - Stefan Pöhlmann

*German Primate Center, Infection Biology Unit, University of Göttingen, Germany*

SARS-CoV-2 entry into cells and its inhibition

11.00 am **Coffee Break**

11.15 am **Poster session 1 odd numbers** **WORKSHOP ROOM**

12:00 am **Plenary Lecture** **AUDITORIUM**

*Chairman Nicole Grandi*

5 - Massimo Palmarini

*Centre for Virus Research, MRC-University of Glasgow, UK*

Evasion of genetic barriers for spillover and pandemic emergence of influenza A viruses

1.00-2.30 pm **Lunch**

2.30-4.15 pm **Selected oral communications** **AUDITORIUM**

*Chairman Reuben Harris*

1.0 – Gregory Mathez

*Institute of Microbiology, University of Lausanne, Lausanne*

Innovative approaches for broad-spectrum antivirals

2.0 – Yuliya Chykunova

*Virogenetics Laboratory of Virology, Jagiellonian University, Poland*

Structural insights into the inhibition of O'nyong'nyong virus

3.0 - Matteo Costantino

*Department of Clinical and Biological Sciences, Orbassano (Turin), Italy*

27-hydroxycholesterol inhibits rhinovirus replication in vitro and on human nasal and bronchial histocultures without selecting viral resistant variants

4.0 - Irina Stefanelli

*Dipartimento di Farmacia - Università degli Studi di Napoli Federico II -Italy*

Peptidomimetic inhibitors of CoVs Main proteases: design, synthesis, biological evaluation and structural biology studies.

2022.09.27

- 5.0 - Elisa Fanunza  
*University of Texas, Health Science Center  
San Antonio* CRISPR/Cas9-IFA Screening to Identify Novel Viral Factors Involved in HCMV-induced APOBEC3B Relocalization.
- 6.0 – Federica Giammarino  
*Department of Medical Biotechnologies,  
University of Siena, Italy* Evaluation of the in vitro combinatorial activity of ibalizumab and HIV-1 antivirals
- 7.0 - Annalaura Paulis  
*Department of Life and Environmental  
Sciences, University of Cagliari, Italy* In search of novel antiviral strategies: newly identified molecules induce type I Interferon expression through STING dependent pathway

4.30 pm Shuttle from Research Park to the Hotel Flamingo

6.30-7.30 pm Discussion groups **Hotel Meeting points**

8.00 pm Dinner

2022.09.28

8.40 am Shuttle from Hotel Flamingo to the Research Park

9:00 Plenary Lectures **AUDITORIUM**

*Chairman Kathie Seley-Radtke*

6- Priscilla Yang  
*Stanford University, Stanford, USA* Targeted protein degradation (rather than functional inhibition) as an alternative antiviral strategy

7- Chris Meier  
*University of Hamburg, Germany* Getting highly polar, bioactive Nucleotides into cells using chemical “trojan horses” – from Medicinal Chemistry to Chemical Biology

11.00 am Coffee Break

11.15 am Poster session 2 even numbers **WORKSHOP ROOM**

12.00-13.00 Plenary Lecture **AUDITORIUM**

*Chairman Elias Maccioni*

8 - Vincenzo Summa  
*Federico II University of Naples, Italy* A journey into the drug discovery of the proteases from HCV to SARS-CoV2

1.00-2.00 pm Lunch

2.00- 5.00 pm Plenary BIOTECH **AUDITORIUM**

*Chairman Vincenzo Summa*

**Reithera**  
Antonella Folgori Developing viral vectored-vaccines against infectious diseases: achievements, challenges and opportunities

**Takisbiothech**  
Luigi Aurisicchio DNA vaccination: past, present and future perspectives

**Dompé**  
Daniela Iaconis Artificial Intelligence AI and Molecular Simulation MS: paving a new way for drug discovery

**ViroStatics**  
Franco Lori Synergistic combinations of antiviral drugs

5.00 pm Shuttle from Research Park to the Hotel Flamingo

7.00-8.00 pm Discussion groups **Hotel Meeting points**

8.00 pm Dinner

**2022.09.29**

8.40 am Shuttle from Hotel Flamingo to the Research Park

9:00 am **Plenary Lectures** **AUDITORIUM**

*Chairman Rolando Cannalire*

9 - Enzo Tramontano Searching for direct acting agents targeted to SARS-CoV-2 proteins  
*University of Cagliari, Cagliari, Italy*

10 - Albrecht von Brunn From Coronavirus-host protein-protein interaction screening to viral signaling pathways and broad-spectrum antivirals  
*Ludwig-Maximilians-University, Munich, Germany*

11.00 am **Coffee Break**

11:30 am **Plenary Lectures** **AUDITORIUM**

*Chairman Graciela Andrei*

11 - Reuben Harris Combinatorial therapy for SARS2 - Insights from studies on the viral main protease (Mpro/3CLpro)  
*HHMI & UT Health San Antonio, Texas, USA*

12 - Ben Berkhout Can we use CRISPR-Cas to cure an HIV-1 infection?  
*Institute for Infection and Immunity, University of Amsterdam, Netherlands*

1.00-2.00 pm **Lunch**

2:00-4:00 pm **Round table: Is there any life after PhD?** **AUDITORIUM**

**An overview of working perspectives**

*Chairman Prof. Stuart Le Grice*

**Takisbiothech** Luigi Aurisicchio

**Dompé** Daniela Iaconis

**ViroStatics** Franco Lori

**University of Maryland** Kathie Seley-Radtke

**University of Naples** Vincenzo Summa

4:15 pm Shuttle from Research Park to the Hotel Flamingo

8.00 pm **Dinner**

**2022.09.30**

8.40 am Shuttle from Hotel Flamingo to the Research Park

9:00 am **Plenary Lectures** **AUDITORIUM**

*Chairman Simona Distinto*

13 - Johan Neyts Antivirals, a lot has been achieved, yet a long way to go  
*REGA Institute, KU, Leuven, Belgium*

14 - Andrea Brancale Computational approaches in the design of novel antivirals  
*University of Chemistry and Technology, Prague, Czech Republic*

11.00 am **Coffee Break**

11:30 am **Plenary Lectures** **AUDITORIUM**

*Chairman Massimo Palmarini*

15 - Matteo Iannacone Mouse models for SARS-CoV-2 pathogenesis and drug development  
*Vita Salute San Raffaele, Milan, Italy*

16 - Jean Nachega COVID-19 Vaccines Roll-out in Africa: Challenges and Opportunities  
*University of Pittsburgh, Pennsylvania, USA*

1.00-2.30 pm **Lunch**

2022.09.30

2.30-4.30 pm **Selected oral communications** *AUDITORIUM*

*Chairman Angela Corona*

8.O - Giulia Sibille

*Department of Life Sciences and Systems  
Biology, University of Torino, Italy*

In Vitro Targeting Influenza Virus Replication by a Third  
Generation Dihydroorotate Dehydrogenase Inhibitor

9.O- Agnieszka Dabrowska

*Virogenetics Laboratory of Virology,  
Jagiellonian University, Cracow, Poland*

Mechanism of action of poly(sodium 2-(acrylamido)-2-methyl-1-  
propanesulfonate) and poly(sodium 11-  
(acrylamido)undecanoate) during viral infection

10.O - Alessia Alberico

*Department of Pharmacy, University of  
Naples Federico II, Naples, Italy*

The PADAM oxidation route for the synthesis of covalent  
reversible SARS-CoV-2 Main Protease inhibitors

11.O - Jing Yi Lai

*Institute for Research in Molecular Medicine  
Universiti Sains Malaysia, Malaysia.*

Isolation and characterisation of human monoclonal antibody  
against VP35 of Ebola virus

12.O - Lia Fiaschi

*University of Siena, Dipartimento di  
Biotecnologie Mediche, Siena, Italy*

Development of SARS-CoV-2 Mpro inhibitors retaining in vitro  
activity against circulating SARS-CoV-2 variants of concern

13.O – Camilla Albano

*University of Turin - Dept. of Public Health  
and Pediatric Sciences*

Strigolactones as broad-spectrum antivirals against  $\beta$ -  
coronaviruses through targeting SARS-CoV

14.O - Sante Scognamiglio

*Laboratory of Molecular Virology,  
University of Cagliari, Italy*

HERV-K(HML8) integrations in the human genome:  
identification, comprehensive characterization and comparative  
genomics

4:45 pm

Shuttle from Research Park to the Hotel Flamingo

8.00 pm

**Closing Dinner**

## Posters

- 1 **Aaron Alvarez De Lauro**  
*Department of Biological Chemistry and Organic Chemistry, University of Exact and Natural Science, University of Buenos Aires, Argentina.*
- 2 **Simona Barone**  
*Department of Pharmacy, University "Federico II" of Naples, Italy*
- 3 **Emilia Barreto-Duran**  
*Virogenetics Laboratory of Virology, Malopolska Centre of Biotechnology, Jagiellonian University, Krakow, Poland*
- 4 **Roberta Bivacqua**  
*Department of Biological, Chemical and Pharmaceutical Sciences and Technologies, University of Palermo, Italy*
- 5 **Emilia Cassese**  
*Department of Pharmacy, University "Federico II" of Naples, Italy*
- 6 **Saili Chabukswar**  
*Laboratory of Molecular Virology, Department of Life and Environmental Sciences, University of Cagliari, Cagliari – Italy*
- 7 **Álvaro De la Cruz**  
*Consejo Superior de Investigaciones Científicas - Instituto de Química Médica (CSIC-IQM), Madrid, Spain*
- 8 **Anastasia Ferraro**  
*University "Federico II" of Naples, Department of Pharmacy*
- 9 **Karen Giménez-Orenga**  
*Universidad Católica de Valencia*
- 10 **Jyotsna Jaiswal**  
*Department of Biochemistry, University of Allahabad, Prayagraj-UP, India.*
- 11 **Miguel Maldonado**  
*Instituto de Química Médica (IQM, CSIC), E-28006 Madrid, Spain*
- 12 **Paolo Malune**  
*Laboratory of Molecular Virology, Department of Life and Environmental Sciences, University of Cagliari, Cagliari – Italy*
- 13 **Silvia Marchese**  
*Fondazione Istituto Nazionale di Genetica Molecolare (INGM) "Romeo ed Enrica Invernizzi", Milano, Italia.*
- 14 **Elena Matyugina**  
*Engelhardt Institute of Molecular Biology, RAS, Moscow*
- 15 **Alessia Onali**  
*Department of Life and Environmental Sciences, University of Cagliari, Cagliari – Italy*
- 16 **Erica Sanna**  
*Department of Life and Environmental Sciences, University of Cagliari, Cagliari – Italy*
- 17 **Susanna Scaglioni**  
*Fondazione Istituto Nazionale di Genetica Molecolare (INGM) "Romeo ed Enrica Invernizzi", Milano, Italia.*
- 18 **Daniela Secci**  
*Department of Life and Environmental Sciences, University of Cagliari, Cagliari – Italy*
- 19 **Norefrina Shafinaz Md Nor**  
*Department of Biological Sciences and Biotechnology, Faculty of Science and Technology, Universiti Kebangsaan Malaysia*
- 20 **Amelia Zheng Hua Yap**  
*Higher Institution Centre of Excellence (HiCoE), Tropical Infectious Diseases Research and Education Centre (TIDREC), Universiti Malaya, Kuala Lumpur Malaysia*

**In vitro antiviral activity of sulfated galactans against herpes simplex virus 1 strains**

**Rational design of novel non peptidic inhibitors of SARS-CoV2 3Cl protease**

**Airway epithelium and macrophages co-culture model to study SARS-CoV-2 infection.**

**Synthesis and biological evaluation of novel thiazole-based compounds as potential anti SARS-CoV-2 agents**

**Design and synthesis of novel potent inhibitors of SARS-CoV-2 Mpro**

**Comparative Genomics provides insights on Recent Activity of HERV-K(HML2) in Old World Monkeys (Macaca fascicularis and Macaca mulata)**

**Design and Synthesis of Trimeric Fusion Inhibitors of Influenza Virus Targeting the Hemagglutinin Fusion Peptide**

**Synthesis optimization of the first in class SARS-CoV-2 3CLpro inhibitor Nirmatrelvir**

**May endogenous retroviral directional therapies constitute a treatment for Myalgic Encephalomyelitis/Chronic Fatigue and/or Long-COVID-19?**

**Therapeutic potential of Parthenium Hysterophorus plant extracts against HIV-1 RT and some microbial species**

**A Novel and Versatile Class of Coronavirus non-covalent Mpro Inhibitors based on 1,4,4-Trisubstituted Piperidines**

**Development of multiple assays to evaluate the inhibitory effect of small molecules against SARS-CoV-2 RNA dependent RNA polymerase (RdRp)**

**Pseudotyped lentiviral vector as a reliable and efficient tool to assess the viral entry step of SARS-CoV-2**

**Evaluation of the antiviral potential of modified heterocyclic bases and nucleoside analogs against SARS-CoV-2**

**Exploiting computational methods to identify new potential antiviral compounds**

**Investigating the structural requirements for the dual inhibition of HIV 1 RT RDDP and RNase H associated functions**

**Characterization of the humoral and cellular immune response elicited by COVID-19 mRNA-1273 vaccine in people with HIV**

**Structural exploration around the Rilpivirine and Etravirine scaffolds**

**In silico screening and in vitro analysis of neem (azadirachta indica) extract for antivirus activity towards RNA viruses**

**The bacterial extract of a potentially novel Streptomyces sp. inhibits dengue virus serotype 2 (DENV-2) in C6/36 mosquito cell line**